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Volume Fifteen JANUARY 1904 Number One

THE WESTERN FRUIT-GROWER

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ST. JOSEPH MISSOURI

AN ILLUSTRATED MONTHLY MAGAZINE FOR PROGRESSIVE AMERICAN FARMERS

PUBLISHED MONTHLY
FIFTY CENTS A YEAR
ADVERTISING RATE:
$2.10 PER INCH EACH INSERTION

Make Your Trees Yield Dollars

"The Trinity of Successful Orcharding is Cultivation Fertilization and Spraying"

—*Prof. Bailey, Cornell University.*

Most failures in Fruit Growing can be traced directly to the omission of one of these absolute essentials. Wake up to this work—be a successful Fruit-Grower. "The yearly loss caused by the entire list of insect pests in the United States alone is variously estimated by good authorities at from $300,000,000 to $400,000,000." Is part of this loss yours? No excuse for it. Write us today. Secure your tools, pump and chemicals now and

REMEMBER

Clark's

CUTAWAY HARROWS

The celebrated orchard cultivators. Many sizes for all kinds of work, for 1, 2 or 3 horses. Worth hundreds of dollars to you. Sometimes called the spading harrow. It just spades the ground up fine, thoroughly pulverizes the soil and leaves no ridges like ordinary disc harrow.

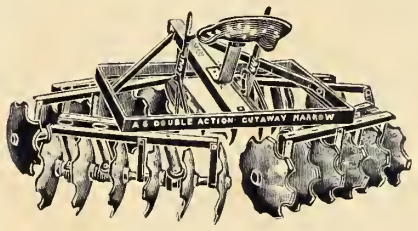
VERY LIGHT DRAFT.

Single Action, Extension Frame

Cutaway Harrow

Double Action

Cutaway Harrow



The handiest and most efficient of all orchard tools. No fruit grower can afford to be without one. **Fine for small fruits, too.**

A Special Proposition

We are willing to ship you a machine and after you have used it 10 days if you do not want to keep it we will refund purchase price and pay return freight. Write us at once. Catalogue free.

Manufactured by

CUTAWAY HARROW CO.

HIGGANUM, CONN.

REMEMBER

Empire King & Orchard Monarch

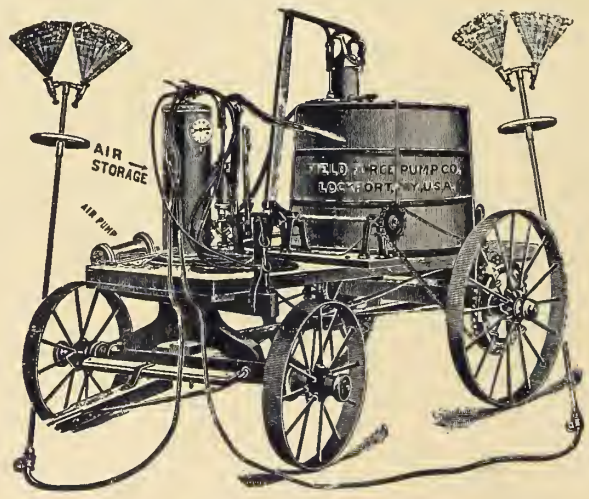
The finest line of spraying pumps manufactured. **In all sizes for all sizes of Orchards.**

SPRAY PUMPS

"Empire King" on barrel. We also mount on 100 gallon Tank, etc., 1 or 2 leads to suit.

This line of pumps is the best because:

1. They have the greatest power. Great power is necessary to produce the fine mist so necessary for good spraying.
2. They are well made, and will last longest. Low in price.
3. They are so constructed that the agitation of the spray mixture is most perfect. This is an important point, for thorough agitation is absolutely necessary, because of the fact that the chemicals will settle to the bottom of the tank unless kept continually stirred.
4. They are easy to operate. The pump which is easy to operate, and yet which will not agitate the mixture is worthless; the Empire King line are easily operated, while thoroughly mixing the spraying chemicals.



The Greatest Power Sprayer now in use, with Two Leads Complete.

"ORCHARD MONARCH" is the pump for large orchards. Runs by sprocket on wheel, sprays 2 rows at once. It does the work quickly and right. Powerful. Efficient. Catalogue free. Manufactured by

FIELD FORCE PUMP CO., ELMIRA, N. Y.

REMEMBER

"Disparene"

Greatest of All Insecticides.

Sure Death

TO

Canker Worms
Codling Moth

AND ALL

Biting Insects

Does not injure foliage. Is no experiment; thoroughly tried. The most concentrated form of arsenical poison. Endorsed by all leading experiment stations. Recommended by all that have used it.

Dr. Jas. Greene says: "Disparene has done up the worms."

Can be used alone as Insecticide or with copper sulphate and lime as a complete insecticide and fungicide.

Here's Your Fruit

Not Sprayed. Sprayed.

Manufactured by

BOWKER INSECTICIDE COMPANY

BOSTON, MASSACHUSETTS

Catalogue Free.

Missouri Valley Seed Co.

The "GOOD-SEED" Store — *ST. JOSEPH, MISSOURI* — Horticultural Supply Dep't

GENERAL WESTERN DISTRIBUTERS (WEST OF MISSISSIPPI RIVER)

You write us fully regarding your orchard, size, age, kind (write fully). We will help you to make money out of it. We have helped thousands of others. **Write now.** We handle everything for Fruit-Growers. Largest Horticultural Supply House in the world. Reference—Editor this paper or any one who ever done business with us.

SEEDLINGS

Nursery Grown and Collected

I have a large stock of the following which I wish to close out at once.

	100	1,000	10,000
American Elm—3 to 4 feet transplanted	$1.00	$8.00	.....
American Ash—1 to 2 feet, seedlings	.50	3.00	$25.00
American Ash—2 to 4 feet, seedlings	.80	7.00	55.00
American Ash—4 to 6 feet, seedlings	2.00	18.00	.....
American Persimmon—12 to 15 inches, seedlings	.40	3.50	.....
Althaea Rosea—4 to 6 Inches, seedlings	.30	1.25	10.00
Althaea Rosea—6 to 12 Inches, seedlings	.40	3.00	25.00
Betula Nigra, Birch—4 to 8 In. seedlings	.20	.80	6.00
Betula Nigra, Birch— 6 to 14 In. seedlings	.30	1.50	12.00
Betula Nigra, Birch—12 to 18 In. seedlings	.40	3.00	25.00
Catalpa Speciosa and Kaempferl, Tea's Japan and Bignonloides, seedlings, large stock of each. Early frost killed tops of small Catalpas	100	1000	10,000
4 to 12 Inches	$0.20	$1.50	$12.00
2 to 4 feet, seedlings	.50	4.00	.....
4 to 6 feet, seedlings	1.50	12.50	.....
6 to 10 feet, seedlings	7.00	... ..	.....
Horse Chestnut—12 to 18 inches, seedlings	1.00	7.00	65.00
Sweet Gum—4 to 6 inches, seedlings	.30	1.25	10.00
Sweet Gum—6 to 12 inches, seedlings	.40	3.00	25.00
Sycamore—6 to 12 inches, seedlings	.40	3.00	25.00
Spanish Oak—6 to 14 inches, seedlings	.40	3.00	25.00
Silver Maples—8 to 16 inches, seedlings	.4	3.00	25.00
Silver Maple—2 to 4 feet, transplanted	1.00	7.00	.....
Silver Maples—4 to 6 feet, transplanted	2.00	18.00	.....
Russian Mulberry—6 to 12 inches	.30	1.00	8.00
Black Wild Mulberry—4 to 6 inches	.20	2.00	18.00
Black Wild Mulberry—6 to 14 inches	.60	5.00	40.00
Walnut—Black, 6 to 14 inches	.60	5.00	40.00
Walnut—White, 6 to 12 inches	.60	5.00	40.00
Wistaria—Chinese, white, 2 years	3.50	30.00	.....
Wistaria—Magnifica, 1 year	1.00	8.00	.....

Small collected seedlings for bedding plants, Sugar Maples, 4 to 6 inches, 60c 1,000, $6.00 10,000; Red Bud, Sweet Gum, Tulip Poplar, Rhamnus Carolinus, Sycamore, each 4 to 6 inches, $1.25 1,000; $10.00 10,000. Scarlet Maple, Sugar Maple, Tulip Poplar, Sweet Gum, Red Bud, Chestnut, Oak, each 6 to 12 inches, collected, $3.00 1,000, 10,000 of each or assorted, $25.00. Collected stock of Thuja Canadensis, hemlock, 6 to 12 in., $4.00; 1 to 2 feet, $6.00; 2 to 3 feet, $10.00 1,000. Scarlet Maple and Tulip Poplar, collected stock, 4 to 7 feet, $2.50 100; $18.00 1,000. Order at once.

I also have seed of the following:	1 lb.	10 lbs.
Calycanthus Seed	$0.40	$3.00
Cornus Florida	.25	2.00
Cornus Stolonifera	.30	2.50
Halesia Tetraptera	.60	5.00
Red Bud, clean	.40	3.00
Dirca Palustris, leatherwood	1.00	....
Chionanthus, white fringe	.50	4.00
Persimmon, American	.25	2.00
Passiflora, Passion Flower, clean seed	2.00	....
Trumpet Flower	.60	5.00
Viburnum Nudum	.40	3.00

Other seeds in small lots. Write for trade list. Orders accepted and held until Spring if desired, while stock lasts.

J. H. H. BOYD

Gage, Sequatchie County, Tennessee

Surplus List of Peach Trees

TENNESSEE WHOLESALE NURSERIES

J. C. Hale, Proprietor *Winchester, Tennessee*

SURPLUS LIST OF ONE YEAR PEACH.

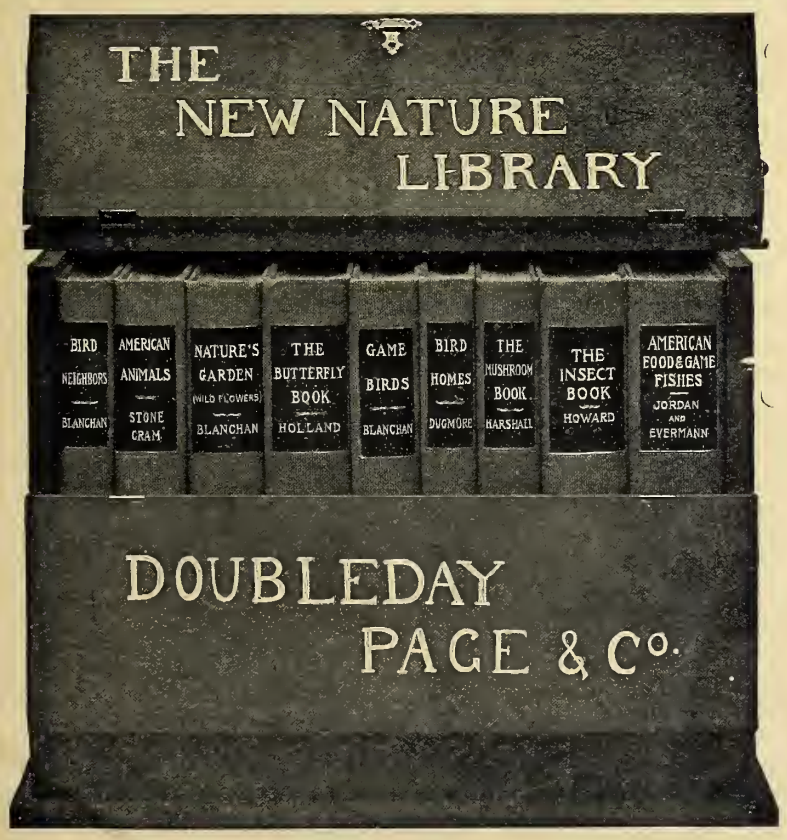
	1 to 2 feet.	2 to 3 feet.	3 to 4 feet.	4 to 5 feet.
Admiral Dewey	875		1,375	
Alexander	1,925		450	
Amelia	800	50	1,525	725
Bell of Georgia	1,905	900	200	2,000
Chairs Choice				125
Champion	225		4,375	500
Chinese Cling	1,500			
Crosby	1,125		2,200	
Crawford's Early	450		25	
Crawford's Late			2,025	2,825
Early Rivers	677	1,225	1,600	1,050
Early Tillotson	525		1,650	525
Elberta	25,000	50,000	25,000 (50,000 9-16)	25,000 (25,000%)
Fitzgerald	375		675	
Foster	50		475	550
Governor Hogg			850	
Greensboro	3,525	3,400	2,900	
Hiley	400	250	3,310	2,375
Hill's Chilli	475			
Lady In Gold	100		275	300
Lemon Free			150	
Mamie Ross	1,000	325	125	
Motlow	300		75	350
Mountain Rose	1,000		1,100	575
Muir	35		50	
O. M. Free	350		150	
Picquett's Late			150	
Red River	550		1,025	750
Reeve's Favorite	500		750	50
Salway	125		450	275
Slappy	(660 ⅝ to ¾)		(810 9-16 to ⅝)	925
Snow Cling	200		675	375
Steven's Rare Ripe	850	75	250	425
Stump the World	250	50	100	350
Thurbur	2,000		450	125
Triumph			1,300	
Waddell	500	100	450	50
Wager	25		100	805
William's Peach	125		200	50
Wonderful	600			

SURPLUS LIST OF JUNE BUDS.

	6 to 12 inches.	1 to 2 feet.	2 to 3 feet.	3 to 5 feet.
Abbot Peach		300	325	
Alexander	50	250		
Bell of Georgia	3,450			525
Carman	26,050	37,350	2,575	525
Champion		2,100	1,125	
Elberta	50,000	200,000	150,000	25,000
Emma	250	2,350	1,850	
Greensboro	150	550	2,650	475
Hiley	31,100	24,950	15,400	2,525
Hill's Chilli		550		
Mamie Ross	550	2,350	150	
Mountain Rose	800	3,100	1,275	
Motlow			575	
Red River	750	4,650	2,500	
Salway		950	500	
Slappy		2,950	6,350	1,975
Sneed	400	1,850	1,150	
Triumph		650	50	
Waddell	1,300	1,000	2,825	

Address: TENNESSEE WHOLESALE NURSERIES, Winchester, Tennessee

BOOKS FOR ALL THE YEAR



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Every tree is sold under a guarantee of $5.00 on each tree that they will be true to name.

We are the only Nursery propagating the MISSING LINK.

BEGAN BEARING AT THREE YEARS OLD.

A Row of Six-Year-Old MISSING LINK APPLE TREES

AVERAGE HEIGHT, 17 FEET; WIDTH OF TOP, 20 FEET; CIRCUMFERENCE AT BASE, 21½ INCHES.

THE MISSING LINK APPLE

A Little Time

is All it Takes to Tell You Why You Should Plant *Missing Link Apple Trees*

First: because the apple is the *longest keeper known,* and the flavor is all that could be desired. The Apple will *keep* in any ordinary cellar 12 months; thus by planting *Missing Link trees* you can have Apples every day in the year, as they will keep in prime condition until the new crop comes in. Second: owing to the hardiness of the trees, they are adaptable to every climate where Apples succeed. Third, because the trees are a very prolific bearer. Fourth: because it requires but a small investment, once, for a lifetime, to have an abundance of *these fine* Apples for family use. Fifth: because they are the most profitable Apple you can plant for market, as you can hold them until there are no other Apples on the market, then a fancy price can be realized.

For the asking we will send you printed matter which will give the full history of the Apple and will also give names of parties who have fully investigated it, and were so well satisfied that they have planted large numbers of the trees.

We Have Everything

the Tree Planter Wants in the way of Trees and Plants

Consisting of a full and complete assortment of varieties in the different grades of *Apple, Peach, Pear, Plum, and Cherry* trees, also *Currant, Gooseberry, Grape, Raspberry Blackberry and Strawberry* plants. A full asortment of Flowers, Shrubs and Ornamental trees.

Owing to the past fine growing season, and the fact that our trees are all grown on new land, we have the finest lot of trees and plants to offer we have ever had. Every tree is guaranteed to be entirely free from any disease whatever and are extra fine in every way. Will be glad to send samples to prospective buyers.

All the leading varieties of *Apple* trees and a few leading varieties of *Pear,* we are offering are strictly *Pedigreed Trees.* They have been carefully re-selected for the fourth time. The time is at hand when the practical fruit grower is demanding *PEDIGREED TREES* and as we have already devoted 35 years in building up the standard of the apple, we are in the front rank in supplying *GOOD trees.* Send us your address and we will take pleasure in sending literature which will fully explain our method of propagation.

It makes no difference whether you want one or a million trees we will take pleasure in quoting prices.

Our Prices Are Right ***Our Trees Are Right***

WE WANT MORE AGENTS. Our agents succeed where others fail; reason—we have what the tree planters want; Missing Link trees; Pedigreed trees. Write for terms. All communications will receive prompt attention.
Write us today for prices on trees, or terms to agents.

Missing Link Apple Co.

CLAYTON, ILLINOIS *NURSERYMEN* CLAYTON, ILLINOIS

The Western Fruit-Grower
An Illustrated Monthly Magazine For Progressive American Farmers
Volume Fifteen ST. JOSEPH, MISSOURI, JANUARY, 1904 Number One

New Methods in the Orchard

Mr. E. G. Hoober of Kansas Tells How He Picks and Packs His Apple Crop

Acting upon your request for my experience in fruit-growing, I shall give in what follows, to best of my ability, my experience in planting, growing, cultivation, pruning of the trees and my methods of handling the fruit.

We have low sandy land, with clay subsoil, and have the advantage of an underflow that is prevalent all along the Arkansas valley. This underflow if from 5 to 7 feet below the surface. In planting my preference is a well-grown one year tree direct from nursery to its permanent residence. The reason I like a one-year tree best is because I head trees somewhat higher than the majority and have fewer main branches. Would prefer a two years tree if not cut back at nursery. I believe in planting twenty-five feet each way, grubbing out after three or four crops every other tree in each row which makes a splendid permanent orchard of the remaining trees. This mode of planting applies to the Ben Davis, Winesap, Stayman Winesap and other fast growing spreading trees. Trees such as White Winter Pearmain, and Missouri Pippin should be planted thirty feet and left so.

In planting I think the proper way is—where you have nice long rows—six rows of one variety then six of another, rows running east and west. This gives a chance for cross-pollination and makes a handy way to work during the packing season.

In planting a commercial orchard in this locality I would advise the planting of Maiden Blush, Cooper's Early White for early markets, Grimes Golden, Jonathan and Delicious for fall and the holiday trade; Winesap, Stayman Winesap, Ben Davis, Black Ben Davis and Missouri Pippin for winter and spring markets. These ten varieties are enough for any commercial orchard in Southern Kansas. They are always salable and mark as among the topnotchers on any market.

In pruning young trees it is advisable to do so in November. Shape and head as you desire at this time and your trees will surprise you by their growth the following season. Now again in June or July it is a good plan to cut out water sprouts, especially in bearing trees as it throws the whole strength of the tree to the apple. In heading a young tree I think it advisable to head from 3 to 4 feet from ground. This will give you an upright grower, let the warmth and air get under your tree, put a better color on your fruit and be more satisfactory in many ways. I believe that every tree should be pruned to some extent every year. If your apples begin to be small on trees, cut away plenty of brush, let the sunlight into them. Sunlight and air make quality and quality makes the dollars. One thing I advise you not to do, especially on bottom land such as ours, is not to cut big limbs off your trees after they begin to age, nor is it the proper thing to do at any time and will not be necessary if the tree has had care from planting time. No limb should be allowed to grow and thrive that will have to be removed when it gets larger, thus endangering the life of the tree—especially a Ben Davis—by bleeding to death.

After you have picked the apples from trees, all broken and dead branches should be removed and the tree allowed to get the kinks out of its joints before the pruning season is on.

"THE PACKING TABLE IS KEPT CLOSE TO THE PICKERS."

Cultivation.

Along about the fifth of May I start the disk in the orchard, working it one way, then crossing the other. After the disk then run the harrow twice, following the harrow with the tongueless cultivators with extra large shovels. We work it double with the cultivators, then harrow again and so on up to the latter part of July when it is time to stop on account of the fruit and give grass time to make a cover crop. Then in November we disk again and the orchard is ready for the winter. Young trees should be cultivated every two weeks.

A MOVABLE PACKING SHED FOR APPLES.

Our Way of Handling the Fruit.

Our way of handling fruit is our own way. It may not appeal to the fruit buyer, but the man who grows and handles and markets his own fruit I think will find something to interest him and possibly get a few points that will lessen the labor and worry of the packing season. We have four steel wheel trucks with five inch tries to lessen the draught in hauling the heavy loads in the sandy soil. These wheels are from the Electric Wheel Co., Quincy, Ill. The wagons are half cut under, making it convenient in turning between trees. They have flat wide beds, fourteen feet long and six feet wide with sideboard six inches high. Forty bushel of bulk apples can be hauled easily. We use two of these wagons for gathering and sorting drop apples. We use a small crew for the windfalls, two to gather and three to sort. One team and two men work the two wagons. As the apples are gathered they are hauled to a shed where the sorting is done. The front wheels being run upon a raised platform, thus making a run for the apples onto a slatted table which fastens upon the rear end of the wagon. Here the sorters go to work and sort into three grades, the sound, the "specks" and the culls. The sound drop apples are sent to cold storage in bulk; the specks and bruised ones are sold private to individuals from town and wagons from Western Kansas; the culls go to the vinegar factory.

The remaining wagons are used in connection with the packing crew in the orchard, one to haul empties and the other the packed barrels ready for storage to a loading dock where the storage teams take them on to town for cold storage.

For a sorting table I have an invention of my own and I think it about the best thing out. It is on low steel trucks, the wheel with tires eight inches wide, twenty inches high in front and two feet behind. The cut will show it better than I can describe it. The press accompanying the sorting table has many improvements over anything I could ever find, so I manufactured one on my own ideas and found it to be just what I was in need of for fast work. My man headed one hundred and twenty-six barrels in four hours and one-half and I'll wager he can head three hundred in ten hours. Am getting a patent on the header and shall introduce it to the market for next season.

In selecting men for my crews you will not see a dead head in the group as shown in the cuts. I won't have them. I pay wages from one dollar to two dollars a day and board and carry from thirty-two to forty men. In the picking crew when running full force I use ten packers and a foreman on each side of wagon, two facers, one face gatherer, and three sorters, a header and a man who coopers and stencils the barrels. We grade fancy an dchoice No. 1, using XXXX brand to designate fancy and XXX to designate choice. These brands we commenced stenciling on the faced head of the barrel four years ago and has been adopted by most of the growers here as well as the produce houses.

As you will notice we use the half bushel bamboo baskets to pick in. We find, by placing a handle made of double hooping, with a hook to hang basket to ladder or branch, that the basket is an improvement over the sack in that apples are not bruised by the movement of the picker and that the picker himself has an easier method of labor. These baskets are numbered, as are the ladders, and a man is given a basket and ladder of corresponding numbers and these he retains and is responsible for, during his employment. All men with baskets having odd numbers are in charge of the foreman on the left side of the sorting machine. The even numbers go on the right hand and have a foreman of their own. These foremen are men who have been with us and who understand the duties required of them. A man that can work under them and shirk is pretty smooth, indeed. The foreman's chief duties are to break in new men to the uses of the ladder and basket, a clean picking of the tree, a careful handling of the fruit and that the picker earns his wages. He also has the privilege of discharging any man under him for good reasons. We have very little trouble getting men and less in keeping good men.

We store with the Wichita Ice and Cold Storage Co. and have things about

CHANGING PLATFORM FROM ONE LOCATION TO ANOTHER.

Look at the Date

On Your Address Tag

If it is dated February, 1903, or earlier, make an effort to secure four new subscribers and send with your own renewal for **one dollar.**

Last month we sent statements to all those whose subscriptions had expired, and our office force has been busy ever since entering up renewals and new names. Many of our readers say that a single number is worth a dollar, and we believe this January issue **surely** is—don't you?

Next month we shall send statements to all whose address tags read March, 1903, or earlier, and if remittances are sent to us by February 1st, we shall be saved the trouble of sending out the bills. If you find there is an error in your date, write us at once, so that we may make the correction.

Make an effort to increase "The Fruit-Grower Family" to the extent of four new names—you will make them all happy—and us too. Address

The Fruit-Grower Co., St. Joseph, Mo.

32 years ago we occupied one room with two clerks and published a catalogue a quarter the size of a hymn-book.

"Grandfather Traded With Us"

One of the greatest joys of this great business is the many kind letters we receive daily from our customers, expressing their pleasure and satisfaction with our goods and methods.

Often the most significant part of the letter is embodied in the few words: "My grandfather traded with you years ago." It is the complete confidence of our customers in our honesty, born of past experience in dealing here, that enables us to hold their continued trade.

One-time special "below cost offerings" to catch an occasional customer, and making up the loss on subsequent orders, would never build a business like ours.

It is the constant saving and steady stream of pleasant business relations which makes our patrons eager to speak a good word for us at every opportunity.

Our prices are 15 to 50 per cent below regular retail figures.

We Want You to Try Us

and test for yourself our ability to please you. Tell us what kind of goods you are interested in and we will send you without charge any of the following illustrated special catalogues quoting wholesale prices. Merely mention the number or letter of the catalogue you want.

100 Artists' Supplies
105 Athletic Goods
110 Blacksmiths' and Machinists' Tools
115 Builders' Hardware and Supplies
120 Carpenter and Builders' Tools and Materials
125 Crockery and Glassware
130 Cutlery
135 Dry Goods
140 Fancy and Novelty Goods
145 Farm Implements
150 Fishing tackle
155 Popularpriced Furniture
160 Harness
165 Jewelry
170 Kitchen Supplies
175 Laces, Embroideries, Ribbons, Trimmings
180 Lamps and Lanterns
185 Linoleums, Carpets and Curtains
190 Men's Hats and Gloves
195 Men's Shoes
200 Men's Wearing Apparel
205 Music and Musical Instruments
210 Notions
215 Saddles and Saddlery
220 Silverware
225 Sporting Goods
230 Stationary and Office Supplies
235 Stoves
240 Toys, Dolls and Games
245 Underwear
259 Vehicles
255 WagonMakers' Supplies
260 Watches and Clocks
265 Women's Shoes
300 Women's Catalogue (Cloaks, Furs, Suits, Skirts, Waists, Hats, etc.)
B Bicycles
C Baby Carriages
D Dairy Supplies
G Drugs and Patent Medicines
J Telephones and Electrical Goods
K Cameras and Photo Supplies
M Books
R Fancy Grade Furniture
T Trunks
U Youths' and Boy's Clothing
V1 Men's Made-to-order Clothing with samples of fabrics. Suits $10.50 to $16.50
V2 Same as V1 except suit prices $18.00 to $30.00
VO Made-to-order Overcoats with samples
W Men's Ready-Made Clothing
Mackintosh Catalogue
Butterick Fashion Catalogue
GL Grocery List (published every 60 days).

Our Big Catalogue contains over 1100 pages and wholesale prices on Groceries, Dry Goods, Crockery, Hardware, Furniture, Harness, Implements, Vehicles, Clothing (all kinds for Men, Women and Children), Millinery, Musical Instruments, Sewing Machines, Bicycles, Sporting Goods—practically everything that anybody could want.

It also contains freight rates, full instructions for ordering, and tells you everything you might want to know about us.

Ordering is easy from this wonderful book, which costs us almost one dollar apiece to print and send out.

Send for it today and save the profit you pay your dealer. You can get your money back if your purchases are not satisfactory. Fill out this slip, enclosing 15 cents for partial postage as a guarantee of good faith.

Send four 2-cent stamps for our

10 Color Wall Hanger

showing the inside of this building, with the goods and the clerks at work. One of the most complex and complicated pieces of lithography ever attempted. Very interesting and attractive. You can get it for what it cost us—four 2c stamps.

Today, we occupy more than 200 times as much floor space, employ over 3000 people and our catalogue contains over 1100 large pages.

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Complete satisfaction or money refunded without question.

as convenient as C. W. Southward, manager, could make it for us. Altogether, including the bulk we have about five thousand barrels of apples here in storage.

Now, gentlemen, if you can find anything in the above to interest you I shall be pleased, for I am no literary genius as you are aware of by this time and it is hard work for me to attempt anything in this line.

ED. G. HOOVER.

Mgr. Hoover Orchard, Wichitá, Kan.

Cheapening the Value of Nursery Trees.

At the various horticultural meetings the members discuss what kind of trees ought to be sent out by the nurserymen—they must be free from crown gall, woolly aphis, San Jose scale, etc.; must be propagated from selected bearing trees and grown in the right kind of soil to produce a good, healthy wood, and all that. This discussion is all right, for of course all growers want that kind of tree. But too often they are not willing to pay for them. They make up a list of requirements which they demand in their trees, and yet when they go the market they too often hunt around to find the fellow who offers the cheapest trees, losing sight of the virtues they think the trees should possess. Good trees, like good fruit or good live stock, will cost money, and if nurserymen are to furnish trees which shall come up to the standard of excellence, the growers must be willing to pay a better price for them.

THE LOW-DOWN WAGON FOR HAULING APPLES.

At the meeting of the Texas Horticultural Society last summer this subject was discussed by some of the growers and nurserymen present. We present herewith extracts from two of the addresses which will give one an idea of the situation. Mr. C. Falkner, in the course of his address, recommended that the planters buy better trees, and said: "I want to say that 75 per cent of the stock sent out by the average nurseryman is unfit for planting. I mean by that they are dwarfed and stunted. If you pick out the trees as large as you want to handle, you would reject three-fourths of them. The best friends I have are these nurserymen and they know I mean them no harm. They grow their stock too close. They want to get too much out of a piece of ground. You take a healthy, vigorous, stocky tree, and that is the class of tree you want to plant."

Following this Mr. E. W. Kirkpatrick, a nurseryman, and one of the nicest old fellows one ever met, gave the nurseryman's side of the question, and it is worthy of serious consideration:

"If you get a tree that is well grown, you must pay for it. Give the value of the goods and then you will get the goods. Tell the people that you are willing to give $1 more for a tree if you can get good stock. I want fine hogs, I will give $2,000 for a hundred. I can buy them from your neighbor for $1,500, scrubby hogs. (Applause.) That is the way you planters are doing us nurserymen. You are degrading our stock and offering a premium for poor stock when you are only willing to pay three cents for a tree that is healthy, strong and vigorous and that will be worth $1 in your orchard. You had better dig them up than to plant them. When you are wiling to pay for what you get, you will get it."

There is much food for reflection in these statements. Put yourself in the place of the nurseryman. You would not want to sell No. 1 grade of fruit at cull prices. Neither should you expect to get an ideal tree at less than the cost of production.

Fruit-Grower Readers are Good Customers.

"The Fruit-Grower certainly reaches a class of farmers who read advertisements," said Mr. A. H. Kirkland of the Bowker Insecticide Co., Boston, Mass., recently. "Last season we carried an advertisement in the Fruit-Grower, and several weeks after the first appearance of the advertisement we received a letter from a man in the heart of India who said he had read our advertisement in the Fruit-Grower, and wanted to know if we could help him. He told us of the insects which seemed to be working on his fruit trees, and asked if our Disparene would help him. We answered his questions as best we could, from so great a distance, and after several weeks' intermission we received an order from him, with a draft for a snug sum to pay for a trial shipment. But the most interesting part were the directions given for shipment of the goods.

"'I am off the railway many miles,' he wrote, 'and the goods will have to be carried across the mountains on backs of mules. Pack the Disparene in packages weighing not over 50 pounds each, so that one can be placed on one side of the pack mule and one on the other. In this way the goods will reach me all right,'

"The goods were packed as directed," concluded Mr. Kirkland, "and we have no doubt reached the gentleman safely. The Fruit-Grower certainly is a good advertising medium."

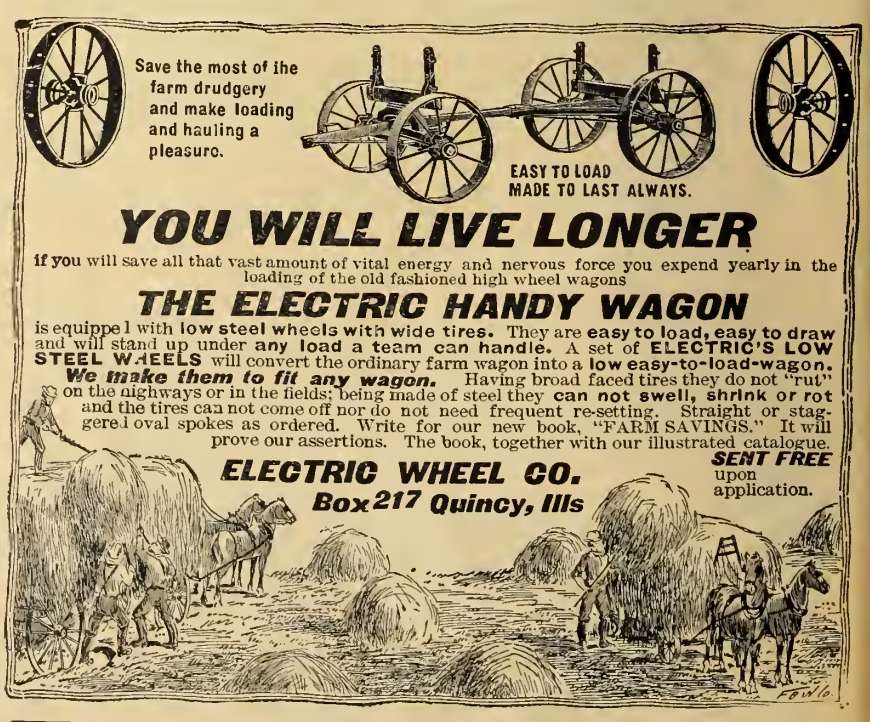
Hard on Old Ben.

In the October number of the Fruit-Grower you score one for Ben Davis because it is good cooked and served with "good rich cream." Well, most anything can be made eatable by using plenty of "good rich cream" and sugar. But that was not the kind of apple that tempted Eve—as she never took time to cook and cream it—so you may score one more for Ben Davis, because it will not have to answer for the above charge. No, we want our apples raw, or natural—life is too short to waste in cooking and creaming them, besides it is generally inconvenient to do so. The Oregon Agriculturist quotes Ben Davis is selling for 85c per bushel box, while some other varieties bring more than twice that price, and choice Spitzenburg brings $2.00. However, we will expect the fruit papers in the Ben Davis country to continue to brag on it, as it needs it in order to find a market, though this year Ben Davis is a failure here—we did not have a peck from several hundred trees. But we don't miss them much, as we have a fine crop of turnips of the genuine variety.

B. F. WAMPLER.

Carthage, Mo.

Now, Brother Wampler, who said that Eve was tempted with an apple of any kind? Where did you get that idea? How do you know it was an apple? Don't condemn Ben Davis because it was not used on that historic occasion, for it is not likely that even one of the finest quality apples was used. But, seriously, you are too hard on Old Ben. Don't overlook the fact that a great many apples are cooked, so that if Ben Davis bakes nicely it is a point in favor of this variety. Not all apples are eaten in a fresh state; nor are other fruits. A year or so ago, when the editor of the Fruit-Grower was at Carthage, did you not send him several fine specimens of Kieffer pears? Confess now, and admit—as you must admit—that Kieffer pears owe their popularity to the fact that they are good for canning and preserving, rather than to eat out of hand. What have you to say in defense of yourself when you raise Kieffer pears and still condemn Ben Davis?—Editor.



Early Asparagus

The quick growing, early, big stalk sort, our leader, **Giant Argenteuil.** Delicate green, tender and succulent. Very prolific. Donald's Elmira, Palmetto and other good kinds. Large stock.

Strawberry Plants

Stock complete of strong, well rooted, vigorous plants, best varieties. We recommend such favorites as **Early Hathaway, Louis Hubach and Marie.** All the choice kinds. Get free fruit catalog.

HARRISON'S NURSERIES, Box 32, BERLIN, MD.

Apple Trees

1 and 2-Year, Unsold Jan. 1, 1904

2,500 Arkansas Black
126,920 Ben Davis
6,620 Baldwin
2,120 Car Red June
1,100 Clayton
480 Canada Red
1,100 Duchess Oldenburg
8,580 Early Harvest
760 Flora Belle
55,680 Gano
38,500 Grimes Golden
830 Golden Russett
810 Gravenstein
14,980 Huntsman
8,210 Ingram
24,930 Jonathan
980 King
650 Keswick
17,490 Missouri Pippin
8,150 M. B. Twig
6,570 Maiden's Blush
1,300 Northern Spy
7,320 N. W. Greening
1,290 Paradise Sweet
5,380 Payne's Keeper
5,210 Rawles' Janet
460 Rambo
780 Red Astrachan
9,680 Rome Beauty
2,080 Roman Stem
9,940 Smith's Cider
1,780 Scott's Winter
960 Snow
1,100 Summer Queen
2,350 Western Beauty
7,850 Wealthy
13,970 Winesap
3,840 Wolf River
15,740 York Imperial
2,380 Yellow Transparent

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WHOLESALE AND RETAIL

Location, 67 miles west of St. Louis on main line of Mo. Pac. Ry. 100,000 cubic feet Frost-Poof Cool Storage. Established 1872, Incorporated 1892.

CAPITAL STOCK AND SURPLUS, $60,000.

Our nurseries are not "on paper," but comprise over 400 acres devoted exclusively to the Nursery Business. Over 170 acres covered with young growing Nursery trees—no old, overgrown, unsalable trees are allowed to stand and thus take up acreage and breed disease. Over Two Million Fruit Trees now growing on our premises but nothing over 2 years from bud or graft.

PEAR TREES

100,000 Kieffer, the best commercial sorts. Full assortment of other varieties. All grown on well branched whole roots, imported French stocks. Will cost you no more than others charge for trees grown on Japan stocks, and in our opinion are worth double.

CHERRY TREES

150,000 in stock, mostly Richmond, Montmorency, Wragg, Baldwin, English Morello, etc. Just the sizes you want.

PLUM TREES

162,000, mostly on plum stocks. High grade. Best sorts for general planting.

Our shipments, Fall 1902 and spring 1903 consisted of over one million fruit trees, which went to thirty-four states and territories, aggregating about sixty-five furniture car loads.

Write for new Condensed Wholesale and Retail List. **We pay the freight** at prices in this list.

J. Bagby & Sons Company

NEW HAVEN, MISSOURI

Peach Trees

1 Yr. from Buds, Unsold Jan. 1, '04

540 Athens
2,080 Alexander
640 Barnes
3,300 Carman
1,160 Crawford's Early
20,780 *Crawford's Late*
17,320 *Capt. Ede*
19,100 *Champion*
4,710 Chair's Choice
650 Chinese Cling
6,040 *Crosby*
102,860 *Elberta*
3,680 Foster
2,160 Family Favorite
2,850 Fitzgerald
810 Globe
3,710 Greensboro
860 Emma
1,000 Gold Dust
3,100 Golden Gate
2,380 Gold Medal
5,870 Heath Cling
1,340 Henrietta
1,990 Lady Ingold
3,020 Mt. Rose
6,320 *Matthew's Beauty*
1,430 Muir
2,430 Mixon Cling
980 Mixon Free
3,120 Queen
9,690 *Reeve's Favorite*
3,360 Ringold
8,790 Salway
1,540 Smock
1,630 Sneed
650 Susquehanna
2,140 Thurber
9,820 Triumph
2,470 Wheatland
5,470 Wonderful

Varieties true. No disease. All grown on land never before in peach trees.

Orcharding in Missouri

By Dr. J. C. Whitten

Knowing of the interest in planting new apple orchard in Missouri and adjoining states, the Fruit-Grower has arranged with Dr. J. C. Whitten of the Missouri State University, for a series of articles on the planting of an apple orchard and its care. Dr. Whitten is well qualified to discuss this subject at any time, and especially so at the present time, as he is himself planting an orchard on just such soils as have to be used by our readers. His articles, therefore, will have an added interest because of this fact. The first installment of the article is presented herewith, others will follow later.

The last census accredited Missouri with having over 20,000 apple trees, planted in orchard form, or about one-third more than any other state in the Union. Nearly 12,000,000, or considerably more than half of them, had been planted within the past ten years, showing that Missouri's increase in apple planting for the decade was far greater than that of any other state. The other states showing the greatest increase are Illinois, Kansas and Arkansas, in the order named, showing that Missouri is the center of activity in apple orcharding the point toward which apple growing is shifting from the older states to the central west. In some of the older sections of the country apple planting is on the wane rather than on the increase. It is true that Missouri has not yet reached first place in apple production. That is because our orchards are mostly young. Probably half the apple trees now growing in our orchards have not yet come into bearing, and certainly far more than half of them have not yet reached their prime, or their period of full bearing. During the decade now passing, or since 1900, the planting of apple orchards in this state has continued with increasing activity. Some of the largest orchards of the state have been put out during the past three years, and the planting of immense areas is still going on. Business men are going into the industry as a commercial investment of their money; successful farmers are turning more and more attention to apple growing, as an important factor in farming. Great areas of virgin forest are today being cleared off to plant directly in apple orchards. This accelerated growth in apple growing indicates that the present decade will show far greater increase than did the past, in this state. We may rationally conclude that in the next few years, when our apple orchards are in bearing, that Missouri will take first place in apple production as she has already taken first place in the number of her apple trees. The available apple land of Missouri has, as yet, hardly begun to be planted.

This immense activity is opening up new questions—it is presenting new problems to be solved. The growers are active in studying these problems; the agricultural and horticultural press is disseminating information among the growers. Papers upon the various phases of the work are continually being written and read. Too much can hardly be said or written by way of exchange of ideas concerning the work. Though each phase of the subject has been discussed again and again, each one adds some new idea, or some new application of an idea which is helpful in perfecting methods. It is pertinent then, that these discussions continue, even though they may be concerning the same topics. The following are some of the topics that are of fundamental importance in considering apple planting.

Soil and Location

Apple trees thrive best upon well drained land. A liberal admixture of clay is good providing it contains sufficient sand or gravel to secure under drainage. Trees do not thrive well where they have wet feet. The character of the subsoil is of more importance than the surface soil. If the subsoil is of such character that the roots can run down deep, trees will grow well even if the surface soil is not very rich.

It is of first importance to plant where the trees can root down deeply. They will not do this in a water-logged soil. A deep-rooted tree takes much of its water from deep in the ground, where there is not much change in temperature between day and night or even between summer and winter. Avoiding fluctuations in the temperature of the water supply of the tree is of the greatest importance. During a hot day a deep rooted tree takes its water from depths where it is cool, and this cool water, being evaporated as it is carried to the tree top, has the effect of preventing injury from the heat. Of greater significance still is the fact that a deep-rooted tree can take up water below frost in winter, and that this water is about the same temperature as that which was taken up in summer. Winter injury is fundamentally due to the drying out of the cell sap at a time when it is too cold for the roots to replace this water as it is needed. If the tree roots deeply below frost it will often escape injury when shallow-rooted trees suffer greatly.

The above fact is well illustrated in some of the soils of the Ozarks, where a gravelly, red clay subsoil enables the trees to root deeply. It is also most prominently observable in the "loess" soil along the great rivers of the state, where forest trees as well as apple trees, root more deeply than anywhere else in the state. In this soil an elm tree one foot in diameter may root down 100 feet deep. It gets water of practically the same temperature the year around. Apple trees in this soil partake of similar deep rooting habit and are rarely injured by summer heat or winter cold. On the bluffs, or hillsides along most of our smaller streams similar conditions may be found. A spot for a family orchard may be found on almost any good farm in the state, but for a commercial orchard land particularly adapted to this purpose should be chosen.

Atmospheric drainage is of as much importance as soil, or water drainage. Cold air settles down and flows off in the low places just as water does. Evaporation from plants and from the surface of the ground cools the air at night, sometimes causing frosts. This cool air flows to the low places, and the higher elevations are warmer because of the warmer air that is left in contact with them. This fact is observable as we ride overland at night,

(Continued on Page 43.)

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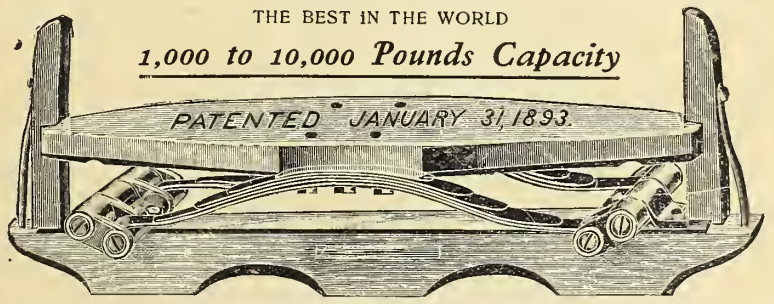

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ST. JOSEPH MISSOURI

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W. G. Campbell, Jr., General Manager. James M. Irvine, Managing Editor

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Volume 15 ST. JOSEPH, MO., JANUARY 15, 1904 Number 1

The article published in this issue on poultry-keeping as an adjunct to fruit-growing is the first of a number of articles on this subject, which we believe will be as interesting as any articles ever published in the Fruit-Grower. There is no reason in the world why these industries should not be combined, and both made tne more profitable because of the combination. Poultry-keeping has become a very important industry, and it can be carried on so successfully with fruit-growing that we have no doubt many persons will add this side line during the coming season. Readers of the Fruit-Grower who have had experience in this line are urged to send description of their plant, with a statement of how the same is managed to best advantage.

At all of the Western horticultural meetings this winter one of the most popular subjects discussed was the use of the box as an apple package. This subject has been made made very timely by the high prices of barrels, and it is likely there will be more of a demand for boxes in the future. One good thing about the agitation of the box as an apple package is that everyone who has considered the matter, knows that it will result in only good fruit being packed and stored. And this is what is sorely needed.

Nurserymen and plant dealers report a very heavy demand for blackberry and raspberry plants this season. These fruits have been somewhat neglected in certain sections of late years, and are now coming back into their own. Last season, in spite of the freeze, these fruits did well. It is gratifying to note, too, that some valuable new varieties of these fruits are being grown. A number of new blackberries are now being pushed, as well as several raspberries.

At the close of the late meeting of the Missouri State Horticultural Society, it is said that one of the saloon keepers of Columbia said that he had never seen such a crowd as had attended the meeting. He had sold only two glasses of beer, he said, to members; their coming to town had certainly not increased the business of the saloons. Those who know the fruit-growers, however, were not surprised to hear this report—indeed, the only cause for wonder is as to who it was who bought anything from the saloon keeper at all.

What do Fruit-Grower readers think of the smaller type we are using, by this time? The type is not very much smaller, and the white space between the lines makes it more legible to some persons. How is it with the majority? We can go back to the old type face, if any considerable number of our readers have trouble in reading the type we have used for several month. The matter placed in our columns is intended to be read, every word of it, and if there is any difficulty in reading the type we now use, then we will change it. When writing us, tell us what you think of this new type.

On November 20, 1900, a meeting of commercial and manufacturing organizations was held at St. Louis, at which time a move was set on foot to secure certain amendments to the interstate commerce law which would give the interstate commerce commission the power to regulate freight and passenger rates, where they were deemed unreasonable. At the meeting a committe was appointed to draft an amendment to existing national laws which would confer this power. This committee has had a bill introduced in Congress covering this point, and it is hoped that it will be enacted a law at the present session. When the interstate commerce commission was organized it exercised the right to enforce equitable railroad rates, and the plan worked satisfactorily until the supreme court of the United States finally decided that the commission had no such power. Since this decision, the commission has listened to complaints of exorbitant rates, yet has been powerless to correct the evils complained of. The proposed amendment will give them power to change existing rates where they are unfair, and the commercial interests of the country are almost unanimous in favoring this amendment to existing laws. Fruit-growers everywhere will be interested in this matter, especially where shipments are made by car loads. The interstate commerce commission should have this power, and when the power is conferred upon it, then it should investigate some of the abuses to which fruit shippers have to submit at the present time.

At one of the horticultural meetings recently one member asked another if he read the Western Fruit-Grower. Upon his stating that he did not, the first gentleman said: "Well, you ought to be ashamed of yourself, to be so far behind the times. You pay 50 cents for the Fruit-Grower for a year, and if the January issue is not worth more than a year's subscription price, then I will give you a dollar." Of course the subscription was forthcoming, and the gentleman who recommended the Fruit-Grower will not have to pay the dollar, either, for the new subscriber received this January number as the first of his year's subscription. And isn't this number alone worth 50 cents? If it is, will you not get some subscriptions from your neighbors? You can do it, if an effort is made. Remember that the Fruit-Grower's subscription list is increased through the efforts of its subscribers along this line, and we hope to receive a great many new subscriptions in this way this winter. Will you help increase the members of "The Family" in this way? While the year is young and you are making good resolutions, let this be one of them: That during 1904 you will send the Fruit-Grower a club of five new subscribers. And lest you forget it, do it now.

The Fruit-Grower publishes in this issue the first installment of an article on "Apple Orcharding," by Dr. J. C. Whitten, of the University of Missouri. It will be noted by this article that Dr. Whitten deals with the fundamentals of apple orcharding, but certainly the interest in the planting of orchards warrants an article along this line. Dr. Whitten is planting an orchard of his own along the hills of the Missouri River in Central Missouri, so that the matter is fresh in his mind at this time. Dr. Whitten writes that some of the land has been in cultivation for seventy-five years or more, while part of it has just been cleared of the native timber. Fruit-Grower readers will be interested, we are sure, in knowing just how this orchard is to be planted and how it will be cared for, for it will help others who have the same problems to solve.

There is a great deal of anxiety just at present as to what the beef trust will do with prices. So far the intention of the ring seems to be to force the price of live stock down and the price of the dressed product up. Certain it is that farmers receive less for their animals than they did, but the consumer pays just as much for his meat. It is hard to say just what the outcome will be. But we venture to predict that in the end the meat trust will get the worst of the deal, for it will likely kill the goose which lays the golden egg. We can do without meat, if we have to do so. Many persons use little meat during the summer seasoi, and in a pinch can get along without it in winter.

The effects of the work of the different agricultural schools are becoming manifest in all the states. Recently the Fruit-Grower has heard from many graduates of the various agricultural colleges, who have returned to the farm and are putting into practice what they learned at school. In every community there will be found a few of these young men, and, as Dr. Whitten pointed out in his address before the Missouri Horticultural Society, they exert a wide influence upon the affairs of the neighborhood. Some of these young men will furnish articles for the Fruit-Grower occasionally, and they will be good ones. The letters of these young farmers show them to be up-to-date. They use good stationery, write business letters—and are the best kind of business men. There are lots of good farmers who have never had the advantage of an agricultural education—but who will doubt that they would have been better farmers if they had had these advantages?

By referring to the report of the Ohio State Horticultural Society, it will be noted that the fruit-growers of that state are asked to donate the fruit for the exhibit at St. Louis, as the money appropriated by the state has been devoted to other uses. This is too often the case, for fruit-growers are frequently expected to do all this work for nothing. They should not be asked to do this, except in extraordinary cases. The fruit is all the grower has to sell. He is not like the live stock man, who can exhibit his stock for the advertising it will give him. A grower may show very fine fruit, but the reward will not be his. It will advertise the possibilities of fruit-growing, but the nurseryman who sells the trees and the one who sells the land are the ones who reap the benefit. It is to be hoped that the fruit farmers will be helped by liberal appropriations in every state to make this exhibit. No one is more unselfish than the farmers who grow fruit—but they must not be asked to do more than their share. It is to be hoped that not only Ohio, but other states as well, will help to make the fruit exhibits at St. Louis the best that can possibly be made. And it will take some money to do this.

In the report of the meeting of the Ohio Horticultural Society, published elsewhere in this issue, mention is made of a ruling adopted by this society to the effect that specimens of fruit infested with San Jose scale will not be entitled to premiums at exhibitions of the society. Well, we should think not. The wonder is that such a ruling should be found necessary, for no one ought to think of sending any but perfect fruit to exhibitions of this kind. There will be found all kinds of fruit entered at these exhibitions, however, so that some such rules are necessary. If worm holes, rotten specks, scabby specimens, etc., debar fruit from premiums, certainly San Jose scale should do so.

At a number of the horticultural meetings recently it has been noted that the members, for the most part, are old men. This is said to be the case in Iowa, especially. This should not be. Horticulture is conducive to long life, but our fruit-growers will not live always, and their places must be filled by younger men. The Missouri meeting, at Columbia, last month, was notable for the number of young men in attendance. Some of the best papers were by the younger men, and there was much comment upon the presence of the younger generations. At the Illinois meeting, too, there were many young men in attendance, although not so many as at the Missouri meeting. Horticultural societies must interest young men in their work, else there will be a few members to look after the work in a few years.

The seed catalogues are better this year than ever before, and so are the nursery catalogues. If you had made up your mind to not buy anything new this spring, you had better keep the catalogues out of the house, for if one once examines them, an order is almost sure to follow. And why not? Why not try the new things offered and test them for yourself, on a small scale? Not all of them will be found valuable not by any means. But some of the newer sorts of vegetables and fruits will do well with you, and they are worth getting early. At the late meeting of the Kansas Horticultural Society Mr. B. F. Smith said he believed every member of the society ought to have an acre of ground, in which the newer apples can be tested. This may be unnecessary, for quicker results can be secured by top-working on bearing trees, but we do agree with Mr. Smith when he urges the members to devote a little time, a little ground and a little money to testing the newer small fruits, at least. Then the new vegetables can be tried in the garden, and the pleasure of it will be worth all the extra cost. All our standard varieties were new once. Those who learncd to appreciate their worth early are the ones who have been most fortunate. Shall we not look for better things in all lines than those we now have? Look over the list as printed elsewhere in this issue, and try some of the new things offered in the catalogues this season.

One of the metropolitan papers of Missouri recently printed an article calling attention to the short course in agriculture which has been arranged by the University of Minnesota, for the benefit of farmers of that state who cannot attend the four-year course, and yet who dcsire some of the benefits of the college training. This article commended the plan of the University of Minnesota, and suggested that the Universities of Missouri and Kansas ought to adopt the same plan. As if both of these universities have not had the short course for years. The trouble was that this city daily simply did not know what was going on at the universities of its own state and that of the state adjoining. This leads us to ask, however, if the agricultural schools of all the states cannot profitably advertise in the various farm papers? Of course all the papers are willing to call attention to the regular and short courses, and do publish a great deal of matter concerning them. But the fact remains that none of the agricultural schools are advertised as the larger universities of the country are advertised. If it pays the professional schools to advertise in expensive magazines to increase their attendance—and who can doubt that it does pay? why should not the agricultural schools advertise in the farm papers, which reach the very class which should be interested? We believe this plan can be worked to advantage. And then there would be less ignorance among the various papers as to what the different schools are doing. It pays to advertise anything which is worth pushing in any way.

A Few Personal Words

We feel safe in saying that this issue of the Fruit-Grower is the best number we have ever sent out, and the best paper of any kind ever published in the interest of fruit culture. The special articles are worth more than the price of a year's subscription.

Next month's issue will be another good one. Some of the best articles of the season are yet to come, such as the details of spraying, etc. While the February number may not be quite so large as this issue, it will be a good one nevertheless, and no one can afford to miss it.

We want our subscribers to send us a great many new names for our list, to secure these special numbers. We will reserve 1,000 copies of the January number, for the benefit of subscribers whose names are sent in next month, so that their subscriptions can start with January. The first subscriptions received will get these papers and the late ones will be left. Last year a great many new subscribers wanted their subscriptions to start with January, but we were unable to do this on account of the fact that the January edition was completely exhausted. Order early this year.

More new subscriptions are being added to our list now than at any other time in our history, chiefly through the efforts of our readers in securing new subscriptions. Remember this when you renew, and get up a club to send with your renewal. We feel that we can count on the support of every reader at this time. Shall we have it? But remember, above all things, that if you want the subscriptions to start with January number, they must be sent before our supply of the January Fruit-Grower is exhausted.

Now, just one more word about saving the issues of the Fruit-Grower during the year. We furnish a patent binder to hold the papers and keep them in good shape, sending this binder for 75 cents, postpaid. At the end of the year an index of the twelve numbers will be published, and the book will be ready to bind. If you want bound volumes for 1903 we can still supply a limited number at $2 per volume, postpaid. A bound volume of the Fruit-Grower for a year makes "mighty interesting reading."

Remember these things, then: Our February number, a club of new subscribers, and the patent binder and the bound volume. Will you act upon these suggestions?

Another Chapter of History of the Western Fruit-Grower

Last year, in the anniversary issue of the Fruit-Grower, we told some things about the history of the paper—how it came to be started, how it was put "on its feet," etc. This recital of our history was so kindly received by the members of "The Fruit-Grower Family" that we are tempted to recount some more of our experiences. And in this connection we want to thank our many friends who have written us since the publication of the article a year ago, congratulating us upon the showing made. These letters have been a great help to us.

How much encouragement can be contained in a single letter! When the Fruit-Grower was young, and we needed encouragement, there were those who told us of the failure of other papers devoted to horticulture—this to cheer us up somewhat, we suppose. But there were others who wrote the most friendly letters, with words of encouragement and cheer. The members of the Fruit-Grower force were all employed on a daily paper then, you remember, and all the mail came to the office of the newspaper. When the mail carrier delivered the mail, the letters addressed to the Fruit-Grower were opened eagerly. Perhaps it contained a subscription, and once in a while an order for an advertisement. When this letter had been read by one member of the Fruit-Grower staff, it was passed along to another, who looked it over with much interest. And then it passed to the third and finally to the fourth. What a help those letters were—they were about all the help we had in those days. Some times, when the writer of the letter had been industrious and sent several subscriptions with his own, there was an immediate caucus of the Fruit-Grower fellows to talk the matter over.

"Didn't this seriously interfere with your daily work?" you ask.

Why, of course it did, for we all stopped work, and sometimes became so excited that it was quite awhile before we could settle down to work again. But, after all, there was one thing which prevented our employers from losing very much of our labor—the letters were not very numerous in those early days, so that these interruptions or our work were not of very frequent occurrence.

We recall, as though it were yesterday, the first big block of subscriptions we received—that is, it was a "big block" in those days. It was on New Year's Day, 1898, when the Fruit-Grower was just a year old. A gentleman at Villisca, Iowa sent twenty-four subscriptions at one time, and this broke our record up to that time. Besides this, there were seven other subscriptions in the same mail, so that thirty-one were received in that one day. It seemed to us that the wave of prosperity had reached its height. And yet we were a year old, and that was the greatest number of subscriptions we had ever received in any one day.

Do you wonder, then, that we learned to appreciate the letters received from our small family of subscribers? And do you wonder that we still are glad to hear from those who were on our list, at a time when we could call almost every subscriber by name and give his correct address, from memory? Yes, indeed, it was demonstrated then that "a friend in need is a friend indeed." It is gratifying to know, too, that most of those friends of our early days are still with us. At the various horticultural meetings we meet some of them, and it is a positive pleasure to know them in person.

Sometimes we learn of the death of some of these old friends, and the news comes as a personal bereavement. We were reminded of this the other day, at the meeting of the Kansas State Horticultural Society, when the committee on obituaries read a report of the death of Mr. R. DeGarmo, of Oswego, Kan. Mr. DeGarmo used to be the secretary of the horticultural society of his county, and was one of the first subscribers we received. Not only this, but he sent us a number of other subscriptions. When we finally met him in person it seemed like meeting an old friend—as, indeed, he was an old friend, and a good one. There were many like him, whom we will always remember. In those days, as our early subscribers will remember, the address on the Fruit-Grower wrappers was always written with pen and ink. The list was small, and it could be almost written from memory. And when the papers were received from the press, the whole force—consisting of four members—would come down at night and wrap the entire edition in a short time, and then lay plans for pushing the paper still more aggressively.

Finally, the mail list had grown to such an extent that it was put in type, and the mailing of the edition was more of a task than it had been. Still, four able bodied young fellows could wrap the papers at a good gait, and the mail was soon in the office.

Our readers know the rest, how the paper has grown through the years, how its advertising patronage has increased, and how the list of subscribers has been multiplied many times. At the present time the Fruit-Grower has subscribers in all parts of the world—in India, China, Italy, New Zealand, Australia, etc. Advertisers get orders from these far away countries, too, as they have assured us time and again. And it is safe to say that in every community those farmers who read the Fruit-Grower are among the most progressive in the neighborhood.

Our readers will be interested in knowing something of the requirements of the Fruit-Grower at the present time. Instead of the work being done by the four members of the company at night, there are now about thirty-five persons on the payroll during the busy season. Instead of the paper being printed in a few hours on a single press, which did not belong to us, we now have two large presses, which have been kept busy for several weeks, working almost night and day, printing this edition, there being almost 300,000 impressions. The first issue required about 200 pounds of paper for the entire edition—this month we have used almost ten tons of white paper.

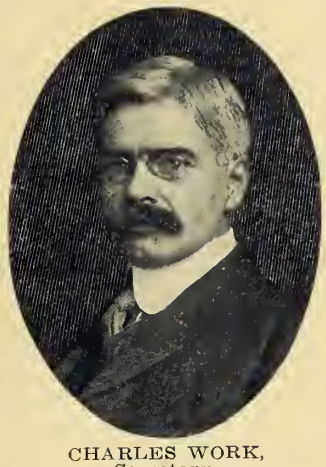
And thus the Fruit-Grower has grown, until today it is recognized as the leading fruit paper in America. This growth has been made possible by the co-operation and help of the members of the Fruit-Grower "Family," and we want to assure them all of our appreciation. We wish we knew everyone personally, but this is impossible. We hope to have their continued support, and to be deserving of it. When possible, we want to meet with them in the various horticultural meetings. If we don't know you, make yourself known. We present herewith the members of the Fruit-Grower company, so that if any of our readers meet them anywhere, at any time, they can make themselves known to us, and we shall be glad to meet them.

The year 1904 opens with bright prospects for the Fruit-Grower, and, we trust, for its readers and advertisers. Certainly no one deserves more prosperity than the "Fruit-Grower Family"—and by "family" we mean all our folks—and we wish them all a most prosperous year.

THE FRUIT-GROWER COMPANY.

JAMES M. IRVINE,
Pres. and Editor

W. G. CAMPBELL, JR.
Vice-Pres. and Gen'l Mgr.



CHARLES WORK,
Secretary

F. L. CAMPBELL,
Treasurer

Special attention is called to the advertisements of farms for sale in this issue. This is the season of year when farmers who contemplate changing their location are looking up new farms, and some splendid opportunities are offered in our department of farms for sale. If interested in any of the sections represented, write to the advertisers for full particulars.

Frank C. Randall, in asking that his paper be changed from Benton Harbor, Mich., to Ocean Springs, Miss., says: "North or South, I don't want to miss a copy of the Fruit-Grower."

A New Apple.

B. F. Stuart, Rushville, Mo., recently left at the Fruit-Grower office a fine yellow apple, which he says is a seedling of Romanite. This apple is large, of a rich golden yellow, and of most excellent quality. The fruit is ripe in late summer or early fall, yet the specimen left with us the middle of December was in good condition. We have not learned the habit of tree, or any of the characteristics of the same, but the fruit certainly seems worth watching, as being a good yellow apple the quality of which will commend it.

Want a Canning Factory.

A letter from J. C. Jamison, Guthrie, Okla., says that there is an excellent opening at that place for a fruit-canning and vinegar making establishment. Mr. Jamison says the growers in that vincinity will furnish plenty of peaches, grapes, etc., which cannot be shipped, and yet which can be well worked up by a canning factory. The acreage in vineyards and peach orchards in that section is continually increasing, and growers will offer substantial aid to some party with money and energy who will put in a plant which will help to utilize the lower grades of fruit. Those interested can address J. C. Jamison, Guthrie, Okla.

"I take three papers devoted to fruit culture, but like the Fruit-Grower the best of all."—Ross Cowen, Barnesville, Ohio.

Notes.

How do you like this issue of the Fruit-Grower? Like it well enough to get us a club of new subscribers from among your neighbors? This is the sort of appreciation we want. Will you help us? Our readers know we have been trying to get 50,000 subscribers—this will mean the addition of 20,000 to our present list. Get up a club today and help us get this list—and then there will be many more issues of the Fruit-Grower even better than this.

"Inclosed please find $2 for bound volume of the Fruit-Grower for 1903. You can always book me for a bound volume at the end of the year. I can't estimate the value of such a book."—John DeLee, Teddy, La. (We can furnish bound volumes of the Fruit-Grower for the past year at $2 per volume. Send your order today.)

W. H. Browning, of Springdale, Ark., in renewing his subscription, says: "No one who grows fruit can afford to be without the Fruit-Grower." Of course not. If your time is out, renew today, and send a club of new subscriptions with your renewal. Remember, four new subscriptions and your own renewal, all for $1.

At the late meeting of the Illinois State Horticultural Society, Mr. E. J. Baxter of Nauvoo exhibited eight plates of apples. He was awarded five blue ribbons and one red ribbon. The judge of the exhibits afterward told Mr. Baxter that he should have had another blue ribbon for a plate of Stark apples, but that the fruit looked too good for Stark, so the premium was awarded to a poorer exhibit. Mr. Baxter usually exhibits good fruit.

Charles C. Shepherd of Passaic, N. J., sends for some sample copies of the Fruit-Grower, which he will use in getting up a club of new subscribers. Mr. Shepherd says: "I have taken quite a number of papers in the fruit-growing line, but the Fruit-Grower certainly takes the cream. I am anxious to help make it even more successful, and will have a club soon." The Fruit-Grower's circulation is growing very rapidly in the East now.

John P. Taylor of Bellevile, Ill., renews his subscription for three years, and adds that the Fruit-Grower has helped him to success in growing fruit. In fact, with no other help than the experience given in the Fruit-Grower he has grown profitable crops of fruit. When asked by his neighbors as to the secret of his success, he tells them that if they will send 50 cents for the Fruit-Grower for a year he will guarantee that they, too, will be greatly helped.

RUSSELL DUDLEY,
Retail Manager

A. G. SAMUEL,
President

WALTER CASH,
Sec'y-Treas.

Special Announcement

We take pleasure in presenting to our readers portraits of the President, Secretary-Treasurer and the Retail Manager of the MISSOURI VALLEY SEED CO., which is said to be the largest Horticultural Supply House in the World. No such assortment of Fruit Growers' supplies can be found any place else. They handle everything that a fruit grower needs, from the smallest market package to the largest power wagon sprayer. They are General Western Distributors for all the best Horticultural Merchandise manufactured, such as Empire King and Orchard Monarch Spray Pumps, "Disparene" the greatest spraying insecticide, and Clark Cut-away Harrows, the greatest of all Orchard Cultivators. It certainly is a great advantage to the Horticulturists in the West to have such a supply depot, with such large stocks with the best of everything right at their hand when needed. Knowing the officers personally, the editor and proprietors of this paper have no hesitancy in recommending them to be honest, reliable and capable men with whom to deal.

The standing of this firm in our community is as high as any other commercial enterprise. Their special advertising on pages 2, 14 and 24 are worthy of careful reading.

Melons at Rocky Ford

Prof. A. T. Erwin Tells How This Industry Has Been Developed There

As the Ozarks are to the "Big Red Apple," so Rooky Ford is to the cantaloupe industry of America. A decade ago a few muskmelon vines were found in the vegetable gardens of that region. In the season of 1902, 3,500 acres were devoted to the cantaloupe at Rocky Ford, and the adjacent section of the Arkansas Valley. This in a word tells the story of the development of the cantaloupe industry in Colorado. Such a mushroom growth is scarcely paralleled in the story of the land office booms of Kansas. yet, despite its rapid development, the cantaloupe industry is on a firm, healthy basis, and has come to stay. In addition to the cantaloupe this region also grows a large acreage of other melon crops, especially of the cucumber and water melon.

Careful methods, and the intensive system of culture demanded in the growing of this crop have also done much to stimulate the development of other lines of intensive farming. As a result the sugar beet industry is also becoming prominent in this section, and the soil is peculiarly adapted to this crop also. According to the United States Department of Agriculture authorities, the Arkansas Valley sugar beets run second highest in percentage of sugar, to any grown in this country. It is no doubt these same qualities of the soil which produce the rich, nutty flavored cantaloupe, which has made this region so famous, are valuable for the beet also.

MELON DAY AT ROCKY FORD, COLORADO.

The development of the Rocky Ford melon industry had a most humble beginning and well illustrates the value of good advertising. About ten years ago Mr. L. Dubs, the present proprietor of the El Capitan Hotel, Rocky Ford, was the local superintendent of the Harvey Eating House. The Harvey people operate a very extensive line of eating houses over the Santa Fe, and other large railroad systems, and the traveling men and others who dined with Mr. Dubs began to call for his melons at other places. In this way a local demand for Rocky Ford melons sprang up, and Mr. Dubs began to send out a few gunny sacks full to the other hotels on his system. In a short time the gunny sack was supplanted by a shipping crate, and from a few gunny sackfuls per season the market has grown to car load lots. In 1902 there were shipped from this point 825 cars bringing in a gross return of over $333,000. Shipments go to every important trade center in the union, including the Southern states.

The gunny sack has been supplanted by the modern shipping crate, of which there are three commercial sizes. The one most commonly used is known as the standard size, and measures 12x12 x24 inches, and holds 45 graded melons. The pony crate measures 11x11x24 inches and holds 45 small melons. The third style is known as the flat crate and measures 8x12x24 inches. The flat crate contains 30 melons. Every melon in this package is visible and it is used only for the fancy grade. Thus we see that the small package idea is gaining favor with the melon grower, as well as with the apple man. The fact of its being near an honest package and in large measure prevents filling with culls, and dishonest packing no doubt explains its gaining popularity to a considerable degree.

The large shipments are all made in refrigerator cars which keep the product cool and enable the grower to ship to distant markets in good condition.

A large part of the product is sold through the shippers' association. This Association is practically a pool of the local growers, and its methods of doing business are quite similar to those of the strawberry associations. The large markets are watched carefully and the crop distributed to prevent gluts. A commission of 12½ per cent is charged for their services.

The development of this industry has had a most appreciable effect upon the valuation of the land in this vicinity. At present good melon land within a radius of two miles of Rocky Ford sells for from $175 to $250 per acre, including perpetual water right. There is an abundance of good land in Colorado which may be had cheap, and the scarce thing as well as the costly thing is the water right. The fact is, as some one has suggested, you may obtain land for a few dollars per acre, but the water right to go with it costs a good big sum. In some cases this phase of the proposition is even worse than the story of the "Forty dollar saddle on a twenty dollar horse." Melon land frequently rents for from $35 to $50 per acre.

The successful cantaloupe grower must be master of two problems. The one is the irrigation of his crop, and the second the combating of the melon louse or aphis. The time of applying the water and the quantity applied are points which require much care and experience. Too much water tends to give a soft, watery melon, which is poor in flavor and does not hold up well in shipment. Also if the water is too bountiful or applied too late it may prolong the growing season and the crop is retarded and does not come on when prices are good.

The combating of the aphis or melon louse in some cases is a serious problem. Some growers spray for it and others have been quite successful by burning with straw. It has been noticed that this insect works in colonies, and usually spreads from a small territory in the patch. The grower is on the watch out for the appearance of these colonies and the minute they appear he piles straw on the plant and burns it up. This is one sure method of combating the aphis.

The largest crops are produced by the small growers. One or two examples may be given to indicate the possibilities of the region along this line. In 1902 Mr. J. J. Guthrie received, from 11 acres, gross returns amounting to $3,044.71. The same year Mr. J. W. Deweese received, from 5 acres, $1,173.94. These represent banner yields of course, and the average return is considerably below this.

The "Montegrau" of Rocky Ford is its melon day. Each year at the height of the melon season the town welcomes every one to her festive board for a melon barbecue. This unique celebration was started in 1878 by the Hon. Geo. W. Swink with about 25 visitors. A grain door of a Santa Fe box car served as a table. In 1892 the table had grown from a car door to one over 500 feet long, and the crowd from 25 to over 12,000. The growers contribute an immense supply of melons for this occasion, and every visitor feeds to his heart's content. With the growth of the melon day there has also originated a horticultural exhibit, and now there is displayed on these occasions a large exhibit of melons, fruits and horticultural products of all kinds. The railroads grant excursion rates from Denver and other points, and melon day has come to be a fall festival for the region, and has done much to advertise and bring its products before the public.

With the development of the melon industry Rocky Ford has also become interested in the melon seed industry, and is now an important seed growing center for this class of products. The soil and climatic conditions which are so favorable for melon growing here, are also well adapted to the growing of a good class of melon seeds and its reputation along this line is second to none.

Mr. D. V. Burrell, a former Iowan, is largely responsible for the rapid development and reputation of this industry, and his harvest represents the larger part of the annual seed crop of the region.

At the time of our visit in August, 1903, Mr. Burrell had a plantation of over 1,200 acres devoted to vine seeds, principally cantaloupe, water melon, cucumber and squash. Mr. Burrell selects and culls rigidly with his seed plants. His orders are to cut no melon for seed that will not grade as A-1 on the market. This rigid selection has tended to produce a melon of uniform size and netted markings. The flesh is of good quality and also of sufficient firmness to stand shipping well. With this ideal in mind and through constant selection, a peculiar type of melon has been originated known as the Rocky Ford, which is peculiarly adapted to this region and grown largely. It is a sport or variation of the old standard variety Netted Gem, and combines productiveness and good quality to a high degree.

A. T. ERWIN,
Iowa Experiment Station.

If you receive two copies of this issue of the Fruit-Grower, one of them is to give to your neighbor who is interested in fruit culture. Don't waste a good paper. Make this extra copy get a new subscriber. And if you can use some more sample copies, write us quick before all are gone.

Who Is Your Nurseryman

??????????????????

No doubt you have a doctor, a lawyer, a grocer, a miller, and in the same sense you should have a Nurseryman, in whom you can, with confidence, rely. We only ask you to investigate, or inspect our Lee's Summit Star Nurseries, its soil, varieties, methods. Stock grown on the best nursery land in the West, varieties adapted to the soil and climate of the middle west, and prices that represent the cost of growing with a legitimate profit added. All of these merit your consideration. Thousands of fruit growers in the middle west depend on us exclusively for their wants in our line; they have our trees and plants in bearing and want more. What we have grown for them is what you need. Presently we will address all of our customers and offer them some desirable new fruits, with our recommendation, and at the same price as old varieties. We will place your name on our mailing list if you say the word. A fine lot of stock and a good assortment for spring delivery.

M. Butterfield & Son
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RATEKINS' CORN BOOK

108 PAGES, 6x9. Tells you all about growing corn, also every staple Farm and Grass crop that's grown. Contains more information for practical farmers that ever before grouped together in same space. Price 50c postpaid; clean stamps accepted. Send for it today. Address J. R. RATEKIN Shenandoah, Ia.

1000 BOYS WANTED
To Grow Corn $200.00 in Cash Prizes

WANTED 1000 BRIGHT, ENERGETIC FARMER BOYS who read this and other good farm papers, to grow "RATEKINS' YELLOW DENT CORN," the coming season. It is a new pure bred superior variety; never before cataloged. To better and more thoroughly introduce this wonderful corn this year, we offer and will pay CASH PRIZES of $200.00, from $50 down for 12 best ears grown in 1904. Full information and conditions of prizes and contest found on page 15, our big twentieth annual catalog of all Farm and Garden Seeds grown. Seeds sold to mail order trade, postpaid, less than others sell same quality at wholesale. This beautiful illustrated catalog mailed FREE postpaid to all who mention this paper. Send to-day.

ADDRESS, RATEKINS' SEED HOUSE, SHENANDOAH, IOWA.

BURRELL'S SEEDS

Carefully selected for critical planters. Not *how cheap* but *how good*. Valuable catalogue and Planters' Guide FREE.

D. V. Burrell, Rocky Ford, Colo.
MENTION THIS PAPER

A Good Gooseberry.

Far too little grown and appreciated are the better class of gooseberries. Our varietios of the older types possess many excoliont qualities and the dofect of being too small is a serious mattor in culinary preparation and the probable source of the tendency to use all gooseberries in a green condition. Few people have a just concoption of this fruit as it is when well grown, ripened and properly used. Size, boauty and quality in fruits aro indispensable factors to become popular with the consumer. Added to theso in the producers' interests are productiveness, nardiness and freedom from disease. A sum total of qualities that makes it pay to grow. Take the Crown Bob, Whitesmith, Industry and other large fruited gooseberries; if care is given them, expert care, and the season is not averse, the result may be pleasing; ten to one partial failure may be counted on. Foreign gooseberries can't be depended on. Just imagine a strong vigorous gooseberry plant with large thick leathery leaves, showing no disease, with sturdy well branched old wood and vigorous new shoots, the branches thickly set with fruit which in early youth surpass in size the larger true American sorts; berries that bend the branches low, that when ripe are a greenisn yellow, transparent enough to show the seeds; beautiful big fellows of a size that makes a mouthful. Many specimens exceeding an inch and one-half in length and a full inch in diameter. Splendid to go sauntering around the garden and just happen around when the berries are fully ripe, gather a pocketful and poke around among the phlox, gladiolus and scores of nice things your garden probably has, and munching gooseberries all the time; those big berries, how fresh, crisp, sparkling juicy and full of richness they are; how good they are; but the skin is tough. Well it simply is a protective tissue like the hide of an animal and not made to digest, so learn to crush the berries, letting the pulp linger long in the mouth, and discard the skin. Pick out the ripest and largest berries and use them on the table as a dessert fruit. You will astonish your friends and give them one of the greatest treats they ever had in fruits. When you have grown the Portage gooseberry that I have attempted to describe, and grown it well, you will wish that its season lasted the year around. Wait until it is ripe and then can lots of them; if you only have gooseberry sauce with your turkey, you will miss nothing.

Now this gooseberry is not exactly a new thing to me; it originated fully fifteen years ago and I have grown it the largest part of this period. I will tell you its history and what some very capable people think of it. Those who have tried and known its virtues.

It was not far from the year 1886, that my friend Mr. A. H. House, carpenter, concluded to have a little farm where he could grow fruits and vegetables and gather about him many of the best things that true homes always have. His wife and children all entered with enthusiasm into the homemaking. Mrs. House had special interest in currants and gooseberries, and a hired man knowing her desires, brought her a small gooseberry plant that he discovered growing near a house drain. it was evidently a seedling, as no other gooseberry plants were growing on the place at the time. The young gooseberry plant grew vigorously and its fruit was in great contrast to the Houghton and Downing, growing alongside. It was the talk of the neighborhood; was exhibited at the meetings of the Portage Co. Horticultural Society and it was considered most promising; finally the name Portage was given it in honor of the society and the county.

A few plants were made from division and chance layers and a few grown from cuttings. A few were sent out to be tested. The Ohio Experiment Station received one. The writer was favored in like manner. With me, under simply good culture, it has always been a success, excepting when in the case of a premature spring, the blossoms coated and killed by frost, my care has uniformly been rewarded by a good crop of its delightful fruit.

The attention of a large nursery firm was called to this fruit and after looking up all the facts regarding its origin and its merits, finally purchased the entire stock of plants from Mr. House and gained control of all the plant sent out for test, by getting all these parties to agree not to sell or give away cuttins or plants for ten years. The firm which thus controlled the Portage have not thus far sent out or introduced it, simply because they have not been able to propagate a sufficiently large stock of plants. Recently they sent a large quantity to Europe to have propagated. I do not know their method of propagation and the reason for their partial failure. It was my work that produced the stock of plants that the originator sold and from time to time small amounts of plants to grow fruit from, and I have experienced little difficulty in making more than 85 per cent of the cuttings grow and form good plants in one year. The method is simple. Soon after the leaves have fallen from the plants make cuttings of liberal size of the new wood with a head of old wood. On well drainod land plant so that but few buds aro abovo tho surfaco and so that tho base of the cutting is not too deep; provent altornate froezing and thawing and remove beforo tho buds start much; keep the oarth moist by cultivation. Intelligently done this mothod insures success in growing plants from cuttings of tho Portage.

In conclusion I will quote the opinion of Prof. Green of the Ohio Experiment Station, who has grown tho Portage many years and whoso opinion is authority on the subject. He says:

"It has uniformly done well with us, appears to be of a European class, but is much less liablo to mildew than any other I have seen. It is of very large size and quite prolific. We are able to grow it without any especial treatment."

This comes from a most competent and conservative judge and fully justifies my high opinion of it. I have seen it and have it growing alongside the most noted varieties and it easily surpasses them all. I hope it will soon become broadly disseminated and believe it will prove generally valuable. I have grown many generations of seedlings from it, none of which proved superior to the parent. To those much interested in gooseberries, their culture, best way of using, etc., should send for a copy of American Garden of date August, 1893 and read the article from Prof. S. A. Beach of the New York Experiment Station.

GEO. J. STREATOR

Garrettsville, Ohio.

Plant New Orchards.

Before an Illinois farmers' institute, Professor Hedrick of Michigan read a paper giving his theory of why the old apple orchards of that state have failed. After calling attention to the increase in numbers of insects and fungous diseases which attack the fruit and tree, he raised the question as to whether the apple orchards which were planted under the old conditions, with the old varieties, can be rejuvenated. He thinks one should not attempt to make them over, except in rare cases. He says: "Many old orchards can be improved, and possibly be made profitable by thorough enrichment, careful cultivation, pruning and spraying—operations that you have all heard discussed in this connection times innumerable. For the farm or the home this plan may be worth the while, but for a commercial orchard, or for the young man, or the up-to-date fruit-grower, I doubt if an old orchard can be made very satisfactory. In most cases the new must take the place of the old. There must be new varieties or new combinations of the old; new methods of planting, of heading and pruning; a greater use of cover crops to keep the soil in good tilth; more vigilant and intelligent care in cultivation to start the roots rightly and treatment from the first to keep out insects and fungi. Our fathers considered orchards an adjunct to the farm. Fruit was always a secondary consideration. An orchard to be profitable now must have first consideration. We must come to realize, too, that apple growing is not all one grand sweet song, and that it requires infinitely more labor and thought now to grow apples than it did a generation ago. But the difficulties are not insurmountable. The orchard demands only the attention commonly given to field crops with the addition of the fight with pests."

Bad grocer confesses his badness by selling bad lamp-chimneys.

MACBETH.

You need to know how to manage your lamps to have comfort with them at small cost. Better read my Index; I send it free.

MACBETH, Pittsburgh.

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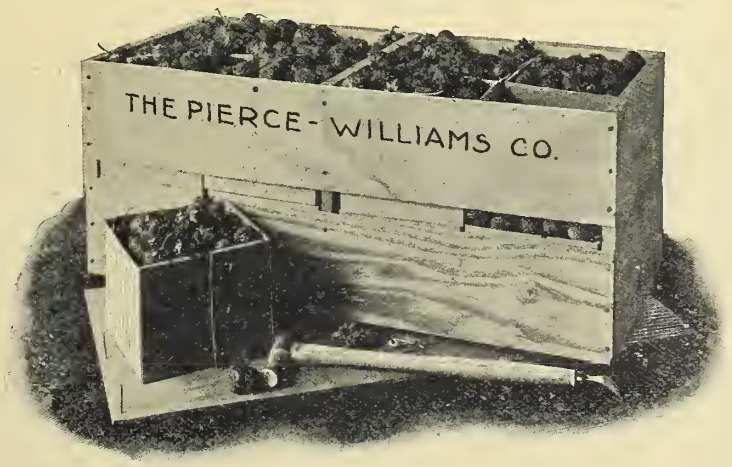

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Mixed Planting of Orchards

Interesting Outline of Methods Followed, With Illustrations :: By Professor F. A. Waugh and Mr. Ralph S. Eaton

The idea of double planting orchards is by no means a new one. It has been frequently preached and occasionally practiced ever since I can remember. A great many objections have been offered to it, many of them merely theoretical. It has failed in practice a number of times, largely because, as I think, the system has not been properly carried out.

Double planting is more popular in the East than in the West. There are two reasons for this. (1) Land is generally more expensive in the East. This makes it desirable to get a prompt return from the investment. (2) Apple trees are slow about coming into bearing in the East. Where land is worth $100 to $200 an acre, as some of our American fruit lands are now, it is a waste of capital to keep a field less than half occupied for ten or fifteen years while the trees are getting their growth.

APPLE ORCHARD, WITH PEACH FILLERS. SOY BEANS USED AS A COVER CROP. (Massachusetts Agricultural College.)

There are various systems of double planting, applied almost exclusively to apple orchards. They may be reduced to three general system as follows:

1. **The Single Variety System.** In this system the trees are all apple trees and all of one variety. They are simply set into the orchard at half the distance which the permanent trees are to occupy. If it is desired, for instance, to have the permanent trees 40 feet apart, the orchard is originally planted with trees 20 feet apart, and each alternate row is cut out as soon as they begin to crowd.

2. **The Two Variety System.** In this system the intermediate rows, or "fillers," are of some variety different from the permanent trees. It is customary to make these fillers of some dwarf growing, early bearing variety in order to get returns from them sooner.

3. **The Two Species System.** In this system the mixture is made up of two separate species of trees, as for instance, apple and peach, or apple and pear.

I know of one orchard, which I shall speak of later in this article, which combines three species in a mixture, but such an arrangement is certainly exceptional.

The one variety system first mentioned above seems to me to be suitable to those places where apples are the main crop and where the varieties grown are fairly dwarf and early bearing sorts. If one's interest were altogether in getting apples in the Ozark region for instance, and the varieties grown were Missouri Pippin or Winesap, there would be no use in mixing the orchard with any other varieties. It would be simpler to plant the trees at half the permanent distance and then remove the extras when the time seemed ripe.

In most eastern orchards however, where somewhat more diversified systems of apple growing are commonly followed, the two varieties system seems to be better. In this case the fillers are nearly always Wagener, Wealthy, McIntosh or Duchess of Oldenburg. There are some other kinds which will answer, but the two first named are by all means best. This system has been fairly well tested in many different places and has given excellent results.

The two species system of mixing trees receives the most criticism. It is argued against it that two different kinds of trees, say apple and peach, require different systems of cultivation and fertilization, and that when they are treated alike it must be to the detriment of one species. This objection does not hold good in practice, because very few men have yet brought their systems of orchard management down to such a fine point that they are able acurately to use one special system of cultivation for each separate species of fruit. They commonly think they are doing well if they give any cultivation and fertilization at all. I have seen a number of orchards mixed in this way. The best orchard on the grounds of the Massachusetts Agricultural College is of apple and peach planted in this fashion. They are now about eight years old. The peach trees have borne several crops and the apples are just coming into bearing. Thus far the peaches have practically paid the expense of operation, which would be a plain argument to the frult-grow-

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Elberta, 24,000; Carman, 1,500; Belle of Ga., 3,000; Hiley, 500; Sneed, 650; Alexander, 450; Tillotson, 500; Greensboro, 200; Chinese Cling, 300.

6 to 12 in., $1.50 per 100; $12.50 per 1,000

Elberta, 40,000; Carman, 8,350; Belle of Ga., 10,300; Hiley, 2,250; Greensboro, 850; Sneed, 250; Chinese Cling, 400; Waddell, 1,000; Alexander, 150.

12 to 18 in., $2.00 per 100; $16.50 per 1,000

140,000 Elberta; 10,000 Carman; 7,550 Belle of Ga.; 1,150 Hiley; 550 Sneed; 750 Alexander; 250 Chinese Cling.

18 to 24 in., $2.50 per 100; $19.00 per 1,000

150,000 Elberta; 5.000 Carman; 1,100 Sneed; 550 Hiley; 200 Greensboro.

2 to 3 ft., $3.00 per 100; $25.00 per 1,000

100,000 Elberta; 3,000 Carman; 200 Hiley; 150 Sneed.

Apple

2 yr., ¾ and up, 5 to 7 ft., $6.00 per 100; $50.00 per 1,000

750 Ben Davis; 540 Jonathan; 240 Winesap; 330 Mo. Pippin; 405 M. B. Twig; 30 Early Harvest; 30 Baldwin; 105 Kinnard's Choice; 30 Gano; 30 Hargrove.

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640 Ben Davis; 100 Mo. Pippin; 60 M. B. Twig; 80 York Imperial; 40 Baldwin; 40 Gano.

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1,500 Ben Davis; 125 Mo. Pippin; 100 Shannon Pippin; 200 Kinnard's Choice; 75 Wallace Howard; 50 Jonathan.

½, 9-16, 3½ to 5 ft., $3.25 per 100; $30.00 per 1,000

3,750 Ben Davis; 1,425 Jonathan; 850 Winesap; 100 Kinnard's Choice; 75 M. B. Twig.

3 to 4 ft., $2.75 per 100; $25.00 per 1,000

1,450 Ben Davis; 425 Jonathan; 425 Winesap; 750 Earlv Harvest; 100 Limbertwig.

2 to 3 ft., $2.50 per 100; $20 per 1,000

825 Ben Davis; 175 Winesap.

1 to 2 ft., $2 per 100; $15 per 1,000

750 Ben Davis.

Pear

Bartlett—250, 3 to 4 ft., 4c each; 500, 2 to 3 ft., 3c each; 500, 1 to 2 ft., 2c each.

Kieffer—500, 1 to 2 ft., 2c each.

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Early Richmond—600, 1 to 2 ft., 5c each.

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GRAVENSTEIN APPLES IN DOUBLE-PLANTED ORCHARD OF MR. RALPH S. EATON. NOVA SCOTIA.

er who finds it difficult to sustain the expense of the orchard for eight or ten years until it begins to yield him a revenue. I have also seen plum mixed with apple successully; and one of the most interesting blocks which I know of has been Mr. Hale's peach and plum mixture in his Connecticut orchards.

I cannot close this hasty sketch of an important subject without referring to one extreme and interesting example of mixed planting which has been undertaken on a large scale. This is the orchard of Mr. Ralph S. Eaton of Nova Scotia. This orchard consists of something over twenty acres of bearing trees and a large amount of younger planting. The plan followed is to plant the permanent apple trees two rods (33 feet) apart. Half way between these trees in each direction runs a row of temporary apple trees. The rows are thus 16½ feet apart. Half way between these rows again in one direction are planted plums, peaches or sour cherries. Thus the original make-up of the orchard leaves the trees standing 8 feet 3 inches by 16 feet 6 inches. This looks like rather intensive farming. After something like eight or ten years' experience it may fairly be said that it has been a success up to the present writing. Its future management will necessarily be more difficult than what has gone before. It will require much courage to cut out the bearing and profitable trees in order to make space for the future. Doubtless many men would not have the nerve to do this, but probably Mr. Eaton will.

The photographs show how the trees look in the double planted orchard of Mr. Eaton and of the Massachusetts Agricultural College.

Amherst, Mass. F. A. WAUGH.

Upon receipt of the foregoing from Prof. Waught the Fruit-Grower wrote Mr. Eaton and asked for a more detailed statement of his plan of orchard treatment. It might be well to state here that President Mills of the Ontario Agricultural College, Prof. James Robertson and F. W. Hodson of the Agricultural Department, Ottawa, have said there is no finer orchard in the whole of Canada than is Mr. Eaton's. But, as Prof. Waugh and Mr. Eaton state, the test of this orchard is yet to come. But the statement of conditions at present and how they were obtained is most interesting. Mr. Eaton writes:

You ask me for a description of the way I have planted a young orchard of some eighteen thousand trees. This request is made because of the unusually intensive system I have adopted in it. There is an important reason that leads me to hesitate in submitting this just now—it has not had time to prove itself. One can hardly speak of any untried business enterprise as being a success until it has actually given, in spite of unusual or abnormal obstructive conditions, cash returns that show beyond question the value of the scheme. I have received unusually large returns from this young orchard but in the season of '02, when something real handsome was promised the first of June, the coldest and most rainy blossoming period on record in Nova Scotia made the majority of our orchards look, in July, as though a fire had run through them. The blossoms, newly formed apples and leaves left the trees. My young orchard suffered particularly and the best care I could give it during the rest of the season did not make it recuperate sufficiently to blossom generally this year. However, I will submit the system which I evolved and adopted and which, as I have watched it develop from year to year, I have had increasing confidence in, though almost alone among the fruit men of the continent in my indorsement of it. Quite a few of the younger fruit growers of this province are taking it up in a more or less modified form. The vast majority are content to wait fifteen to twenty years for returns from forty trees to the acre and middle aged men feel that it is useless to plant orchards with the expectation of getting returns from them in their life time.

My first planting, in the orchard referred to, were made thirteen years ago at the orthodox distance of 33 feet apart and consisted of 800 apple trees. A few years after an area making in all about 50 acres was planted in the same way.

My first inter-planting consisted of an extra row of trees in each of two spaces out of three, the trees in these spaces coming alternate with the first. The extra rows were mostly peach or apple. A year or two later a more intensive system was decided on and sweet cherries, such as Gov. Wood, Black Tartarian, Windsor and Biggareau, were planted in a portion of the orchard half way between the original apple trees.

Again between these cherries and the apple trees were planted the slower growing acid cherries, the English Morello and Montmorency. Where sweet cherries were not planted, the early bearing varieties of apple, such as Ben Davis, Wagener or Wealthy were used as fillers. In portions of the orchard these varieties of apple were planted in the two spaces out of three so as to bring the apple trees 16½ feet apart. Plum, dwarf pear, apricot and quince were planted between these again, and in the third spaces, so that throughout the whole orchard the trees stand 8¼ feet apart in the rows with the rows 16½ feet apart. This gives 320 trees per acre. When desired the trees in every third space can be first taken out, to give a more open and free driveway.

The larger portion of these extra fillers were planted seven years ago and I was sufficiently satisfied last spring with the system to use it in the planting of 5,000 more in extending the orchard.

Fillers Should be Headed Down Low.

The trees planted as fillers are all branched low, not more than two feet from the ground. A superficial area of treetop has thus been obtained at five years on Ben Davis, Wagener and Wealthy apple trees, enabling them to produce, in many cases, a barrel of fruit and an average of from one to two bushels. The fillers of plum and cherry have responded as satisfactorily.

Any fillers planted 8¼ feet from permanent apple trees are trees of low spreading habits naturally. For instance, the Burbank and Red June plum have been used much in this position but never the Abundance or Wickson. The intention is to start and keep all fillers comparatively low headed. It has been fully demonstrated in English and French gardens where fruit trees are trained espalier, pyramidal and other set shapes, that they will not rebel against severe heading in, but rather they may be made to produce annual crops of the most perfect specimens of fruit.

After these fillers in my orchard have attained a desirable size, it is expected that with June heading in and thinning out of wood, and July thinning of all fruit, which is imperfect or superfluous, the working ability of the tree may be utilized entirely in the production of No. 1 fruit only, and the superficial area of the trees kept about in status quo for a number of years. Though in the past I have used largely the plum and acid cherries for fillers, I shall in the next planting use 40 trees to the acre for permanent stock and fill in with 280 trees to the acre of Wagener deeming it now rather better for Nova Scotia as a filler than Wealthy or Ben Davis.

Cultivation.

The system of low heading involves an adjustment of implements for cultivation. An ordinary 6-foot disk harrow was widened some years ago to 8 feet so that two widths would cover any space between the rows and allowed for the stirring of the soil close to the butts of the trees with the horses off at some distance. As the earth can be thrown more easily with the plow toward the trees than away from them, and with much less risk of injury to the trees, the back furrow is invariably made in line with the trees. To secure level culture the two sections of the disk harrow are spread apart to 12 feet, leaving nearly a 4-foot vacancy in the middle. One section of harrow thus reaches on opposite side of dead furrow from the other, and both sections then draw the earth toward the dead furrow, so that after cultivating every ten days from the plowing till about July 15, the surface is nearly level. A grape hoe is used immediately after plowing to cover any clover or grass in line with, or around, the trees which was not buried by the plow, and by reversing the moldboard of the hoe later in the season it will take away the ridge of earth in line with the trees left after the disk harrow has leveled the earth in the spaces.

Two bushels of plums have been taken from many of the individual Bur-

GRAVENSTEIN APPLES IN BLOOM, WITH ENGLISH MORELLO CHERRY TREES. LOW BRANCHED, GROWING EIGHT FEET FROM THEM. ORCHARD OF MR. RALPH S. EATON, NOVA SCOTIA.

bank pium trees the fifth year from setting. The Wagener and Wealthy trees planted seven years ago have given two and three fairly good crops, these varieties not being affected so much by the blight of a year ago, and many of the Ben Davis gave from a peck to two bushels the fifth year from planting.

Strawberries in Texas

Prof. E. C. Green, assistant horticulturist of the Texas Experiment Station, makes an interesting report of some experiments with strawberries, and also some notes concerning the behavior of a number of sorts. One thing we cannot understand about the report, however, is his statement that the Excelsior strawberry is sour—"almost as bad as a dewberry." What kind of dewberries do they raise in Texas? Our Missouri dewberries are very sweet, while, as stated, the Excelsior is strawberry is very sour. Prof. Green's report follows:

Owing to the great interest aroused by the strawberry experiments this season at the Troupe Sub-station of tho A. and M. College, the following brief report has been prepared and given to the press in the hope that it may be of practical benefit to the farmers making plantings this fall.

About fifty varieties were tested and of these many failed utterly under our East Texas conditions, others demonstrated their merits from the standpoint of being desirable parents for breeding purposes, while a few showed themselves especially valuable from the standpoint of the commercial grower. It is of this last class that this brief article treats.

From a practical standpoint only a half dozen varieties may ve considered by the grower; namely, Excelsior, Darling, Lady Thompson, Aroma, Haverland and Barton's Eclipse.

Season of Ripening.

On account of the frost last spring all the earliest blossoms were destroyed, hence the notes on the first ripe fruit give nearly the same dates for the ripening of several of the early varieties. From the standpoint of the first picking of consequence, however, the notes are a sufficent guide.

The first profitable picking was on April 12, when Excelsior yielded 375 quarts per acre, and two new and promising varieties, Darling and McKinley, ripened about 250 quarts each. The bulk of the Excelsior crop came between April 18 and 26, and the total yield for the season was 7750 quarts per acre. Darling produced practically the same crop during the same period.

Lady Thompson came in for a good picking on April 18 and cropped well until May 8, having yielded at the rate of 9000 quarts. The best one day record for Excelsior was on April 18, when it picked 1250 quarts. This was equalled by Lady Thompson four days later.

Aroma made the first profitable picking on the 1st of May and yielded at the rate of over 330 quarts per day for the following twenty-five days. First and last Aroma produced 10,500 quarts of berries.

Haverland came in strong May 4, and made heavy pickings until the 27th, in all yielding 8625 quarts per acre.

Barton's Eclipse came into profitable bearing April 27, and continued giving heavy pickings for a full month. This variety made 12,457 quarts, the highest season record of any of the 50 varieties tested.

Shipping Qualities.

On May 18 two crates were picked in the morning for the purpose of testing the shipping qualities of the different varieties. The berries were not gathered with special reference to a long journey, but were gathered as usual for the local trade; that is, sufficiently ripe for immediate table use. In each crate were placed boxes of each of twelve varieties to be tested. One crate was shipped at 9:30 a. m. on the north-bound train for St. Louis, on the other on the 11 p. m. train that night. The first crate reached its destination, a short distance from St. Louis, on May 19 at 6:30 p. m. The inspector at that end reported Aroma in excellent condition with 5 per cent shrinkage. Haverland in good condition with 5 per cent shrinkage, and Barton's Eclipse in fair condition with 20 per cent shrinkage.

The second crate reached its destination at 7:15 a. m., May 20 and was reported on as follows: Aroma fair condition, but 25 per cent shrinkage; Haverland in good condition, and no shrinkage, and Barton's Eclipse in perfect condition and no shrinkage.

The earlier varietles being of known virtue as shippers were not tested.

From the above one may feel reasonably assured that if the berries are picked with due regard for the long distance shipping they will carry for a two days' express trip without serious shrinkage and loss of market quality.

Hardiness of Plants.

In regard to resistance to drouth and diseases, all of the half dozen varieties under discussion are fairly satisfactory. However, it must be said that the earlier sorts are more safe for full crop than the later ones, inasmuch as a dry May, which is a frequent occurrence, might materially lessen their production. This season, a timely rain occurred, and it is due to this that Aroma, Haverland and Barton's Eclipse made their heavy yields.

Fertilizers.

The variety garden had no fertilizer except a light dressing of dissolved ground bone in the early part of April. The soil is a heavy sandy clay loam, made largely of the wash of a neighboring hill.

On most soils a top dressing of 200 pounds of cotton seed meal, 200 pounds dissolved ground bone and 200 pounds muriate of potash applied in the fall will prove a profitable outlay. However, a top dressing of strawy barn lot manure and about 100 bushels of fresh wood ashes applied just before the most severe winter weather, is preferable to the commercial fertilizers.

Size, Quality, etc., of Fruit.

Excelsior—Medium size, deep red, of high flavor, but sour—almost as bad as a dewberry, firm, good shipper.

Darling—Medium to large in size, red to light red, rich and melting, one of the best early table and local market sorts, not sufficiently tested for recommendation as a market berry, though it promises well.

Lady Thompson—Medium to large size, red to light red, lacks color, poor flavor to fair when fully ripe; a fine market berry, carrying well and selling readily on acount of its large size.

Aroma—Medium size, dark crimson color, juicy and of good quality. Prolific and hardy, a good market berry, shipping and selling well. The Aroma requires well fertiiized ground to do its best, as it fruits heavily, and unless the soil is rich the berries are likely to be small.

Haverland, Pistilate — Medium to large, light red color, quality good, a good seller, and first-class shipper.

Barton's Eclipse. Pistilate—Size large, color light crimson, quality poor. Very heavy cropper, good shipper and sells very well on account of size.

For the Home Table.

While ordering plants get a few of those whose delicious flavor and rich quality make them suitable for the farmer's own table.

The Wm. Belt is a berry of this class. The plant, although a vigorous grower, is subject to evil effects from summer drouths, hence, especial care must be taken in choice of location for planting and in its culture. Finally, though a handsome, large fruit, it yields very shyly, still, the beauty of its deep, rich, scarlet color and the exquisite flavor and delicate perfume of its delicious juices abundantly reward one for the special pains he has experienced in producing it.

The Purchase of Louisiana.

Readers of "How We Purchased Louisiana," in the January St. Nicholas, will be interested in a comparison made in a recent issue of a New York paper showing the enormous increase in value and importance of Louisiana since it was bought from France. These statistics show that, though the purchase price may have seemed high at the time, it was insignificant compared with the value of even the agricultural, grazing, and mining products contributed by that section. To quote from a portion of the article:

Out of the territory thus added to the area of the United States twelve state and two territories have been formed. The population has increased from perhaps 50,000 to 15,000,000. The production of wheat in 1900 was 264,000,000 bushels, valued at ten times the entire purchase price. The value of the wheat, corn, cotton, oats, rye, barley, hay, and potatoes produced in 1900 was over $750,000,000. The farm animals were worth $825,000,000. More than one-half the wheat and corn crops of the entire country come from the territory in question. The single State of Colorado produced more gold in 1902 than the whole United States had yielded in all of its history down to 1840. That same single state has produced in all more than $800,000,000 in gold, silver, copper, and lead, while another state—Montana—has exceeded $1,000,000,000 in the four metals named. The wool product of Louisiana in 1902 would more than pay the original cost of the entire purchase, while the corn of Iowa would have paid it six times over. The railway system of the territory embraces over 62,000 miles.

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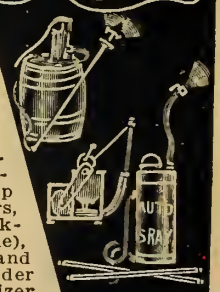

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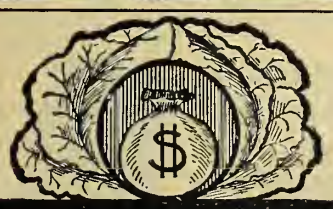

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Experience with Dust Spraying.

As some facts in regard to this season's spraying operations may bo of interest I will state them briefly. We experimonted this year to some extent with the dust process. As far as covering a tree with dust is concerned the machine we have will do the business, but the results as far as fungus diseases are concerned are not in it with the liquid spray. We could see very little difference in the per cent of wormy fruit, but the scabby apples were on the dust-sprayed trees. We used two blocks of Ben Davis on same ground, the middle row, spraying one side with liquid and the other with dust. At picking time the side sprayed with liquid had a fair quantity of apples quite smooth, having held the scab well in check. The other side with dust being very scabby and crooked. We also noticed on the liquid sprayed trees that the leaves were in much better condition, unsprayed and dust sprayed trees losing nearly all their foliage. We used the dust formula as given by Mr. Maxwell. We are not throwing away our liquid spray pump. We also sprayed cherries thoroughly with the dust. Our cherry trees were nearly defoliated before the cherries matured. In fact, some varieties did not mature their crop. The spraying seemed to have no effect whatever. We shall use the liquid spray on the cherries next season.

Such has been our experience with the dust process of spraying. If one is spraying only for worms the dust may be as good as the liquid, but we fail to see where the copper sulphate does any good when used in the dust process.

We would like to ask one question on another matter. Would a thorough spraying with strong soap suds be beneficial to apple trees. If so, the best time to apply it. A reply to above questions through the Fruit-Grower will be appreciated.

Hamburg, Iowa. A. A. SIMMONS.

In regard to Mr. Simmons' experience, we will say that it is in keeping with that of a great many other growers who used the dust process the past season. It is accounted for, we believe, by the fact that the copper sulphate loses its toxic properties by the heat of the slacking lime. At least this is what Dr. Bird, chemist at the Missouri Experiment Station, says. According to Dr. Bird, the making of the dust according to the formula which has been recommended neutralizes the effect of the copper, and the mixture is no more effective as a fungicide than air-slacked lime would be. Before time to begin the work of spraying next spring the Fruit-Grower will have an article by Dr. Bird on this subject, explaining in detail how he would make the dust, which should be effective as a fungicide, for, chemically, it is the same as the liquid Bordeaux mixture. This article will appear in a near issue of the Fruit-Grower and will interest fruit-growers everywhere, we are sure.—Editor.

Strawberries in Hills.

While vlsiting in the west the past fall I saw the first strawberries I ever saw cultivated in hills successfully. In Eastern Washington, where the patches are not irrigated, the plants are set in shallow ditches the ditches are about two and a half feet apart with plants about twenty inches apart. The ground being highest in the space between the rows runs the water in winter and spring down around the plants. It is very dry in summer and few runners are made by plants that have fruited so it is easy to keep off runners and not much cultivation is required. The plants looked very brown and dead but I was assured by old growers that when the fall rains came these plants would start out fresh and green. Some of these patches have fruited for the fifth time on the same old plants and the last crop of fruit was as large and plentiful as any they have ever produced.

I have tried growing strawberries in hills here in Central Iowa but with very poor success and the second crop has always been a failure. Early spring planting and thin, narrow rows have given the most fancy berries. Fall set plants have produced some good fruit—eighteen to twenty berries to the box—but only a few plants can be handled in this way.

Conrad, Iowa. H. ROCKHILL.

Sun Scald on Fruit Through Ice.

It is the season of the year when storms of sleet may prevail over large sections of the country, and the damage resulting to fruit of various kinds makes it wise to prevent damage so far as possible.

Various theories prevail as to the cause of the injury to fruit, some claiming that the buds are frozen under the coating of ice, others that they are smothered, etc., but in nothing that I have ever seen printed was there a hint of what seems to me to have been the true state of the case and that is that it was a sun scald through the ico. It happens in this wiso: Tho trees are heavily coated with ico, often to the breaking point. After the sleet storm is past it usually clears and freozes quite hard. The next morning if it be clear the heat of the sun may partially melt the ice, but not enough to make it drop from tho trees. If an examination thon be made it will be found that the inner portion of the coating of ice next the bark on the side toward the sun has been melted away and a cavity left with a sun glass lens formed by tho ice with so high a power and so short a focus that the bark of the limb or twig is burned with a brown streak and so potont is the effect, that often it seems like blight when leafing time comes.

I have seen it on blackberries where the cane was so burned for from 12 to 20 inches in a straight line, and the result was a dead cane. It affects all fruits alike where the conditions are favorable for the forming of such a scientific sun glass on the trees. Of course all sleet storms would not produce this result, nor are the conditions after the storm always right for the effect, but the matter will bear investigation and if there is any remedy it can be applied.

Adrian, Mo. A. BREENE.

MOLE IS A NUISANCE.

We confess a weakness for Major Frank Holsinger's writings, though occasionally we get a "jar." A case in point occurred in the November issue in the form of the major's article on the Mole. We are literally one of those doubting Thomases, not as to the diet of the mole, but as to its indispensability. The Major is undoubtedly a naturalist before he is a berry grower and if he is now on "easy" street it is not by reason of moles, but in spite of them. For one we wish the moleskin cape fad would grow, in fact, we wish our wife had a full sized cloak made of the mole skins we could have furnished this season, could we but have caught the little rascals.

Honestly, now, Major, when you walk through that fine newly set strawberry field and see a few rods of promising plants hanging high and dry and all done by one little mole in search of a "grub" worm do you say "bully boy! You're a peach?"

When you see those tender plantlets,
That you've watched with loving care,
Drooping on the little hillocks,
Don't it almost make you swear?

We imagine under these circumstances our own poet laureate (Whitcomb Riley) would give tongue to his feelings about as follows:

Oh, it's then's the time a feller gets
A hump upon his back,
And he hunts, with bulging eyes, a chance,
To give that mole a whack."

Now we protest we're not a poet but a fruit grower, and a naturalist to the extent of loving birds and animals, and are ready to share what fruit we raise with these creatures, but when they destroy the trees and vines that grow the fruit we make a vigorous kick and vote them a nuisance.

TOM TRUEMAN.

Marshall, Ind.

Mr. A. J. Masters, Mystic, Ia., writes as follows: "The article in defense of the mole, by Major Holsinger, in November issue of the Fruit-Grower, seems to be somewhat on the gush order. I class the mole with the robber birds which destroy more of our fruit than they save, and treat them accordingly. The Major does not mention the earthworms, our friends, which the moles destroy, and which constitute their chief food. I have seen moles heave out and kill a hundred yards of young corn, running straight down the row, and the havoc they create in an onion bed or strawberry patch is not pleasant to contemplate. The washouts in fields can generally be traced to the mole runs. This pest cannot be poisoned successfully, but a good trap is just the thing, and you can rest assured I always have some ready for these smooth little imps. I simply lay all sentiment aside in dealing with these matters, and go after birds or beast, reptile or insect, which destroys my fruit and vegetables to an extent greater than they afford protection."

World's Corn Husking Record Made at Shenandoah, Iowa.

All corn husking record were beaten and a new mark established near Shenandoah, Ia., on Dec. 8. Charles Rennack, a young man of 23, husked 201 bushels and 16 lbs in 10 hours. The corn was weighed by three prominent farmers who were the judges and there is no doubt as to the accuracy. The corn was the variety known as Shenandoah Yellow, introduced by Henry Field, the Shenandoah ear seed corn man, and made about 75 bushels to the acre.

It is said that seevral hundred dollars had been wagered on the result of the contest

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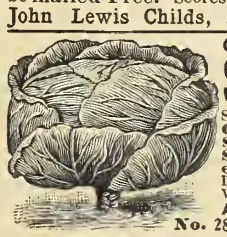

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San Jose Scale: How to Fight It

By Professor Charles A. Keffer, of the University of Tennessee

No other insect of recent introduction has caused such wldespread apprehension among fruit-growers as the San Jose Scale. At first lt seemed as lf orcharding as a commercial pursuit were doomed, but careful experiment has resulted ln the discovery of remedies whlch insure the lndustrlous orchardist comparative safety against this dreaded pest.

Nothing has yet been discovered that will prevent the ravages of the scale, and as it is a sucking insect there is no method of poisonlng its food. In all cases the remedy must kill by contact with tne lnsect itself, and as lt ls very small and oftentimes secretes itself in the crevlces of bark and in the tiny angles between bud and branch it would be strange lndeed if repeated applicatlons of any remedy were not necessary to clear entirely a badly infested tree.

Description of San Jose Scale.

The female insect is a small orange-yellow creature, almost round, which lives nearly its entire life under a scale which it secretes by the time lt is two or three days old. The female brings forth its young alive and produces four or five broods a year, the first brood

Fig. 1—First Indication of San Jose Scale.

being born when the female is a little more than a month old. The productive power is marvelous, accounting for the rapld spread of the insect on a tree when once lt is infected. The scale of the mature female is round, about one-sixteenth of an inch in diameter, with a slightly raised center, in color from gray to almost black.

The males cale is smaller and slightly elongated. When about a month old the male emerges from its scale as a tiny winged insect.

The San Jose scale as it first appears upon a tree will usually escape the notice of the fruit grower, the sharpest scrutiny often belng necessary to discover it. At first a very few of the scales may be seen, the insects having been carried from other trees on the feet of blrds, on flying insects, by wind, etc. They resemble the color of tree bark so closely and they are so small that they usually escape observation until they have formed a colony. In many cases the entire bark is covered with overlapping scales before their presence is suspected.

As a rule the scale first establishes itself in the angles of buds with limbs, in the leaf scars, especially in the marks of a new annual growth, and in the crevices of bark. When any conslderable number of the insects have developed they are more apt to be seen, as then single specimens frequently attach themselves on the clean bark of one-year-old twigs and on leaves and fruit. Attention will often be drawn first by a slight discoloration of the bark in a tiny circle surrounding the scale itself. This is especially observable on the pear, but ls noticeable also on the peach. In most cases where single specimens are seen on young branches a considerable colony of the insects will have formed at some one place on the tree, usually the place of first infection. The scale when lt first appears is most easily seen on pear and apple and most difficult to find on plum and cherry. When badly infested the branches of the tree are completely covered with scale.

Fig. 2—Twig Completely Covered With Scale.

The injury is done by the insect sucking the elaborated sap from the inner bark and the growing layer, thus practlcally starving the tree to death. The injury is gradual. It very seldom happens that a tree is killed wlthin two years of the first infection, and trees have lived several years with scales upon them. But the vitality of the tree ls greatly lessened by the scales even when death ls deferred for some time. In the pear and to a less degree ln other frults the green lnner bark of the tree where badly lnfested turns a dull red color for some tlme before death. The trunk and main limbs of a tree may be completely covered so as to hide the bark entirely and yet may push forth vigorous new growth in the spring. The very gradual weakening of the tree under the attack of the scale is one of the principal reasons why lts presence ls often not suspected until the insect is thoroughly established.

Remedies.

Kerosene and crude petroleum, lime-sulphur-salt solution, and llme-sulphur-caustic-soda solution have been used at this Station as remedles for the San Jose scale. All of these remedies with others, have been known for some tlme and have been widely tested under varying conditlons at almost all the experiment statlons ln the country as well as in many commercial orchards. Throughout the Pacific coast region the lime-sulphur-salt solutlon or some modlfication of it has come to be recognized as the standard remedy. In New Jersey and in Pennsylvania crude petroleum of 40 degrees Baume test is much favored. In Georgia an emulsion of kerosene is preferred to the crude petroleum after a thorough trlal of the latter. In Illinols, Delaware and Maryland extensive trials of fumigation wlth hydrocyanic acid gas have been made, but the method is considered too expensive and too difficult of application. The New York experimenters find lime-sulphur-salt a practical and satisfactory remedy.

The difficulty of applying remedles is a principal cause of failure or of only partial success. The usual method of

Fig. 3—Pear Tree Sprayed Feb. 24. Photographed June 9.

application, and the only satisfactory one, ls by means of a spray pump. The manufacture of these pumps has reached a high degree of perfection, but unless they are used with skill, judgment and thoroughness the results will be disappointing. The inexperienced laborer will find considerable to learn the spraying nozzle quickly and evenly, reaching every part of the tree without deluging any part. Even the experienced workman will seldom succeed in reaching absolutely every part of the tree at a single application. The underside of the limbs, the angle of buds, and the tips of branches are especially apt to be overlooked, and since death results only from contact of the poison with the insect it is seen that thoroughness is the great essential of scale spraying. but unless they are used wlth skill, judgment and thoroughness the results will be disappointing. The inexperienced laborer will find considerable to learn before he can manipulate the spraying nozzle quickly and evenly, reaching every part of the tree without deluging any part. Even the experienced workman will seldom succeed in reaching absolutely every part of the tree at a single applicatlon. The underside of the limbs, the angle of buds, and the tips of branches are especially apt to be overlooked, and since death results only from contact of the poison with the insect it is seen that thoroughness is the great essential of scale spraying.

Results of Experiments—Crude Petroleum.

Crude petroleum has been used ln experiments at this Statlon for two years. It is a reliable remedy in so far as it kills the scale when applied in strong solutlon ("kerowater" 20-25 per cent), but there is danger to the trees in its application. Last year, using a Gould Kerowater spray pump, a number of four-year-old apple trees were sprayed twice during tne winter, once with kerosene and water and once with crude petroleum and water, the oil belng respectively 20 and 25 per cent of the mixtures. At the time of first application the trees were dormant and at the second the buds were swollen, and in some few trees the tips of green leaves were visible, but the bud had not yet expanded.

Growth was quite seriously checked by the oil. In several cases buds on the new wood were killed and in one tree the new wood was killed back several inches, but the trees leaved out vigorously after some delay and lt was thought no permanent harm resulted. About midsummer a considerable bark killing was observed at the collar of several trees that had been sprayed with oil. and it was found that this in-

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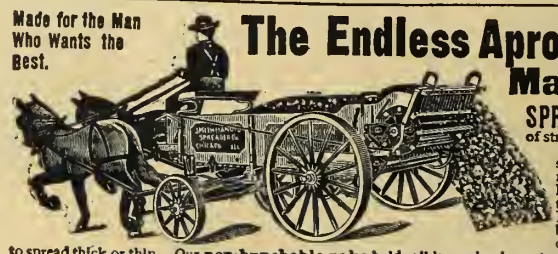

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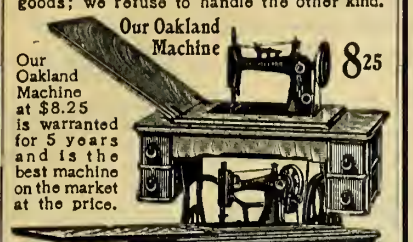

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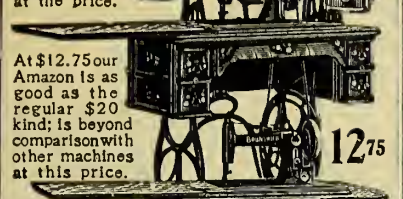

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Fruit and Ornamental, Shrubs, Roses, Bulbs & TESTED 50 YEARS.

Send for Descriptive Priced Catalog FREE
600 Acres. 13 Greenhouses. Established 1852.

PHOENIX NURSERY CO. 1285 Park St., Bloomington, Ill.

Most Extensive Grower of

Grape Vines

In America
Introducer of

CAMPBELL'S EARLY . The Best Grape
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Small Fruits . . . . . Catalogue Free.

GEO. S. JOSSELYN, Fredonia, N. Y.

Tells you about the IDEAL APPLE and DEATON PLUM, the greatest fruits of the age. It tells you why we can sell apple trees, 5 to 6 feet at 10c, 4 to 5 feet 8c, Cherry trees 15c and 25c, other stock equally as low. Send for it. DO IT TO-DAY. **Midland Nursery Co., Des Moines, Iowa.**

jury resulted from the long contact between oil and bark. The excess of oil dripping down the trunk was held at the collar by the soil long enough to destroy the bark.

On February 24, 1903, a Gov. Wood cherry, October peach, and Clapp's Favorite pear were washed with undiluted crude petroleum. The pear was washed all over; on the cherry and peach the one-year-wood was not touched, but all the rest of the trees was thoroughly washed, a scrubbing brush being used for the operation. The fruit buds on the trees were very slightly swelled, but not enough to show any color, and the leaf buds were quite dormant. All three trees pushed the new growth as vigorously as any trees of their kind in the orchard and have maintained their vigorous growth to date.

FIG. 4—PEACH TREES SPRAYED WITH CRUDE PETROLEUM.

On March 10, 130 trees of cherry, peach, plum and pear were sprayed with crude petroleum by means of a Kerowater pump set at 10 per cent solution. The utmost care failed to get satisfactory results from the pump, and most of the trees got more than 10 per cent of oil in the spray. The pump worked unevenly; at times the spray from the nozzle was scarcely colored with oil and again it was almost as dark as a pure oil spray. An effort was made to turn the nozzle on the trees only when the color of the spray was about that previously found in tested 10 per cent solution. Necessarily this was only approximate and the application was therefore quite variable. In June some trees showed by the presence of live scale that the spray had been too dilute.

The peach buds had swollen during the unseasonable warmth of February, and the cold snap following had so largely killed the buds that the trees were heavily pruned before spraying, from one-half to three-fourths of the new growth being removed. This pruning made more thorough work in spraying possible, and is recommended especially where trees are badly infested with the scale. Peach trees may be pruned very heavily with safety. The cut can be made in wood three to five years old, and if the annual pruning has been neglected this severe cutting back will be a benefit, bringing the bearing wood nearer the ground and strengthening the tree.

Fig. 5—Pear Tree Sprayed With Undiluted Oil, March 23. Photographed June 9.

On March 18, 28 apple trees were sprayed with a 10 per cent solution of crude petroleum, the same difficulty being experienced with the pump. The peach orchard was somewhat badly infested with the scale, which was also very bad on a few pear trees. The plum and cherry trees were relatively free from it. The apple trees had been sprayed with crude petroleum the year before and it was thought had been entirely cleaned, but slight infection was found in most of the trees.

On March 23 the trunk and main branches (no wood less than three years old) of all badly infested trees were washed with undiluted crude petroleum, a scrubbing brush being used to get the oil into the bark crevices. All badly infested peach, plum and pear trees in the orchard, including those that had been sprayed with 10 per cent crude petroleum, were given this treatment. Two days later the oiled parts of these trees were thoroughly scrubbed with strong soapsuds to remove the oil as far as possible, one tree of each kind being left. On April 4 no apparent injury to the bark by the oil could be seen and no living scale was found where the oil had been applied.

The trees sprayed with crude petroleum were all more or less retarded in growth, the peach trees being most affected. No difference was observed between those whose trunks had been washed and the rest. Some of the peach trees were much more checked than others—illustrating further the uneven working of the pump. By the middle of May all the trees sprayed had made vigorous growth and in the peaches no more healthy appearance could have been desired.

Fig. 6—Peach Tree Washed With Undiluted Crude Petroleum. Practically Dead.

On June 11, upon a more careful examination of the trees, indications of injury by the oil bath were found, and all the trees were examined, with the result that 11 peach trees were found to be badly injured and two somewhat injured. Gum was exuding in several places in and near the forks of the trees, large areas of bark on and near the forks were dead, and the 15 trees will probably die. No indication whatever of injury could be seen until more than two months after the oil had been applied. The remaining trees that had been treated with crude oil showed no signs of injury. These numbered several that had been sprayed with lime-sulphur-salt solution. All the injured trees are peach, seven varieties being included in the number.

I had used pure kerosene on pear and apple trees in New Mexico, finding it harmless to the trees and death to the scale. But this experiment proves that it is a dangerous practice in Tennessee. In the case of badly infested trees, like the Clapp's Favorite pear above mentioned, I should not hesitate to apply very strong solutions of crude petroleum, or even to use it pure, since the tree is in the greatest danger of being killed by the scale anyway.

When Clapp's Favorite pear trees had grown enough to show the several buds of the flower cluster, but before these had separated, one tree of this variety was washed with undiluted oil in the same way as the dormant tree above described. The effect was apparent from the first in the destruction of the fruit buds and a serious check to growth. Throughout the

(Continued on Page 41.)

Send to LITSON'S NURSERY

For prices on High Grade Nursery Stock including Apple, Crab, Apricot, Pear, Plum, Cherry, Peach, Quince, and all kinds of berry plants, Gooseberry and Grape vines. Evergreens, Roses, ornamental shrubbery and Shade Trees. **Prices low.**

W. H. LITSON
Nevada, Mo.

500,000

June Budded and One Year

Peach Trees

Elberta and all the good kinds. We pay freight and guarantee trees to arrive in good condition. Our trees grow and bear fruit. Write for catalogue and price list.

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APPLE TREES
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A full line of Shade and Ornamental trees and shrubs. Write for prices.

Youngers & Co.
GENEVA, NEB.

Opalescent!

Is the New Century Apple. It's choice. Look it up. Write the introducers.

McNARY & GAINES
XENIA, OHIO

How About It?

Will you plant Apple, Peach, Pear, Plum, Cherry, Grape or small fruit? If so sent list of wants for prices. One of the largest and finest assortments in the country. Prices right.—**The Wolverine Nurseries, G. E. Prater, Jr., Prop., Paw Paw, Mich.**

Cumberland

Raspberry Plants

While I do not expect to go extensively into the plant business yet, being unable to supply my numerous applicants last year, I will again offer upwards of 40,000 Cumberland. Also where it is desired in connection, a limited quantity of such reliable Strawberry plants as Splendid, Warfield, Vories, Excelsior and Johnson's Early. Address

T. H. VORIES, WATHENA, KAN.

Fruit Trees

of all kinds. Small Fruit Plants, Flowers, Shrubs, Evergreens, etc. CHEAP.

HAWKEYE NURSERIES
Stratford, Iowa

Pecan Trees and Nuts

Budded, grafted and seedling trees (1, 2 and 3 years old). **The G. M. Bacon Pecan Co., Inc., DeWitt, Georgia.** Mention Western Fruit-Grower.

No Money In Advance.

We will send any responsible farmer a

DITTO'S

Triple Geared, Ball Bearing, **FEED GRINDER**

to test on his own farm. Grinds ear corn and all small grain. If it is not the easiest running, with largest capacity, don't keep it. It is strong and powerful—a time saver and a money maker. Send for circulars and full particulars.

G. M. DITTO, Box 58 **Joliet, Ills.**

New Things Should Be Tried.

The progressive fruit-grower is continually on the outlook for something new in fruit production. While he holds on to some of the old standards for safety, he believes that in the great abundance of life and nature that fruits of all kinds may be brought to a higher standard. So as we grow in the knowledge of fruit, our ideals move upward. Hence should the ideal fruit be discovered progress in new fruit production would cease. But in order to be active and useful in our day, we should have an ideal apple, peach, pear, cherry or one among the small fruits to look for.

In the 29th verse of the first chapter of Genesis our Creator said: "Behold I have given you every herb bearing seed and every tree in which is the fruit of a tree yielding seed; to you it shall be for meat." Now, from the original seed given to man in the beginning have been evolved all the fruits that we so much enjoy today. We have no record of the people in ancient times, making any progress in orchard fruits. They had grapes, figs and olives in the promised land, but there is no record of apples, peaches, pears, cherries, plums, apricots or any of the berry fruits. Neither is there much notice of fruit culture or advancement being made in more modern times. So the writer feels safe in asserting that more progress has been made in fruit culture and new fruit discoverles the past seventy-five or one hundred years, than had been made in all the years from the beginning of the christian era to the year 1800. There never was a time when fruit was being used for "meat" as it is today in our country. Since so much progress has been made in the past one hundred years, there is no doubt but that there are greater things in store for progressive fruit men in this the twentieth century.

With every new year comes some new fruits that are offered by originators for trial tests. Most of them are worthy of trial and they should be thoroughly tested by fruit men all over the land to find their value and where they will succeed best. It is through many trials and much tribulation that fruit men in the past one hundred years discovered the valuable fruits we now grow.

Owing to the short time in the trial tests of the small fruits, there is more activity in their dissemination than with the tree fruits. While we have a great many good apples, the writer has faith to believe that there are yet better apples in the hidden resources of apple creation. We are co-workers with the great Master Creator. So let us cross fertilize and plant and grow seedlings from the best varieties of apples. Every fruitman should set aside an acre or more land for tree fruit experiment, especially with apples and peaches.

The new berry fruits tested on our soil this year were the Parson's Beauty, McKinley, August Luther, Dunlap, Cumberland, Sutherland, Miller, Texas, Hero, Kansas, Dunlap, Parsons and Luther gave the most satisfactory results. These will doubtless take high rank among those recommended for commercial purposes. McKinley is late, but of medium size and poor in taste. The Cumberland, Texas and Miller were injured by the May frost. They will be held for further trial. The Hero is an Arkansas seedling of fair size and color, but not sufficiently productive. The Kansas was not in the least damaged by frost, but berries were not up to even a fair standard in size. Its plant growth is strong and hardy. The New King red raspberry is an improvement on most of the older ones. The bush is healthy, hardy and of fair size. Its fruit is about the size of the Miller, but in color a shade darker. One good point in its favor is in its long fruiting season, continuing over three weeks.

The Kenoyer is without any doubt the best blackberry that has been introduced for several years.

The new strawberries that will show us their size and value in 1904 on our soil are the Challenge, Uncle Jim, Nichols, Granville, Sykes, and Suggs, the latter two of Kansas origin. The plant growth of these are strong and indicative of large fruitage in 1904.

Not much attention has been paid to the suggestion of the American Pomological Society about shorter names for new fruits and a striking out of a part of the long names of the older fruits. Originators or disseminators of new strawberries seem (from the double names they use, to think that the double name gives their berries a better introduction to the fruitmen which is certainly a mistake. Several new strawberries have been introduced the past two years with double names. These are Nichols Granville, Parson's Beauty, August Luther, Senator Dunlap and Uncle Jim. As one of your committee on nomenclature, the writer would suggest that our society drop Granville from the name Nichol's Granville. In Parson's Beauty, drop "Beauty" and retain "Parsons." Then use Luther for August Luther and Dunlap for Senator Dunlap. Now what do we berry growers care for an Uncle in the name of a strawberry? Let us drop the Uncle and hold on to the homely name of Jim. Then we have Nichols, Dunlap, Parsons, Luther and Jim. The value there is in a fruit of any sort will soon make the name familiar to the fruitmen.

We are opposed to naming any new fruits after famous men of our times. When one is so named it is a sure sign that it cannot stand on its own merit.

Let originators attach their surname or some neighboring friend or the name of a town or state. I have not noticed any double names being wedded to any new apples of recent introduction. We might divorce "Ben" from Davis. There is nothing in "Ben" indicative of taste, size or color of this famous apple. Apples like the Grimes' Golden may be excused for carrying a double name, as "Golden" indicates a beautiful yellow color. Now before closing this paper I would suggest that the next really good and valuable commercial apple (introduced from the West) be called for our honored president, "Wellhouse," of the Kansas State Horticultural Society. We have a Smoke-House apple and a good Wellhouse apple would not be out of place.

Lawrence, Kan. B. F. SMITH.

Spraying Peach Foliage.

At the recent meeting of the Missouri State Horticultural Society Mr. J. H. Hale stated that peach foliage in Georgia had been injured by spraying with such an insoluble compound as arsenate of lead. Such results being unusual, we referred the statement to the entomologist of the Bowker Insecticide Company, Mr. A. H. Kirkland, who writes us substantially as follows:

"From considerable experience in the use of this and other insecticides, we have no hesitation in saying that Disparene will not burn the foliage of the peach or other stone fruits under the conditions that prevail in the fruit-growing sections of the North and West. In the Southern states, where warm, humid weather is more prevalent, all spraying compounds are more liable to injure delicate foliage. In Georgia, for example, it is almost impossible to use such a safe fungicide as Bordeaux mixture on peach foliage without injury, while in New York a weak Bordeaux mixture is used with impunity. The trouble is that peach foliage, naturally tender, is made still more so by the forcing that attends the liberal use of fertilizers and frequent cultivation. We have never had brought to our attention a case of injury to any kind of foliage through the use of Disparene by fruit-growers in the North and West. In the South, we think, further experiments on peach foliage, under conditions prevailing there, are necessary before any arsenical spray can be unhesitatingly recommended. Recent experiments at the Cornell (N. Y.) Experiment Station with this insecticide against the plum curculio have given perfectly satisfactory results, both in destroying the curculio and in non-injury to the leaves, plum foliage being almost as tender as that of the peach. Of this much we are certain: Disparene can be safely and effectively used on the apple, pear and quince anywhere; on peach, plum and cherry in the North and West, while we believe that further experiment will show that under favorable conditions it may be safely used on all the stone fruits in the South. Added to the safety with which Disparene may be used on foliage, it has the rare and desirable quality of adhering to the foliage in effective conditions throughout the season."

One Way of Fighting the Borers.

B. F. Pancoast, Iola, Kan., has the following method of fighting borers in peach trees:

"Two years ago I was examining some young trees for borers. I found them abundant. I removed the dirt from the trees preparatory to digging them out. I was then called away on some other business and the trees were forgotten until more than a week later, when I returned to finish the borers. I found the heat of the sun had dried the exposed roots, and the borers were all dead. Since then I destroy borers by cleaning away the soil and letting the sunshine do the work for me. It does not hurt the trees as much as the cutting necessary to dig them out. I have had good results from sowing a quart of common salt under each tree. The foliage is improved in color, and it destroys insects that come in contact with it."

Our readers will be pleased to see the advertisement of the old reliable pioneer seed corn firm of Shenandoah, Ia., J. B. Armstrong & Sons, again in our paper. This firm stands for reliability, best varieties, and progress in corn raising. They have an interesting announceemnt which it will pay you to read. Do not forget to send for their free catalogue. Address J. B. Armstrong & Sons, Shenandoah, Iowa.

The "Acme" Pulverizing Harrow is pre-eminently adapted to the preparation of ployed sod because of the fact that the coulters all slope backward and there is therefore little if any tendency to pull up sod or other rubbish.

Elmhurst Nursery & Fruit Farm

M. E. Chandler, Proprietor — ARGENTINE KANSAS

Strawberry and Raspberry Plants a Specialty

A Section of Our Strawberry Field.

New black soil will tell when it comes to growing strawberries for plants. Plants are large and well rooted, with plenty of fibrous roots. Our stock is large, consisting of nearly 50 varieties, both new and old sorts.

OUR RASPBERRY PLANTS

are finer than ever. The season was just right for making strong, healthy plants, 100,000 Kansas, 50,000 Gregg, 25,000 Miller Red, also Munger, Nemeha, Cardinal and other varieties. A good supply of

Snyder and Early Harbest Blackberry Plants.

10,000 Grape Vines

That are hard to beat. Moore's Early, Moore's Diamond, Niagara and Concord. Currants, Gooseberry and Asparagus plants. Several thousand Peach, Cherry, Apple, etc.

25 Varieties of Dahlias, 100 Varieties of Cannas

will pay you to get our new catalogue. Our prices are right. Discount on large orders.

ELMHURST NURSERY & FRUIT FARM

M. E. Chandler, Proprietor, Argentine, Kansas

Fairbury Nurseries

FAIRBURY, NEARASKA

GROWERS OF.....

NURSERY STOCK OF ALL KINDS

Apple, Pear, Peach, Plum, Cherry Grapes, Small Fruit Plants and Ornamentals

With a full line of nursery stock of all kinds, we solicit the trade of planters everywhere. Our stock is in the very best of condition, having made a most excellent growth last season. Without devoting our time to the introduction of untried varieties, we have strived to grow the very best trees and plants possible of the sorts which are wanted by growers who desire to make money. We employ no traveling agents, but sell direct to the planter at as low prices as reliable stock can be furnished.

Freight paid between Mississippi River and Rocky Mountains on orders of $10. Freight prepaid anywhere in U. S. on orders of $20 or more.

Descriptive catalogue for 1903-04 is free for the asking. It contains descriptions and prices of the standard varieties, with all of the newer sorts which have proved worthy of planting. In addition, there are a number of special dollar collections which will appeal to the planter who wants to test a small quantity of certain varieties. Send today for catalogue.

Fairbury Nurseries

C. M. HURLBURT, Manager — FAIRBURY, NEBRASKA

References: Dun's or Bradstreet's Agencies, Goodrich Bros. Bank or any business man in Fairbury.

Our Superior Plants Need No Recommendation to our Customers. They have tested them and will plant no others.

Strawberry Plants

No disease of any kind, because we always grow our plants on **new fields.**

THAT PAY TO PLANT SOLD AT REASONABLE PRICES

Because we have new land to grow them on that is far richer than any soil can possibly be made by use of fertilizers of any kind. We have made a specialty of growing superior Strawberry Plants for 20 years and know what a good plant is. We will put our plants against the world for the production of paying crops of **Choice Berries.** **PLANT DIXON'S SUPERIOR PLANTS AND MAKE MONEY.**

50 Acres of New Fields

We Want You to Try our Plants

Largest and Most Complete Plant Establishment in the West

30-acre field of Strawberries—Snap-shot taken December 8th. (All under mulch now)

Our Old Customers Will Plant No Other Plants

We grow large numbers of ***Raspberry, Blackberry Dewberry, Etc.***

The New Cardinal is the leading berry of its kind. Mersereau is the best Blackberry.

Do not forget that we guarantee satisfaction. Write for our new Catalogue; it is now ready to mail. Address

F. W. DIXON

HOLTON, KANSAS

Showing our 4-gallon sprayer—best for small-growing trees, nursery stock, vineyards, etc.

Rippley's No. 7 Lawn, Park and Mountain Sprayers, rigged to be shoved by hand or pulled by horse.

The Enemy Is Ready==

Are You Prepared with the Best Implements of Warfare?

If Not use one of.....

Rippley's Spray Pumps

& Rippley's Spraying Mixtures

Agents and Dealers Wanted! Write Today!

We want a live agent or dealer in each locality to canvass among the Fruit-Growers and Farmers to take orders early for **RIPPLEY'S 4 and 5-GALLON COMPRESSED AIR SPRAYERS, HAND SPRAYERS,** also **ECLIPSE NEW MODEL, 1904 PATTERN LARGE ORCHARD SPRAYERS. Prices $1.00 to $25.**

If you wish to sell a line of Sprayers that are sold under guarantee to be the best for the money on the market, write us at once. Or send us $1.50 with good references as to your honesty, and we will send at once a sample **5-Gallon Sprayer** for you to canvass with and take orders. Balance you can pay for in 30 to 60 days. Our agents made from $40 to $250 per month last season selling sprayers. You can do the same if you will get out and hustle.

Rippley's Spraying Solutions

Undeniably constitute the best, simplest and most reliable form in which to buy spray material. They are put up in cans and bottles, in the most concentrated form and need only to be mixed with water and they are ready for use. As they are all in liquid form there can be no precipitation or settling to the bottom. They always remain in solution and there is no consequent danger of burning foliage and injuring plants, vines, trees, etc.

Our Sprayers Are Used and Endorsed by

Stark Bros. Nursery Co., Louisiana, Mo.; Green Bros. Nursery Co., Rochester, N. Y.; Alpha Nursery Co., Alpha, Ill.; Iowa Seed Co., Des Moines, Iowa; Vail Seed Co., Indianapolis, Ind.; Missouri Valley Seed Co., St. Joseph, Mo.; National Fruit-Grower, St. Joseph, Mich.; and thousands of others.

RIPPLEY HARDWARE CO.

Manufacturers of Sprayers, Spraying Solutions and Breeders' Supplies.

Box 217 *Send for Catalog* **Grafton, Illinois**

New Blackberry

"BRILL"—A cross between a Dew and Blackberry. The largest early berry in the state, as far as I know. Commences to ripen here about May 10th. Very hardy and very productive. Write for prices. I am growing some fine new Texas Peaches; Annie Orr, Ark. Beauty (June Elberta), Thiel, Horton, etc. Address

JOHN J. BRILL
Grapeland, Texas

The Phenomenal Raspberry

beats them all. Twice as large as the old Loganberry; canes twice as strong; twice as big a cropper. Over $900 was cleared from one acre last year. One sample box was sent to M. George & Son, South Water st., Chicago, Ill. Messrs. George & Son said they were the largest berries ever seen in Chicago. Strong plants, $10 per 100, f. o. b. Loomis, Calif.

California Carnation Co.
Lock Box 103 Loomis, California

Strawberry Plants

As good plants as were ever grown. List of varieties complete —over 50 of the best ones.

CATALOGUE READY JANUARY 1.

D. McNallie
SARCOXIE, MISSOURI

SMALL FRUIT PLANTS

Now is the time to order for spring planting, as early orders save disappointment in spring rush, owing to shortage of varieties, if ordered late.

C. B. GREEN, SEDALIA, MISSOURI

Choice Strawberry Plants

Good supply of large Strawberry Plants for Spring of 1904. All the best Standard Varieties, with some of the Newest Out; also Cumberland, Gregg, Nemaha, Kansas, Haymaker, Cardinal.

Raspberries, Grapes, Currants and Gooseberries; 25 years' experience in growing plants and fruit enables us to sell you good stock at the lowest price. Send card for descriptive catalog.

R. D. McGEEHON, Atlantic, Iowa.

STRAWBERRY PLANTS

All of the best New and Standard varieties. Also the best leading and standard Blackberry and Raspberry plants. Vigorous. Heavy Rooted and true to name. Our prices are right and we Guarantee satisfaction. Low transportation and prompt shipments. Illustrated and descriptive catalogue free.

R. F. D. No. 6
A. R. WESTON & CO., Bridgman, Mich.

PLANTS OF THE **Beaver Strawberry**

Greatest Production of the Greatest Amateur Grower **FREE**

to our customers this spring. Send your name and learn about this offer.—
M. CRAWFORD CO., Box 1004, Cuyahoga Falls, Ohio.

Strawberry Plants

EXCELSIOR—the earliest to ripen—$2.50 per 1000.
GANDY—the latest—$2.00 per 1000.
Send for price list.

J. L. WILLIAMS
University Place, Kansas City, Kan.

Kansas Raspberry Plants

Standard variety, $5 per thousand. Large orders at special rates.

Michel's Early, Excelsior and Lady Thompson Strawberry Plants, $1.50 per thousand.

B. F. STAFFORD, Gentry, Ark.

Refer by permission to State Bank of Gentry.

Strawberry Plants

that BEAR FRUIT. Wholesale Prices. 110 Varieties. Catalogue FREE. Write
NORTH STAR PLANT FARMS, Cokato, Minn.

STRAWBERRIES Raspberries, Blackberries, Grapes, Currants, Gooseberries, Novelties, Etc. Buy your plants from us and we will catch your ground moles. Best mole trap on earth FREE with every order. Our 60-page 1904 Catalogue Free.

Huntsville Nurseries, Huntsville, Ohio.

How to Grow a Number "1" Crate of Strawberries.

There has been a great deal written about "growing strawberries," as nearly every grower has a pet fad of his own, but I will endeavor to write on "how to grow a 'No. 1' crate of strawberries.

One must study the conditions, markets, etc., as they vary considerably, but when you find what is wanted and what takes, go after it. .

I might say that the Hoyt Plant and Seed Co's grounds are located between St. Paul and Minneapolis, two of the best markets in the state of Minnesota, and are connected by telephones with both cities, so that either market can be taken advantage of, and also to adjoining cities by long distance phones.

Street cars from both cities pass within one-half mile of their grounds making it convenient for pickers, which are also a very important part in the production of fancy berries on a large scale, for without good pickers at the right time one will lose very heavily oftentimes.

The conditions for growing strawberries in Minnesota are not the same as for further south, but the main points are no doubt the same. I believe the secret of growing a No. 1 crate of strawberries lies more with the plants used than anything else, providing the proper conditions are given. A plant must be healthy, strong and high in fruiting vigor to be expected to respond in proportion to the amount of care and work given it necessary for the highest degree of success. No. 1 berries do not grow on wild vines or "scrubs" either, but we know they will grow on No. 1 plants if given half a chance. A great deal is being done along the line of growing "pedigree" seeds and plants and the field is unlimited and very interesting. The writer is now preparing an article on "Growing Pedigree Seeds and Plants" to be read before the Minnesota State Agricultural Society which meets in Minneapolis, Minn., Jan. 12, 13, and 14, 1904. The term "pedigree" denotes the genealogy or the line of ancestors from which a plant or seed descends, and is very much more important than a great many believe. The improvement is as marked with plants and seeds as with animals and a great deal of good is being done along this line today and especially by our agricultural schools and colleges and these results should be carefully watched.

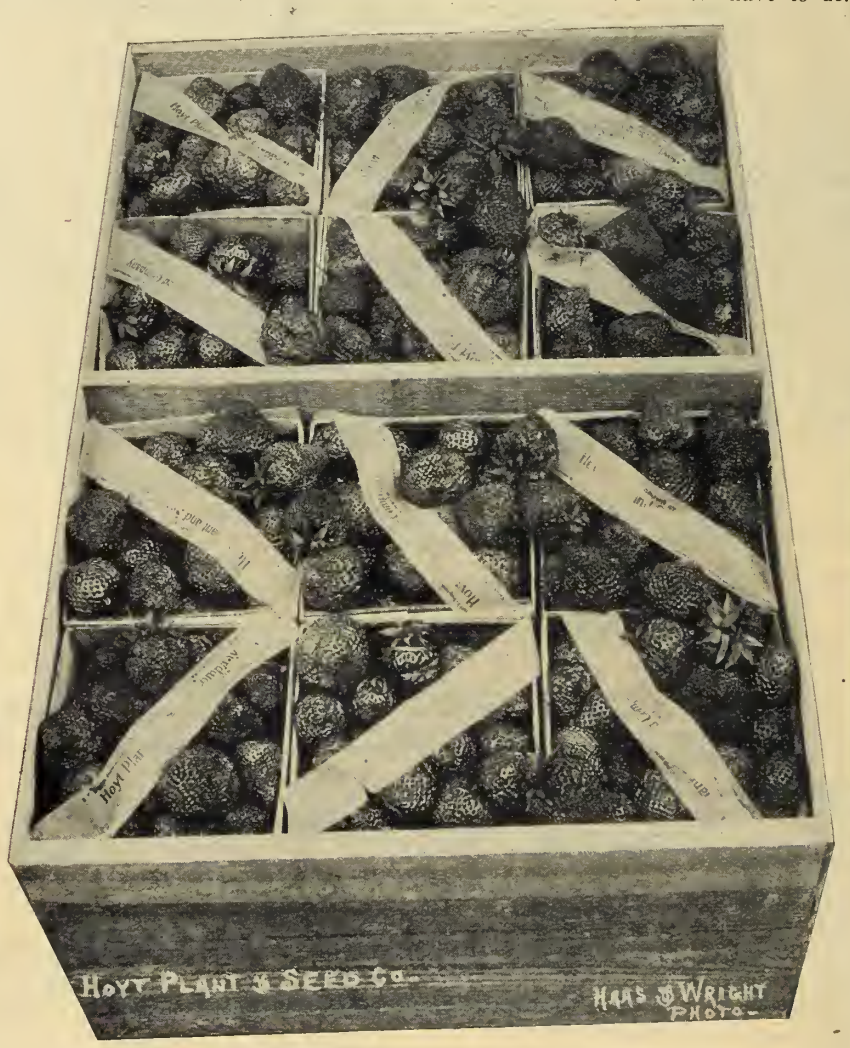
Strawberries from these selected or pedigree plants which have been selected for a long period for fruiting vigor are far superior to commonly selected plants if they have been handled properly and kept restricted. Too many allow their plants to exhaust themselves, then keep right on using and selling plants from them when they soon become worthless or oftentimes nearly barren.

It costs just as much to set a "scrub" plant as it does one you know you can bank on,' so why waste your time, energy and patience on such poor material to work with or you will be disappointed and discouraged?

Now is the time to think about whether you will grow strawberries, and if so will they be the "No. 1's" which often sell for several cents more per quart than those ordinarily grown, or will they be the same old kinds from some old run out bed? Or would you rather pick 200 or 300 bushels from one acre of ground or are you satisfied to pick 25 to 50 bushels, as some are now doing, and even less?

These figures are not exaggerated in the least, and show what a strawberry plant can do or is capable of doing if handled in a scientific manner. Start right by getting plants from a reliable nursery or plant grower you can rely on, give them the proper care, cultivation, restriction, winter protection (in the north), at least, and your efforts may not be all in vain.

Too much stress cannot be laid on this point, for I know personally of nurserymen who make it a business of buying up old run out strawberry and raspberry beds from which they supply "any named variety you want." Look out for these fellows. No wonder some of this kind of nurserymen have to change their name every year or so in order to do business and that is just about what some of them have to do.



There will be other articles later, on the planting and cultivation of the strawberry so I will not go into that now but I might state how our "No. 1's" are picked and handled.

The pickers are all numbered and each one numbers his or her boxes with their number so if there is any poor work it can be readily traced, but you will find the work will be better than where the do not number their boxes. We use the 6 quart carriers to pick in and the berries are sorted as picked, the No. 1 being kept separate from the No. 2, as there is sometimes one box or a part of a box which will not come up to the standard and are put in a No. 2 crate.

We only label our No. 1 crates, the No. 2's being sold more cheaply and the grocers know what we mean when we say No. 1 and No. 2. The No. 1's are usually taken by the best grocers or wealthy families, while the smaller stores buy the second grade. This method is far better, we think, than picking them just as they come, for then they would all have to be sold a little cheaper, but we can almost figure on giving our seconds away and still come out ahead rather than mixing them.

Try this system and you will soon have your name up for No. 1 strawberries and you will have no trouble in finding buyers, for a No. 1 berry never gluts the market. We use thin wax paper labels which cannot be used by any one else, as they are destroyed when berries are emptied out, but people know where the berries come from and ask for that brand.

B. T. HOYT,
Supt. Hoyt Plant & Seed Co.
St. Paul, Minn.

❦ ❦ ❦

"I am taking nine papers, but I like the Fruit-Grower the best of all."—G. W. Davis, Flatwoods, W. Va.

RATEKINS' SEEDS

ALWAYS RELIABLE AND BEST

Because they are fresh and **New.** Strictly Iowa grown and **Sure to Grow.** Our big **Twentieth** Annual Illustrated Catalogue tells you all about every **Farm and Garden Seed** and crop that grows. It's **Free** if you mention this paper. **No Fakes; Free Seeds; Trash** and other **Schemes;** but good **reliable** Seeds **cheaper** than others sell at wholesale. If in want of Seeds send for our Catalogue to-day. — **RATEKIN'S SEED HOUSE, Shenandoah, Iowa.**

SHENANDOAH YELLOW

The corn that has made Shenandoah famous. Has outyielded all other varieties of yellow corn wherever tested. A deep grained 100 day yellow corn, ripe in September. Will outyield, outshell, and outsell any yellow corn you ever grew. The world's husking record, 201 bu. in ten hours, was made in this corn near Shenandoah, Dec. 8, 1903. Send for free catalog, photographs and samples of this and other varieties of corn. $5.00 worth of seeds free on club orders. Ask about it.

HENRY FIELD, SEEDSMAN, BOX 15, SHENANDOAH, IOWA
THE EAR SEED CORN MAN

Seed Potatoes

Red River Early Ohio Seed Potatoes in carload lots.

FARGO SEED HOUSE
FARGO, N. D.

Best New Varieties of Strawberries

At Greatly Reduced Prices

Send for descriptive catalogue and Spring price list.

HUBACH & HATHAWAY
JUDSONIA, ARKANSAS

Loganberries

Let every fruit-grower plant some Loganberries. They are proving more productive and profitable than Blackberries and ripen at a season before summer drouths.

Strong, well-rooted plants, $1.00 per dozen, postpaid.

Write for prices in larger quantities.

J. B. Pilkington, Nurseryman
Portland, Oregon.

Strawberry Plants and Seed Potatoes.

You can make more money if you plant intelligently. Write and tell us about your soil. We'll send you our Free Descriptive Book. Over 100 varieties.

FLANSBURG & PEIRSON,
Leslie, Mich.

Choice Plants

produce

CHOICE STRAWBERRIES

I have 90 acres of them, 30 acres especially for plants. Write me your wants. Catalogue Free.

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Haberland

is one of the best strawberries in cultivation. We have 100,000 plants at $1.75 per M; 2,000,000 in 45 other varieties. Prices very low. All as good as grow. Write for catalogue and save money on spring order.

J. W. JONES & SON, Allen, Md.

Pure Kansas, Gregg and Cumberland Raspberry Plants

Also a general stock of Nursery Stock. Send for catalogue.

G. F. ESPENLAUB
ROSEDALE, KANSAS

Watermelons The Halbert Honey is the best on earth for home use and local market. Seed by the originator. **H. A. Halbert, Coleman, Texas.**

98c, Buys these $3.50 Shoes
SEND NO MONEY.

These are high-grade Men's and Women's Shoes at lower prices than ever before heard of. We guarantee them to be more stylish, better fitting, better wearing, than you can buy elsewhere at $3.50 to $5. **This is the most wonderful shoe offer ever made,**

98 cents buys this Men's handsome Blucher hand-sewed sole, box calf shoe, in latest New York Tipped Toe; an extremely stylish, high-grade, durable shoe, equal to shoes that sell in stores everywhere at $3.50 to $5; sizes 6 to 11, widths D, E, E E. Fit guaranteed

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Write for order blank.

98 cents buys Guaranteed $3.50 Patent Leather Shoes for both men and women; also a variety of other good shoes, of which we will send you full description if you write us.

98 cents buys this Ladies' handsome, new style elastic instep, Lace Shoe, made of special vici kid, on the most stylish last, with Patent Leather tip. The elastic instep makes the shoe self-adjusting for a high or low instep, and insures comfort to the wearer; sizes 2½ to 8; widths A to E E. Guaranteed equal to shoes selling in stores and from other catalogues at $3.50 to $5.

SEND NO MONEY.
but if you want a $3.50 pair of shoes for 98 cents, if you are willing to examine them if shipped subject to examination and approval **before payment,** simply say on a postal card "send me order blank." We will also send you description of our **New System Big, Free, nearly 1,000 page Catalogue,** which will save you dealer's profits on not only shoes but **everything used in the home.** Highest bank, commercial and customer's references. Address **GLOBE ASSOCIATION, 257 to 271 Wabash Avenue, Chicago.**

Send no Money.

Wholesale Established 1875 Retail

Mount Arbor Nurseries

E. S. Welch, Prop., Shenandoah, Ia.

The Great Nursery Center of the West.

All kinds of Fruit Trees & Plants

Ornamental Trees, Shrubs, Vines, Etc.

Retail Salesmen Wanted.

We have to offer for Spring, 1904

Apple, Crab Apple, Pear Cherry, Plum, Peach, Apricot and Quince Trees

Grape Vines, Blackberry, Raspberry, Dewberry and Strawberry Plants. Asparagus, Rhubarb, Roses, Shrubs, Evergrfeens, Hedge Plants, Forest Tree Seedlings, Black Locust, Catalpa, Russian Mulberry. Location 175 miles southwest of Kansas City. Correspondence solicited.

GREENWOOD COUNTY NURSERY

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A RARE CHANCE FOR ORCHARDISTS

We have a surplus of Elberta Peach, June buds and one year old. Insured true to name and free from disease, well graded; June buds 1 to 2 ft. and 2 to 3 ft. and one year old, 3 to 4 ft. and 4 to 6 ft. By the thousand at prices too low to quote. Address

G. H. MILLER & SON, ROME, GA.

For Sale *100,000 to 200,000 Catalpa and Hedge*
Fence Posts

In car lots or smaller quantities at 7c each, on track here.

B. F. COOMBS, Parker, Kansas

WIRE $1.40 PER 100 LBS.

SMOOTH GALVANIZED WIRE put up 100 lbs. to a bale, gauges from 11 to 14 inclusive. Lengths running up to 250 ft. Per 100 lbs. $1.40. **Fence Staples,** all sizes, per 100 lbs. $2.00. **Wire Nails,** assorted in a keg, per 100 lbs. $1.70. **Barbed Wire,** per 100 lbs. $2.60. **Poultry Netting, Field Fence,** etc., at low prices. **Ask for free catalogue No. 399,** on merchandise of all kinds from Sheriffs and Receivers sales **CHICAGO HOUSE WRECKING CO., 35th & Iron Sts, Chicago.**

A Test of the Score Card for Strawberries.

I want to offer a few criticisms, all in friendship, on the suggested score cards for strawberries appearing in your paper for November. I have at present no substitute to offer, not having given the matter the thought it should have, but I tried it on two of my best varieties and both systems showed decidedly weak points, in my opinion.

First we will try Mr. Reasoner's card on Corsican and Oregon Everbearing. I take Corsican as standard of productiveness, as all around I think it equals Sample. But right here comes one of the defects: Must a separate variety be used as standard for each point in plant and fruit? If so, who is to decide which varieties are to be so accepted? Both cards have this defect. Again, what constitutes "Duration of picking?" The Oregon and St. Joseph, here, are always good for five or six months. Are other varieties to be judged by them, or would "everbearing" sorts occupy a separate class? In the latter case I fear many of these would be disqualified.

But to see how the cards work: The last two columns denote cuts for defects.

Character	Scale of Points	Corsican	Oregon
Rootage	5		
Stock and foliage	5		
Vitality, drouth proof	7	1	
Plant maker	10		1
Healthfulness, rust proof	5	1	
Blossoms	5		1
Staminate			
Pistillate			
Productiveness	25		8
Size	10		2
Shape	5		2
Color	5	1	
Flavor	8	2	
Firmness, shipping quality	10	3	
Total score	100	92	86

Now, taking Corsican as standard on points not cut, and Oregon the same, I think I have applied the card fairly and find the Corsican to be much superior to the Oregon. True, this is largely due to a big cut for Oregon on productiveness, but I fail to see how it is to be avoided if the card is used. As well try to make a Leghorn meet a Brahma on weight clause. The Corsican is a grand berry for home use or nearby market, but liable to sunscald and rot, and too soft to handle rough shipment, while the Oregon is like a baseball, and of best quality, to say nothing of netting four or five times as much per crate in September and October as the big crop of June Corsicans.

Let us now take Mr. Goldsborough's card, which is better, I think, being more concise, beside having a descriptive tail, which I leave off in order to shorten this article; besides, I am not sure I have it fully digested:

Character	Scale of Points	Corsican	Oregon
Productiveness	8		3
Size	8		3
Shape	6		2
Color	5	1	
Duration of Picking	5	3	
Sweetness	5	1	
Firmness	4	2	
Absence of rot	4	1	
Keeping quality	4	1	
Color (inside)	3	1	
Calyx or cap	3		
Flavor	3	½	
Fragrance	2	½	
Fruit total	60	11	8
Runner habits	8		2
Disease resistance	6	1	
Rootage	5		
Vigor	4		
Foliage	3		
Crowning	3		
Leaf stems	3		
Fruit stalks	3		
Blossoms	3		1
Size	2		½
Plant total	40	12	11½

The Corsican is thus cut a total of 12 points and the Oregon 11½, leaving the score of the former at 88, and the latter at 88½.

This plan of scoring brings them nearer together, but still the Oregon should stand high above the Corsican in everything but size of berry and productiveness at midseason when berries usually ripen. To be wholly fair I have cut Oregon 25 per cent on "size of plant" though for its kind it is plenty large enough. Sometimes it rusts, so, perhaps, I should have cut it a half point here, but this would only make them even. I have cut Corsican 3 on "duration of picking," in comparison with Oregon only. To be fair to it, it should be compared, I think, with Sample, as that, too, is a simple cropper, but this would place it ahead of Oregon, where it does not belong.

I will only offer two suggestions, which just came to mind as pertinent: 1st. Commercial valuations of the crop should have a place on the card. 2d. Productiveness and size should not largely overshadow quality. Even if we lay aside personal preference for high quality, the big berry that is too soft to ship well must get severe treatment when it gets to market and the market is limited by time and conditions, which the smaller, lighter yielding, but earlier, later and firmer berries may meet.

F. A. COWELL.

Lakebay, Wash., Nov. 27, 1903.

When F. S. Hall, Fulton, Kan., renewed his subscription to the Fruit-Grower recently, he wrote: "I am growing an orchard of 100 acres, according to the directions given in the Fruit-Grower from time to time. My trees are of the finest—representative of the practical ideas and suggestions in the Fruit-Grower."

A Man's Duty.

It is every man's duty to himself, to his family, to his business, to buy where he can buy cheapest, to spend his dollar where it will bring him the biggest value in the goods he buys. A man who recognizes these truth, or a woman, should write the Globe Association, 257 to 271 Wabash Avenue, Chicago, who advertise in this paper, $3.50 shoes for 98 cents.

TREES, PLANTS AND VINES.—Our rural readers should send to Green's Nursery Co., Rochester, N. Y., for their free catalogue beautifully illustrated, containing 112 pages, one of the largest and most complete nursery catalogues ever published. There are over two hundred illustrations and the covers are lithographed. Green's Nursery Co., has been growing trees, etc., for twenty-five years and have secured a national reputation. They are also breeders of high grade poultry and dealers in agricultural and horticultural implements. See their advertisement on another page.

In this issue the Wichita Nursery has an advertisement which will interest Fruit-Grower readers. The section of country in the neighborhood of Wichita had more fruit this year, comparatively, than the rest of the state, and there will likely be increased planting. The Wichita Nursery would like to send catalogue to all interested in purchasing nursery stock.

Warnock's Tree Paint

The cute housewife said to her milkboy, "Your father puts dirty water in his milk!" The honest milk-boy said to the cute housewife, "No, he don't either! I saw him get it clean out of the pump!"

There is no dirty water in **Warnock's Tree Paint,** sold at a high price. The manufacturers take their choice of ingredients from the three kingdoms of nature and compound a liquid armor which protects the **entire** bodies of all kinds of trees from the animals and insects which prey upon them. The mouse, the rabbit, the sheep, the goat, will not eat the bark. It tasts bad!

The moth which lays the borer egg will no more deposit her eggs in **Warnock's Tree Paint** than the gad-fly will deposit her eggs in swine. The conditions are out of harmony. The moth that lays the canker worm eggs has no wings. She will no more bark up a tree that is protected with Warnock's Tree Paint than she will climb a barber's pole or a pine tree.

Warnock's Tree Paint protects from roots to limbs, also the limbs, if painted. There is no place for mice to get **under it.** Even a jack rabbit can not get above it unless the snow is very deep.

The flat-headed borer works in apple trees up to the limbs, and frequently in the large limbs. The peach borer works from the roots to the limbs and above the limbs where they branch out from the trunk of the tree.

Our contention is that **Warnock's Tree Paint is the best all round protection for fruit trees, now on the market. We are demonstrating this fact all over our loved America!**

The Paint costs $4.00 for One Thousand trees. One application will protect for three years. Order early and have your paint shipped by freight. By painting early you will head off the canekr worm.

For new descriptive circular write

R. Warnock & Company
Westboro, Missouri

Senator Dunlap
STRAWBERRY PLANTS

Buy your plants from the originator. Bulletin ready about 15th of February. Send for one. My mailing list was burned. Strawberry men are requested to send address.

J. R. REASONER, URBANA, ILLINOIS

EUREKA INDESTRUCTIBLE FENCE POSTS

Cheap as cedar ---Made where used. No freight to pay. Great inducements to agents to work territory. For terms, etc., address, with stamp, W. A. DICKEY, North Manchester, Indiana.

TREES and Plants at Wholesale
Prices. Apple Pear and Plum $8.00 per one hundred. Catalogue Free.
RELIANCE NURSERY, BOX S 410, GENE A, N. Y.

When writing to advertisers, please mention the Western Fruit-Grower.

BERRIES! BERRIES! Our Catalogue of New and Standard Strawberries and Raspberries will be ready to mail February 2.
Million Plants for Sale. **B. F. SMITH,** Drawer C, LAWRENCE, KAS.

Save Money on Fruit Plants

Strawberry Pants
A SPECIALTY

We grow them by the Million and can save you Money on one-half dozen or a car load.

Raspberry, Blackberry, Currants, Grape Plants, Etc.

at prices that are right. Everything we ship is guaranteed strictly first class and true to name.

Our 1904 catalogue is free and tells a lot of things fruit-growers should know. **Write today.**

O. A. E. Baldwin *VINE STREET BRIDGMAN, MICH.*

DON'T BUY GASOLINE ENGINES Until you have investigated *"THE MASTER WORKMAN"* a two-cylinder gasoline engine, superior to all one-cylinder engines. Costs less to buy and less to run. Quicker and easier started; has a wider sphere of usefulness. Has no vibration, can be mounted on any light wagon as a portable. Weighs less than half of one-cylinder engines. Give size of engine required. (Sizes 1½, 2, 2½, 4, 5, 6, 8, 10 and 15 Horse Power). Please mention this paper. Send for catalogue.
THE TEMPLE PUMP CO., Canal and Meagher Streets, Chicago, Illinois.

Get Prices on our THREE RIVERS, MICHIGAN Grown

STRAWBERRY PLANTS

Central Mich. Nursery Branch
THREE RIVERS, MICHIGAN.

Largest Acreage of Small Fruit Plants in Southern Michigan. Plants Best and Prices Lowest.
ADDRESS CORRESPONDENCE TO MAIN OFFICE, KALAMAZOO, MICH.

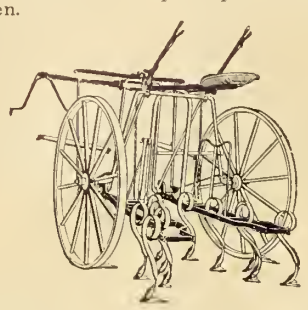
L. G. Bragg & Co.

(46 Years in the Business) Offer an immense Stock of

FRUIT, ORNAMENTAL TREES, ROSES, ETC.

At Wholesale and Retail. Agents Wanted. We give large planters best wholesale rates.

"Bragg's Common Sense Tree Digger" has no peer. It is being used by most of the principal nurserymen.



Bragg also manufactures the Jumbo Cultivator. Nurserymen appreciate the Jumbo, as they can cultivate all sizes of stock from 1 inch to 6 and 7 feet. Farmers also appreciate it as they can cultivate corn from start to finish. Correspondence sollcited.

L. G. BRAGG & CO.
Kalamazoo, Michigan

400 Irish Juniper

Four times transplanted; Four feet high. Fifty cents each.

200 Rosedales

Two times transplanted. Twenty inches high, thirty-five cents each. A reduction on large orders. All packing free. Address

PINEHURST FARM

R. F. D. No. 5 Station A, **Topeka, Kansas**

The Folding Berry Box

made from Washington spruce. The best box ever offered to fruit-growers. Come from factory ready for use in packages of 250 each. A strong neat box, easily set up. These boxes were widely introduced in 1903, giving universal satisfaction. Send two cent stamp for sample box. For prices and etc., address

R. A. Wright, Excelsior, Minn.

Wholesale and Retail Dealer in Berry Boxes, Crates and Fruit Packages.

FOR SALE
at Reduced Prices

Elberta Peach Trees and one year old Apple Trees. Will sell the lot at greatly reduced prices. Also first class Berkshire Pigs at $5.00 each.

WILL ROCHELLE, R. 5, Jackson, Tenn.

Texas Trees

A hundred varieties of plums; over a hundred of peaches. Fortunes in some new Texas varieties. I have the best for the different sections of the country. Catalogue. I pay express. Steady salesmen wanted.

THE AUSTIN NURSERY
Austin, Texas

LOOK HERE!

Apple Trees, $5.00 per Hundred and up. We offer 20,000 Apple and 6,000 Peach Trees for Spring delivery. Stock is well grown and true to name. Also offer full line Cherry, Pear, Plum and small fruits. Correspondence solicited. Salesmen wanted. **"The Greenwood Nurseries," Dean & Billingsley, Props., Greenwood, Indiana.**

FOR SALE

Greeley Colorado and Highland (Raton, New Mex.) Nurseries. An opportunity for a good man. Extensive interests in other business reason for selling.

The Greeley Nurseries
GREELEY, COLORADO.

5,000 Apple Trees
FOR SALE

At wholesale prices. Also Peach, Pear, Plum and Cherry, Berries, Grapes, Roses, Shrubs, Vines and Evergreens. Everything true to name. Send list of wants for estimate. Catalogue free. **—C. FRANZ & SONS, Cozaddale, Ohio.**

Renew your subscription today.

Illinois Horticultural Society

At the forty-eighth annual meeting of the Illinois State Horticultural Society, held at Champaign, Dec. 16 to 18, the following officers were elected for the ensuing year: President, H. A. Aldrich, Neoga; vice-president, S. N. Black, Clayton; secretary, L. R. Bryant, Princeton; treasurer, J. W. Stanton, Richview. The time and place of holding the next meeting was left to the executive committee.

The reports of the officers showed the Illinois society to be in a flourishing condition. The past season was not a satisfactory one for the growers, but there was no lack of interest, and more fruit trees are being planted every year.

Wednesday afternoon the subject of utilization of cull apples was discussed. Some members were of the opinion that the culls could be profitably worked up into cider, while others were of the opinion that evaporators could be most profitably used. Mr. Dunlap believes that the cull fruit can very profitably be taken from the trees before maturity, thus leaving the first-class fruit with a better opportunity to mature. Immature apples can be evaporated, and while they do not make so good a quality as the mature fruit, a great many are used in this way.

Mr. Jolly had sold his culls early, and believes this is the time to dispose of them, for evaporating or cider purposes. Two years ago, as a result of this method of handling, his orchard netted him $100 per acre. Another member suggested that the cull fruit should be thinned from the tree before the main crop is ripe. Labor is more plentiful then, before the rush of the regular picking season. President Aldrich agreed with this plan, and said the early thinning will relieve the tree to such an extent that it will be better abic to mature fruit buds for the following year's crop.

Mr. Black reported that he had experimented in thinning fruit; had thinned the fruit when small and later when it was almost mature. The early thinning gave best results.

Dean Davenport of the Agricultural College read a paper on "The Development of Illinois Horticuleure," which was full of good points. He said the growers should adopt standard grades and see that they are maintained. This standard will have to be maintained by the dealer, as well as by the packer. He told of a gentleman who wanted some Jonathan apples, and the grocer sent out some Winesaps which were falsely labeled as Jonathans. Because some dealers adopt this policy it is a good plan for the grower to use a package which shall reach the consumer just as it comes from his hands, without having been opened by any middleman. The grower can grade his fruit and properly brand it, with his own name, and the consumer will then know who to hold responsible if all is not right.

"There are families in our own state which eat more bananas than they do apples," said Prof. Davenport, "and this is due principally to the fact that the public is acquainted with the standard grades of bananas. The inferior fruit is not marketed with the good, and one knows what he is buying. The apple growers should do as well in selling their produce. Good apples must not be put with the bad, else all will have to sell as bad fruit. There is much to learn in the marketing of apples, before our Illinois horticulture will be all that it should be."

The discussion of this subject was most interesting, and came up later in the meeting, in the discussion of Prof. Blair's paper on "Apple Packages."

Mr. R. M. Kellogg of Michigan said that manufacturers of different articles brand their products with their names, and in time the reputation of the goods is established; this is capital stock. The farmer loses more than any other producer simply because of the fact that he does not make a reputation for his goods. This is where the profits come: To establish the confidence of the people in what you have to sell, and then see that this confidence is not betrayed. Grow good fruit, pack it well, brand it with your name, and let it sell with your reputation behind it. It will take time to establish a reputation, but the successful man in any line of business will have to do this. And the farmer must come to this same condition.

Mr. E. H. Riehl of North Alton read a paper on "Strawberries," in which he said if good berries are grown there is little danger of over-production; the greatest competition is with the fruit of lower grade. One trouble with the strawberry business is that too many persons rush into it without counting the cost, and the result is inferior fruit, which often breaks prices. In the growing of strawberries different soils cause a great difference in varieties. For instance, the Ruby falls on rich soil while it is a success on clay; Clyde, on the other hand, is a sucess on good, rich land, and a fallure on thin soils.

Mr. Riehl told how he had prepared a strawberry bed for his own use. Three years ago he purchased a farm which had been rented for fifty years, and that means it had run down. The plants were secured in the fall and well heeled in. The the soil was plowed thoroughly and it was plowed again in the spring. As soon as it was in good condition the plants were set. The heeled-in plants were found in excellent condition, with plenty of newly formed roots, which at once pushed into vigorous growth. The plants were put 18 inches apart, in rows three and a half feet apart. An advantage in getting plants in fall and heeling in until spring is that they can be planted just the moment the ground is ready, and will have the old roots covered with little white roots which will be a great held in starting early growth. As soon as runners were formed Mr. Riehl placed them carefully, making the row about one foot wide, with plants six inches apart. Other runners were kept off Before severe freezing weather in fall the bed was well mulched, straw being placed over the plants and manure in the alleys. Some of the straw was removed in the spring. The crop was very fine. As soon as the berries were gathered the rows were barred off and leveled down, manure was again applied, and the second crop was more profitable than the first. See that straw used for mulching is free from seeds . If it is plentiful, use freely, but if scarce, just enough to keep the berries clean is sufficient.

Mr. Riehl was asked if he does not find that a great many weed seeds are introduced with the fresh manure. He said that the seeds will get in, but that by mulching heavily they can be kept down.

The question was asked as to how one could prevent the excessive rooting of runners. Mr. Hartwell replied that Mr. Coe of Wisconsin had said that he had noticed that most of the young plants come from the original parent plant; therefore, as soon as the new runners strike root, he goes through the row and cuts out the original plants.

Mr. Riehl said it was true that most of the runners come from the parent plant, but under his system he does not believe it best to cut out the parent plant. If this is done, the new plants will be weakened, especially in a dry season.

Mr. Perrine said they prevented too excessive setting of plants by widening the row, and then cutting off the plants not wanted. Mr. Reasoner said that after the young plants have become well set the parent plant can be removed in a good growing season, and if the season is dry then one will not need to remove it. Mr. Baxter did not believe the plan to remove the parent plant would be entirely successful; certainly this would not help the situation the second year of the life of the patch.

Mrs. Raymond of Sidney read an excellent paper on "Preparation of Fruits for the Table," which was well received.

R. M. Kellogg of Michigan was called upon for an informal talk on "Strawberry as a Money-Making Proposition." He said he knew of no branch of horticulture which will yield more money than strawberry growing where properly conducted. The business must be conducted on business principles, if success is to be attained. The fact that a crop can be secured the second year often induces many inexperienced persons to rush into the business. Mr. Kellogg told how he would prepare land to grow a model crop of fruit, which was along the line of his address before the meeting of the Missouri State Horticultural Society, as

Many Nurserymen Offer Cheap Trees. Some Nurserymen Offer Large Quantities of Trees.

I OFFER THE BEST TREES

that money, location, and experience can produce. I propagate from best bearing trees. But send me your address and let me tell you all about my stock for Spring shipment.

Write for prices. My Fruit Book is free to all customers, to others 20 cents. It is full of good, wholesome information (no advertising matter). Send for it today.

Nurseries at Carrollton and Perseyville, Ill.

JOHN A. CANNEDY
Lock Box 614 **Carrollton, Ill.**

Nursery Stock for Sale Direct to Customer

No Agents. Apple, Peach, Pear, Plum, Cherry, Apricot, Currant, Gooseberry, Grape Vine, Raspberry, Blackberry, Strawberry plants, etc.; 30,000 Peach, one-third Elberta; Champion, Crawford Early, Crawford Late, Improved Snow Cling, Golden Beauty, Alexander, Foster, Stump, Wonderful, Cap Ede, Indian Free, Indian Cling, Sneed, Alton, Pool's Favorite, Krummel, Salway, Mountain Rose, etc.; 150,000 Strawberry plants, leading varieties at $5.00 per 1,000 F. O. B.; 3 to 4 foot Apple and Peach, straight and healthy, at a very low price. Will make very low prices on Peach. Let me figure your commercial orchard. A fine lot of 5 to 7 foot Apple and Peach, 1 and 2 years old. I pay the freight. Write me before you buy.

Kercheval's Nurseries, Elsberry, Mo.
A. H. Kercheval, Proprietor.
Certificate of Inspection with every shipment.

Fruit Trees

Our stock is first class and prices low. All leading varieties of Apple, Peach, Pear, Plum, Cherry, Apricot or Quince.

Berry Plants

A specialty. Millions of Strawberry, Raspberry and Blackberry. Also Gooseberry, Currant, Grape Vines, Rhubarb and Asparagus. Send us a list of wants and let us make you prices.

W. H. Williamson & Company
Independence, Mo.

CALIFORNIA
Leads the World

In originating new fruits and plants. A postal card will bring you our handsome catalogue describing many of our new fruits, grapes, berries, etc. We make a specialty of sending plants by mail. Write today.—**JURUPA NURSERY CO., Riverside, Cal.**

SEEDLINGS

Nursery or Forest grown. If you want forest tree seedlings of any kind, native ferns, shrubs or evergreens, send for our free price list. Stock is all young and healthy, and list of varieties is complete. Address **PERRY BROS. NURSERY CO., Irving College, Tenn.**

Kansas Home Nursery
and Experimental Grounds

Offer choice trees and plants of all standard varieties, for orchard, small fruits, and ornamentals. Agents wanted on liberal pay.

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Ready to talk for 1904 business. We are, and we'd like to tell you about our new universal spraying machine—The Progress. Don't wait too long if you're after a good agency.

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Successors to Nixon Nozzle and Machine Co. *Dayton, Ohio*

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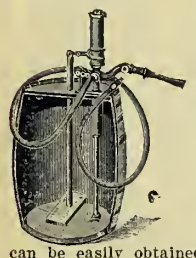

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Two and four-gallon sizes. Made of heavy galvanized iron; also brass. For gardens, orchards, lawns, shrubbery, chicken houses, etc. No continuous pumping. Compressed air device sprays continually. Send $1.50 for sample. Big money for agents. Address D. B. SMITH & CO., Utica, N. Y., U. S. A., Dept. D.

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All kinds seedlings, any size, cheap. Write for wholesale list. 100,000 1 to 2 foot Sycamore $3.40 per 1,000. Want to correspond with planters everywhere.—**Tarlton Nurseries, E. J. Morton, Prop., Tarlton, Tenn.**

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Customers for the best selected lot of Nursery Stock in the West. Catalogues free on application.

reported in the Fruit-Grower for December.

"There is one thing I would urge, and that is that the first year your plants should not be allowed to blossom. Don't allow the buds to open; cut them off, for if the blossoms open the plant will be weakened by reason of the production of pollen. Make an effort to grow the best berries and brand the packages with your name. Get a reputation for your fruit and your packing, and charge for it. The money is made by the top prices received. If you are content to simply plow your soil, set the strawberry plants and just let them grow any way, you had better get a pin hook and go a-fishing."

In explaining his preparation of soil for strawberries, Mr. Kellogg said that he used great quantities of barnyard manure. Mr. Perrine asked if he used any other fertilizer, and Mr. Kellogg said that he used from 400 to 600 pounds of bone meal per acre.

Asked if it was not a rule that the pistillate varieties yield better than the staminates, as a general thing, Mr. Kellogg said that they do; they are not so weakened by excessive pollen production and they stand the drouth better. He plants two rows of pistillate sorts to one row of staminates. Mr. Kellogg was asked how many crops he gets from a plantation, and said if the plants are grown in a hedge row he gets three, but if grown in the matted row he would not try to get more than two corps, and only one if the first crop was a heavy one.

"What are the best varieties?" asked a member.

"Well, now you have got me," replied Mr. Kellogg. "I had almost as soon try to do your courting for you as to try to select varieties of strawberries for you. Each grower must do that for himself. I will say, however, that the old Crescent has made more money for strawberry growers than any other berry ever introduced. Other good ones are Parson's Beauty, Splendid, Haverland, Dunlap, and Uncle Jim."

Mr. Kellogg said that to renew his bed for the second crop he mows the field, allows the leaves to dry and then burns; this is done as soon as picking is over. Then simply cultivate the hedgerow throughout the second summer.

Mr. W. S. Perrine read a paper on "Effect of Spring Frost on Foliage of Trees," which provoked an interesting discussion. Some members believed the injury to foliage was caused by frost, others that the frost had perhaps made the leaves more tender and that spray mixtures had caused damage, while still others were of the opinion that the frost had little to do with it; that the rains had helped to make the spray mixtures injure the foliage. In this discussion the point was brought out that in a wet season spray mixtures are more apt to injure foliage than in a dry one. Also, that spray mixture applied when rain is falling is less apt to injure foliage than where it is applied one day and a rain immediately follows.

Mr. Hinkley was asked as to the dust process, and that that his fruit had been mostly killed by frost, same as that of other growers. As to effect of dust spray on foliage, he could not say that it had been beneficial or harmful this year. It seems to be effective against insects, but it is a question as to whether the dust, as heretofore prepared, is as effective as the liquid as a fungicide.

Prof. Crandall said that the experiment station had tested the liquid and dust spray, treating about 100 trees with each process. About the middle of September the difference was very apparent. On the liquid-sprayed trees the foliage was retained, while on the trees left unsprayed and those sprayed with the dust there were very few leaves left. Apple scab was much more prevalent on the dust-sprayed trees than on those sprayed with liquid—in fact, the dust-sprayed trees were no better than those not sprayed at all, so far as fungous diseases are concerned.

Mr. Dunlap recommended that growers go slow in adopting the dust process; better let the experiment stations do the experimenting.

Mr. H. T. Thompson recommended a list of plums, the native sorts being the ones which have proved most profitable. Mr. Baxter had found Wild Goose very profitable. Mr. Riehl recommended the Milton as one of the best early plums.

One of the most important papers of the meeting was Prof. Blair's discussion of "The Apple Package." He said the package in which fruit is marketed is important, for the reason that the best fruit will not bring the best prices if not properly packed. The kind of packages one shall use depend upon how the fruit is to be transported, how and where it is to be marketed, the quality and character of the fruit, and the relative cost of the packages. The barrel has been the popular package heretofore, but material has become too scarce and high. The barrel will be hard to supplant in Illinois, however, because of the fact that most of the fruit grown is for wholesale markets. Tight barrels are best; fruit in ventilated barrels wilts and shrivels. Boxes to be used must be light and strong, as well as light in color; the red and yellow woods impart a disagreeable flavor to the fruit. The use of the box, too, will require that a better quality of fruit be grown, for poor fruit will sell better in barrels than in boxes.

"It can be set down as an axiom," said Prof. Blair, "that the package will sell the fruit, provided it is good fruit. But the package will not sell poor fruit."

The speaker called attention to the fact that it will require more expert packing to pack apples in boxes than in barrels, and this labor cannot always be secured. He quoted from a Virginia grower who said his fruit in boxes brought from 30 to 50 per cent more in boxes than in barrels, but the skilled labor to properly pack the boxes was hard to secure. Prof. Blair had packed some fancy summer apples, such as Benoni and Sherwood's Favorite in boxes and sold them to good advantage on Chicago market.

Prof. Blair had gone on the Chicago market and bought sample boxes of California, Washington, Oregon, Idaho and Colorado apples of different varieties. He also had some Illinois Jonathan packed in boxes. These boxes varied in dimensions, but all held approximately a bushel. The price paid for them on open market varied from $1.75 to $3.00 per box. These boxes were an excellent object lesson. The weak point with the Illinois Jonathans was that the fruit was picked before fully colored, and the packing was irregular—that is, there were too many sizes on apples in one row. Prof. Blair gave it as his opinion that the time had come when growers should consider the matter of having their own storage houses and sell their fruit direct to consumers.

When asked how the Colorado growers get their fruit better colored than the Illinois growers, Prof. Blair said he believed it was due to the fact that the Westerners have a more judicious system of pruning. The color is absolutely essential in selling apples in boxes.

Prof. Lloyd had a paper telling of the development of commercial gardening in this country, and W. S. Ross of Alma presented a paper on "Gem Melans for Profit." Mr. Ross has been growing these melons for twenty years and said the first and most important point is to get good and reliable seed. Burpee's Netted Gem or Rocky Ford is the best seed, and the seeds should be taken from melons grown especially for seeds. The selection of proper soil is another important matter. Rich bottom soil should be avoided, for the melons will grow too large and will lack flavor. Moderately rich soil is best; best fertilizers are barnyard manure, with potash added. Liquid manure, if used freely, will keep the cucumber bugs away. When all danger from bugs is past, thin the plants to two to the hill. For aphis, watch the plants carefully, and at the first appearance of the insect burn the infested vine.

Prof. Crandall read a most excellent paper on "Injury of the Apple by Plum Curculio," and the Fruit-Grower will publish an abstract of this paper later. Prof. Forbes was asked as to the advisability of spraying to kill plum curculio, and said he had found that in the early life of this insect it does feed about the tree a little, and then the grower can spray and kill some of them. By spraying at the proper time he had protected against 55 per cent of injury by curculio. Orchards removed from woods are less apt to be attacked by curculio than are those adjacent to the forest trees.

Mr. Schermerhorn reported that he had a crop of peaches in 1901 on an orchard adjoining an apple orchard. The next year he had an apple crop, and the apples were attacked by the plum curculio in great numbers.

Prof. Forbes told of another case along this line, where apples and peaches were planted in alternate rows. From one-half bushel of apples picked from these trees he had secured forty-one living curculio. This would make a great number in an orchard, and is one of the reasons why mixed planting is not advisable.

The display of fruit at the meeting was very creditable, considering the year. The meeting was held in the agricultural building, the machinery exhibit was in the same building, and on the whole the meeting was very successful.

WANTED — Experienced orchardist, man and wife, competent to manage the orchard and poultry in connection. Will give interest. Address Dr. Geo. P. Holmes, Commercial bldg., St. Louis, Missouri.

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is absolutely the earliest of all Dewberries. The large, finely flavored fruit will reach any thirty-six hour market in good condition. The vines are vigorous, stand drouth well, and produce large crops every year.

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Kansas Fruit-Growers Meet

The thirty-seventh annual meeting of the Kansas State Horticultural Society was held in the rooms of the society at Topeka, Dec. 29 to 31, and was perhaps the most interesting one held in recent years. The attendance was up to the average and the discussion of the various subjects on the program was more interesting than usual. And, to make the meeting more of a success, the entire program was completed, with ample time to discuss every subject. Too often it occurs that the program is too crowded, leaving little time for discussion. But the Kansas program this year was a most pleasing exception to this rule.

The meeting was called to order Tuesday morning by President Wellhouse. The first session was consumed with the reports of the officers. These officers include one member of the board of trustees from each of the congressional districts. The reports from these members were of especial interest, on account of the unusual conditions which prevailed last season. For instance, Mr. Alexander of Norton, reported that on May 1 the ground in his section was covered with three inches of snow. The reports from all parts of the state were to the effect that fruit buds matured well last fall and are in excellent condition, with prospects good for a crop of all kinds of fruit.

Dr. G. Bohrer of Rice County read a good paper on "Shade Trees." Dr. Bohrer lives in a section of the state where the selection of trees for shade purposes is an important matter, and his paper was valuable on this account. He made a plea for more trees about the home, about the school houses and along the highways of the state. He would not plant large-growing trees along the roadside, but such dwarf-growers as Russian mulberry, osage orange, etc. Dr. Bohrer said he had several miles of osage hedge, which he keeps cut back to four feet in height, except that about every ten feet one tree is allowed to grow. In this way he gets several hundred posts and a good supply of fuel every year, The American elm was especially recommended as a good tree for home, school and church grounds. The catapla is often recommended, but Dr. Bohrer said it will not succeed in all parts of the state, and in dry locations it is not at all satisfactory.

Mr. J. W. Robison: "How about planting the LeConte and Garber pear trees along the roadside? They are dwarfish growers and ought to be all right. The Marianna plum might also be used for this purpose. It is of no value for fruit, but on the theory that everything has some use it ought to be good for roadside planting. I would strongly advise against planting elm or cottonwood trees along the highway. In some parts of the state, where there is gumbo soil, the roads would never dry, with trees of this kind planted to shade the ground."

Mr. Edwin Snyder would not plant road trees at all. At least not in Eastern Kansas. The roads will not dry quickly enough. Mr. Snyder said that in planting shade trees he believed that one can afford to plant some nut-bearing trees. The planter may not live to get any returns, but future generations will. He had planted 1,000 pecan trees twelve years ago. A neighbor asked him when they would bear, and the reply was in about twenty years. And then the neighbor asked why he had planted them, as though one should live for himself alone. These trees are now about fifteen feet high, and have never borne any nuts.

"I agree with those who would plant our school grounds. A great many of our school grounds are the most desolate places in all the neighborhood, and it is a shame that it is so. I recall that once when I was a member of the school board in our district the board sent out notices that on a certain day the patrons of the school would meet at the school house and take steps to plant some shade trees and otherwise beautify the grounds. On the appointed day only the members of the board were there. Not another soul came. We got even with them, however, by doing the work ourselves and then each presented a bill for $2.50 for his day's labor, and the district had to pay it."

"Were you re-elected?" asked a member.

"No, we were not re-elected, but we had the trees planted all right, and they are there today," replied Mr. Snyder..

Mr. Snyder recommended a list of shade trees he would plant, and added that he did not think he would plant the catalpa. "I planted some once," he said, "and the trees grow so crooked that when I cut them down the trunk of the trees could not strike the ground at all."

Mr. Kellogg, of the forestry division of the Department of Agriculture, who has been working in Western Kansas, was called upon for his views as to timber planting in that part of the state. Mr. Kellogg said that a great deal can be done in Western Kansas in the way of tree planting, if the right kinds of trees are planted. The selection of species is all important, but if the right trees are planted and given good care, one can get trees and good trees, too, anywhere in Kansas. For high locations red cedar, osage orange, honey locust and Russian mulberry are perhaps the best. Red cedar is decidedly the tree for all kinds of locations in Western Kansas. Honey locust is one of the best as a shade tree, but is not as good as the black locust for timber. The American elm is a most excellent tree, but it will need more care than the others, although in most sections it will succeed with good care and attention.

"As to the cottonwood tree, which has been highly recommended by some," said Mr. Kellogg, "I would call your attention to one thing: The cottonwood is a moisture-loving tree, and where it can be grown you can also get other and better trees to grow. If I could grow the cottonwood, then, it would be evidence to me that there was enough moisture in the ground to grow better trees, and I would plant these instead."

Mr. Kellogg was asked as to the value of Carolina poplar, and said he regards it as simply an Eastern-grown cottonwood. It is practically the same thing. When his attention was called to the fact that it did not produce the seed balls, which are so objectionable, he said that the regular cottonwoods can be selected from non-seed bearing parents, too, so that they will be as desirable on this score.

Someone asked about the eucalyptus tree, and Mr. Kellogg said an article in the Saturday Evening Post had stirred people up on this tree, and had done a great deal of harm. The eucalyptus tree is a good one for sections where it will grow, but Kansas is not one of those places. It thrives in a very warm climate, and often makes ten feet of growth in a single season, showing that it is really a tropical tree. It will not do in Kansas."

Mr. Asa Chandler was on the program for a paper on "Commercial Gardening," but was not present, and Mr. Whitney of Topeka was called upon to open the discussion on this subject. Mr. Whitney reported that last year was a disastrous one on the gardeners near Topeka, because of the fact that the grounds of many of them were flooded by the high waters in May and June. The frost killed many of the early gardens, and then the floods washed some of them away, but after the waters receded crops were planted, matured and sold well. A feature was the marketing of spring crops all through the summer, thus changing the season somewhat.

Mr. Barnes said Mr. Whitney had cut asparagus under eighteen inches of water during the flood, and that gentleman admitted that this was so. Asparagus and horse radish were the only permanent crops grown by the gardeners which were not injured by the floods. Some of his asparagus beds filled up with soil to the depth of a foot, yet the asparagus shoots pushed through and were all right.

Mr. Dixon said that asparagus had done well with him last season. From three-fourths of an acre of asparagus he had sold more produce than from seventy acres of wheat adjoining.

C. V. Holsinger reported that after the frosts had killed considerable of the fruit they had put in quite a lot of tomatoes, which made a good crop. Sold to the canning factory at 30 cents per bushel.

Secretary Barnes asked why it was that so few good melons are grown in Kansas. What is the matter?

Mr. Dixon said that the past two seasons have been too cold and wet to produce good melons. Mr. Whitney gave it as his opinion that Kansas soils will not produce as fine flavored melons as are shipped into the state from Rocky Ford and other Colorado points.

Mr. Holman, of Leavenworth County, reported that his melons had been unusually fine last season. He grows quantities of cantaloupes and watermelons every year, and they are as fine as Colorado ever grew. He puts them on the hillsides and has netted as high as $300 per acre from them. Cold rains of last spring were an injury to the watermelons especially.

Mr. Cutter said he never fails to have melons, although last season was a hard one to grow good ones. The melons rotted off at the ground, but finally a good stand was secured. The striped bugs were a serious pest. The most effective way to get rid of them was to have boys pick them off by hand. This was hard work, but it paid. Mr. Cutter grows from six to ten acres of melons a year, and seldom fails to net $100 an acre. For watermelons he

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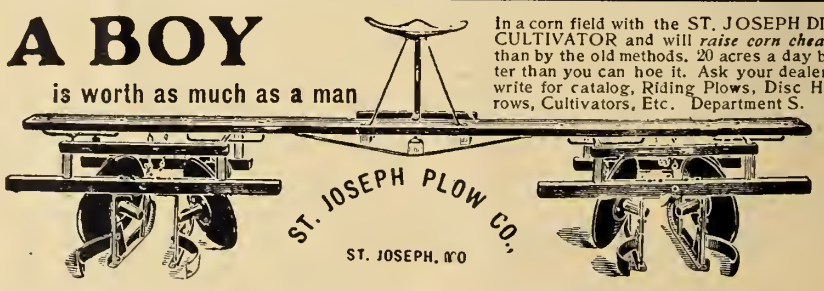

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Protected by sixteen patents. The latest improved. Made in five sizes, for all sizes of stumps and trees. Fully warranted. Catalogue free. Dept. D.
W. Smith Grubber Co., La Crosse, Wis.

wants the soil well matured, but would not manure the soil for cantaloupes.

Mr. Kenoyer defended the Kansas melon, and said it was as good as any grown in Colorado. The past season he had less than an acre of Netted Gem melons, with only about half a stand, yet he had sold over $118 worth of melons. He fights the melon aphis, which is the most serious pest, by growing some other crop among the melons. Last season, for instance, he planted early corn. When the corn was about six inches high he planted the melons. The corn aphis attacked the corn and thus attracted the ladybugs¼ which prey upon them. The ladybugs will be found where their natural prey is to be found, and they came to where the corn aphis were, in great numbers. As soon as the ladybugs came, Mr. Kenoyer said, he cut the corn, and the corn aphis died. Then the ladybugs had to look to the melon aphis as their natupral prey and the bugs were then so numerous that the melon aphis were held in check.

Mr. Burri of Leavenworth County had planted three-fourths of an acre of melons; the first crop was taken by aphis, the rain destroyed the second planting, but the third planting grew and over $200 worth of melons were sold from three-fourths of an acre.

Mr. Barnes reported that he had sold Netted Gem melons for as much as $10 per barrel, and the quality was up to that of the Colorado melons. Growers must be careful to get good seeds. This is one of the secrets of the success of Colorado melon growers. They see to it that their seed is pure.

Major Holsinger called attention to the fact that a warm, dry soil is essential to success in growing melons. The suggestion was made further, by a delegate, that the best way to fight the melon aphis is to watch carefully for its appearance. Then pile straw on the infested hills and burn them.

Mr. Holman read a most excellent paper on "A New Way of Growing Celery," which the Fruit-Grower will present in full later.

Prof. A. Dickens of the Kansas Agricultural College reported concerning "Experimental Horticulture." Prof. Dickens said the past season was hard on the experimenter, as well as on the commercial grower. Some interesting observations had been made of experimental work during the year. Celery was found to be improved where fertilized with nitrate of soda. An application of 400 pounds per acre was sufficient, and even 200 pounds per acre was helpful. Lettuce, too, was improved by the application of nitrate of soda. Cleft grafting had been found better than budding to use in propagating the persimmon. Japanese persimmons are not hardy at Manhattan, being killed to the ground. The American persimmon deserves more attention that it has received.

Tuesday night Prof. D. E. Lantz told of the efforts which were made to secure the enactment of a law for the protection of the birds, by the last legislature. The bill failed to become a law chiefly because it provided for the appointment of a game warden, as was supposed, and the members of the legislature were opposed to this. The new game law protects some birds, but it is still hoped to secure the adoption of a law which shall protect more f them. Notwithstanding the failure of Kansas to enact the desired legislation, Prof. Lantz said there was much cause for encouragement in the fact that the work is being pushed everywhere, and nine states adopted new laws for the protection of birds last winter. Prof. Lantz said that some of the hawks and owls ought by all means to be protected, to help hold in check mice and other pests. He told of an orchard of 480 acres, in good condition, which was examined not long ago, and it was found that about five thousand of the trees had been girdled by mice. The snort-tailed mouse was the chief offender, for since the destruction of so many of the owls and hawks these rodents have multiplied wonderfully, until they have become a serious pest.

Following Prof. Lantz, Prof. L. L. Dyche of Lawrence talked about the English sparrow, which was condemned very severely. This bird was introduced in America in 1850, he said, by a gentleman who brought eight pairs from Europe. The next year this gentleman went back and brought over 100 pairs more. It was thought at that time that the English sparrows would keep the insects in check. There were many other importations after this, and in 1885 33 states and territories were well stocked. Then the government began an investigation to ascertain if the sparrows were really a benefit. To show how rapidly the birds increase in numbers, Prof. Dyche said he had watched a nest one summer and found that one pair had raised 24 young during the season. The number of eggs varied from five to seven, the mother bird set for thirteen days, fed the young for about ten days more, and then laid eggs for another setting.

"It has been claimed," said Prof. Dyche, "that the English sparrow is an insect-eating bird. I conducted an investigation and found this is not altogether true. In the cities I found that about half the food of the sparrow consisted of insects, but only about half of these are injurious insects, the others being beneficial. As a rule, the sparrow is a grain-eating bird, eating the particular kind of grain which is most plentiful where he happens to be. The birds will eat fruit when fruit is to be had, and in the cities, where the sparrows seem to be more numerous than in the country, it is almost impossible to raise a garden on account of the work of this pest."

In answer to a question, Prof. Dyche said that screech owls feed upon the sparrows, and should be protected. All owls and most of the hawks should be protected because of the work they do in helping to keep the sparrow in check.

Prof. Popenoe talked of some of the fungous diseases, with particular reference to the crown gall. He told of an experiment that is being conducted at the Kansas Experiment Station, in which some trees with crown gall were planted alongside of some which were free from the galls. The trees have now been set three years, and no difference can be observed between them, and the trees which were free from infection now have the galls on the roots.

Prof. Popenoe was asked as to the growth the trees with galls had made, whether they had made a normal growth. He said they had, and that one would not be able to tell from the growth that the trees had galls on the roots at all.

He was asked as to whether trees should be propagated from other trees which were affected with galls. He said that he did not know that it was positively harmful to cut scions from these trees, but did not believe it was advisable to do so. Still he had found one nurseryman in Kansas planting in his scion orchard trees which were rejected from his shipping stock on account of the roots being infected with crown gall.

In answer to a question, Prof. Popenoe said he would not recommend the planting of cedar trees near apple orchards, on acount of the fact that the rust from the cedars will injure the apple trees.

A member asked Prof. Popenoe if he would reject a lot of apple trees because some of the roots were infested with woolly aphis. He replied that he would not; that the insect can be controlled.

Mr. Murray of Missouri said that people got unduly excited about crown gall and woolly aphis; both are old pests. In Southern locations, where the woolly aphis winters in the adult state, the insect sometimes becomes a serious pest, but not in Northern orchards.

Geo. Holsinger opened the discussion of the "Strawberry." He told of the freeze of last spring and the effect upon the strawberry crop. Mr. Holsinger said that in planting strawberries they use a Planet Junior cultivator immediately after the plants are set. Have discarded the weeder for this purpose, on acount of the teeth tearing out too many plants. After cultivating the rows well throughout the summer, he would mulch well in the fall, using straw from three or four acres of wheat on one acre of berry plants. Put this mulch on as soon as the ground is frozen. The discussion of the varieties and their behavior in the past unusual season was very interesting. Warfield still seems the best money maker. Splendid was another good one last season. Windsor Chief did well, Nic Ohmer and Clyde were both badly frozen, while Parker Earle foliage rusted badly. Aroma is a good late berry, and so are William Belt and Gandy.

After the fruit is picked, Mr. Holsinger said he would rake the straw from the field and burn, to destroy insects. Would not try to burn on the berry plants. After this cut the rows down with a plow to a width of six inches and thin the plants in the row with a hoe. He would not try to renew the bed after the second year.

F. W. Dixon: "Crescent, Warfield, Splendid and several other sorts did well in spite of the freeze. Gandy and Sample, while not nearly out in bloom at time of freeze, were worse killed than other varieties which were nearly out. The imperfect bloomers all seemed to stand the freeze better than the perfect-blooming varieties."

Mr. Kenoyer suggested that location seemed to have more to do with the injury than the variety. As to varieties, William Belt is a complete failure with him, the foliage rusting worse than that of any other variety.

Mr. W. D. Cellar said that on the hillsides west of Kansas City there seemed to be little difference in varieties after the freeze. The condition of the plants at the time of the freeze seemed to have more to do with the results of the freeze.

M. E. Chandler and Gerald Holsinger gave reports of their experience, which left them all at sea. The latter, however, said that his experience convinced him that the very early varie-

(Continued on Page 28.)

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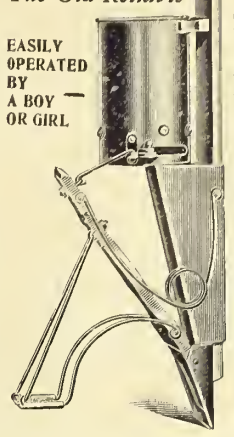
The Old Reliable
EASILY OPERATED BY A BOY OR GIRL



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A sheet spring brass "cut-off" that does its work perfectly; does not injure the grain and never wears out. This planter is better made, has reached a larger sale, has proven more popular and has given better satisfaction than any other hand planter ever manufactured. Sold in forty-six states and territories of the Union, also seven foreign countries. Send for descriptive circulars.
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Fairfield Strawberry
12 plants by mail, 50c; 100, by express, $1.25; 1,000, by express, $6.00. The Best Early Berry, 3 to 8 days ahead of Michel's Early. Twice as large and twice as productive.

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12 plants, by mail, $1.00; 100, by express, $2.50; 1,000, by express, $10.00. The latest, 5 days later than GANDY, picks to 4th of July. Produced in fruit, $666.96 per acre.

WINTER BANANA APPLE—A Wonderfully Fine Winter Apple, very young bearer of the Finest Fruit. Better send for circular about it and the strawberries; better still, send for 3 Trees, 1 year, by mail, for $1.00.

WEST JERSEY NURSERY
STANTON B. COLE, Bridgeton, N. J.

Look Here! *BARGAINS BARGAINS*
First class Apple Trees for sale at less than cost of the growing. None finer, none better. Every one true to name and fully up to grade; no disease; certificate of inspection with every shipment. Send me your want list at once. The following prices stand good while stock lasts—first come first served. These prices are on Apple only, but a general line of Nursery Stock to offer in connection.
50,000 First-class Apple Trees, 2-year-old, 5 to 7 feet 4c
60,000 First-class Trees, 2-yr.-old, 4-5 ft... 3c
20,000 First-class Trees, 2-yr-old, 3-4 ft.... 2½c
10,000 Second-class Trees, 2-yr.-old, 2-3 ft.. 1¼c
20,000 First-class Trees, 1-yr.-old, 3-4 ft... 3c
60,000 First-class Trees, 1-yr.-old, 2-3 ft... 2½c
10,000 First-class Trees, 1-yr.-old, 1-2 ft... 1¼c
HILL TOP NURSERY
G. L. Christian, Prop., Hill Top, Boone Co., Ark.

60 VARIETIES
Strawberry Plants
None Better or Cheaper.
Spearfish, South Dakota, June 15, 1903.
H. W. Henry, La Porte, Indiana. Dear Sir: The 38,000 Strawberry plants I got of you this spring was the best large lot of plants I ever bought, and I buy every year. They are growing beautifully. Yours truly, F. L. COOK, Superintendent State Normal School.
These plants were shipped 800 miles, and this is the verdict of all my customers, that they get the best plants grown, for less money than from any other plant grower. Try and Be Convinced.
Send Now for 1904 Catalogue.
A general line of Small Fruit Plants and Nursery Stock.
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And Berry Growing has been my Specialty for more than 25 years. 40 varieties of the best New and Standard Varieties, vigorous, heavy rooted and true to name. THE NEW STRAWBERRY that I introduced last season, proved a winner again the past season. It will pay you to plant my plants. They grow and produce large crops of big berries. Catalogue sent free. Write today. JOHN W. HALL, Marion Station, Md.

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One well-known firm writes to us thus: "We like your manner of doing business." Our trees are healthy, pure and up-to-date. We sell stock for cash, exchange trees for South Missouri land, furnish trees on the crop plan. Price list free.
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Catalogue free. Prices, sorts as low as $1.25. All kinds of berry plants.—
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STRAWBERRY PLANTS
Best varieties. Fair prices. Send for circular and price list.
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MANUFACTURED AND SOLD BY
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Important Decision

Black Ben Davis and Gano NOT Identical

Additional Evidence Shows Conclusively that BLACK BEN DAVIS Originated as a SEEDLING in Washington Co., Ark., and that it and Gano are SEPARATE and DISTINCT VARIETIES.

VAN BUREN, ARK., JAN. 14, 1904.—TO THE ARKANSAS STATE HORTICULTURAL SOCIETY.—Gentlemen: Your committee appointed to investigate the origin of Black Ben Davis apple and the claim of some horticulturists that the apple is identical with the Gano, respectfully beg leave to report as follows:

We are thoroughly convinced, after a rigid investigation of the facts that the **Black Ben Davis originated in Washington County, Arkansas,** on a farm owned by Alexander Black, commonly known as the "Parson Black Farm;" that while it is of the Ben Davis type and has some of the characteristics of the apple known as Gano it is a **separate** and **distinct variety.**

In substantiation of this opinion we herewith submit the following testimony, which testimony we feel certain has never been presented to any committee or body of horticulturists before, and that if this testimony had been secured by the Missouri Horticultural Committee their report would have been in accordance with our conclusions.

We ask that this testimony be filed with these findings as a part of this report. Respectfully submitted,

W. G. VINCENHELLER
A. W. POOLE
J. E. REYNOLDS
} Committee

At the Annual Meeting of the Arkansas State Horticultural Society held at Van Buren, Ark., Jan. 12, 13, 14, 1904, a motion was made and carried "That a committee of three be appointed to investigate the origin of the Black Ben Davis and its relation to Gano, and to report to the Asssociation at its pleasure."

The President appointed Prof. W. G. Vincenheller, Director of the Ark. Experiment Station, Fayetteville; A. W. Poole, Ozark; J. E. Reynolds, Maple. At the morning session. Jan. 14, the committee submitted their report, together with the evidence, all of which was adopted, with only one dissenting vote.

The Committee filed with other evidence, an Abstract of Title showing that "Parson" Alexander Black filed his homestead entry on Sept. 9, 1869; Patent was granted him from U. S. Government on Nov. 6, 1874; Alexander Black sold to J. S. Eally, Dec. 3, 1877; J. S. Eally sold to J. D. Moore; Moore sold to J. F. Reagan, March 8, 1883; J. F. Reagan sold to Nathan S. Thomas, April 11, 1887. Mr. Thomas has lived continuously on the old Black homestead ever since.

This Abstract shows every owner of the old Black homestead from the time of its first settlement to the present time. The statements submitted below show conclusively (if any evidence in addition to the statements of Mr. and Mrs. Reagan is needed) that **the only fruit trees ever planted on the Black farm** were 100 apple trees planted by Alexander Black in 1870 and later, **three or four years after the Black Ben Davis seedling came up,** another small orchard, which was planted by Mr. Reagan. The trees planted by Mr. Black were thirteen years old and in full bearing when Mr. Reagan moved on the place.

Attention was called to two very important facts, appearing in the evidence submitted: First, that the original Black Ben Davis tree came up **within 6 ft. of a cedar tree;** had anyone been planting a fruit tree, as some have claimed was the case with B. B. D., certainly they would not have selected such a location. Second, even the seed of the original tree is accounted for by Mr. and Mrs. Reagan's statement that their predecessors were in the habit of preparing, in the shade of the cedar tree, their apples for drying, cooking, etc. The first fact seems to have been lost sight of in a previous investigation and the second was not discovered as Mr. and Mrs. Reagan were then living in the Ind. Ter. and efforts to locate them had been unsuccessful.

THE EVIDENCE

Statement of Mrs. J. F. Reagan.—I was born and raised near Rhea, Washington county, Ark. My maiden name was Holt. My father was a nurseryman and is still living. He began the nursery business early after the war, about the second year after the war. At that time I did not know of any fruit tree agents, had never seen or heard of one and didn't know there was such a thing. I assisted my father in making grafts and was often in the nursery and I know a seedling tree from a grafted tree. We bought the farm known as the Parson Black farm from John D. Moore, and moved to the place in 1883. We lived there four years, leaving there in the spring of [illegible] Board on Mr. Bain's farm near Bloom and from [illegible] one from

Statement of D. K. Holt.—I went to growing nursery stock in Washington county soon after the war. I cut my scions from such trees as were then growing in the neighborhood. I sold the trees to Parson Black that he planted on his homestead in 1870. **I never had seen any apple like the seedling that afterwards grew on the Black farm.** I sold Mr. Black 1n0 trees.

Statement of Widow of J. S. Eally.—We lived on the Parson Black place for about one month. It was in July, or June and July, and there were no trees planted on the place while we were on it.

Statement of B. L. Hatchett.—EVANSVILLE, ARK., JAN. 8, 1904.—Col. W. G. Vincenheller, Fayetteville, Ark.: Am sorry I can't be with you at Van Buren. A few words concerning Black Ben Davis: It is positively a seedling that originated on Mr. Black's farm and the trees

Statement of W. S. Jull.—My home is in Springfield, Mo. My business is commission and produce. While on the Chicago market I received apples from Mr. Winans located at Seymour, and among these were Black Ben Davis. They resembled over-grown, fancy, highly colored Jonathan more than anything else. The Ganos which are received from Illinois, Missouri and the Pacific coast, are more striped, and white spots very pronounced, which makes them a very handsome apple, especially when put in boxes. We can easily distinguish the two varieties from a commercial standpoint; the Gano will sell usually on a par with the Ben Davis and Missouri Pippin, while **Black Ben Davis** and Jonathan are taken for **fancy fruit stand apples.**—W. S. JULL.

Extracts from Apple FACTS and Experience

Published Feb., 1903

Also several interesting letters of later date, along the same line.

PROF. J. C. WHITTEN, Chairman of Black B. Davis-Gano Committee, Columbia Mo., Dec. 11, '03: Enclosed please find a copy of the report of the committee on Black Ben Davis and Gano. . . The object of the investigations was to secure and preserve for the horticultural society any data concerning the origin and history of Black Ben Davis and Gano, that might have any bearing upon the interesting subject of the origin of the varieties, before the known facts concerning their early propagation and dissemination should be forgotten. Throughout the investigation this phase of the subject has been kept in mind, in the same spirit in which a botanist might trace the history of a cultivated plant. . . . This, in the judgment of the committee, is the spirit in which the report should be regarded by all in any way interested. . . . The findings of the committee certainly do not warrant any attempt to make capital out of the report, nor do they place those who believe Black Ben Davis and Gano are two separate varieties in any other than a perfectly honorable light. As stated in the report, Black Ben Davis and Gano (from the nature of their occurrence and early propagation) were honestly regarded as being two distinct varieties, and while the findings of the committee failed to concur in this opinion, time will eventually substantiate or disprove the soundness of their conclusions.

As chairman of the committee I wish to take this opportunity to express sincere thanks to the introducers of Black Ben Davis for the aid which they have afforded the committee in obtaining facts concerning the early history of this apple. The honorable manner in which they put their notes and other data in the hands of the committee and in which they offered every facility in their possession for a fair and impartial study of both sides of the matter, is convincing evidence of their integrity and honesty of purpose.

Later, Dec. 26, '03: I shall certainly be glad to receive at any time any additional information which you may have concerning this (Black Ben Davis) matter. I am always open to the reception of evidence and glad to get it. . . . Whatever position you find it necessary to take in this matter I **recognize as your professional right.** Any disagreement with the report of committee will not be taken by me as at all personal, but as necessary to your own defense from injustice. I shall look with as much interest for evidence that tends to confirm the one side as the other.

He Made Ark. Apples Famous.—W. G. Vincenheller, **Ark. Exp. St'n,** 1900: Had supposed Black Ben D. was only Gano—until investigated. . . Another point: Black B. D. is less subject to bitter rot than most other sorts.

Later, 1901: Black B. D. is in high favor; several growers here, since seeing it fruiting, will plant it entirely for the Ben D. type. . . Book us for 10,000 one-year trees. . . We shall have a model orchard of finest varieties. Shall plant entire orchard B. B. D., 40 feet each way, and fill in both ways with Champion, Jonathan, G. Golden—making trees 20 x 20, then cut out.

Later, Dec. 28, '02.—Have at last located Mr. Reagan and wife; the latter was a Holt, living on the old place where the original Black Ben Davis grew. She will be able to give evidence that your Mr. C. M. Stark never succeeded in obtaining. Mrs. Reagan first called attention to the superiority of Black Ben and insisted that it should be propagated and but for her, this valuable variety would have been lost to the horticultural world. I think Mr. Reagan and wife can settle this matter so it will stand for all ages. Will see them soon as possible, get evidence and submit to you.

Later, Telegram from Prof. Vincenheller, Jan. 5, '04: Have stump of original **Black Ben Davis SEEDLING.** Mrs. Reagan located within one foot: two and one-half feet below surface.

PROF. H. E. VAN DEMAN, ex-U. S. Pomologist, Washington, D.C., Dec. 17, '03.—The report of the committee declaring Black Ben Davis and Gano identical is a great surprise. This report does not alter my opinion in the least, as I saw the trees in bearing in Ark. Had I not seen them so it would have weight. My own belief, from seeing the two kinds in bearing in the same vicinity, was that Black Ben Davis was as much redder than Gano as the latter is redder than Ben Davis, and this will continue to be my opinion until I see reason to change it. The trees, however, will do the talking from now on, and will tell the story just as it is.

Later, Jan. 1, 1904: It is my belief that the time will come when the decision of the Mo. Society regarding B. B. Davis and Gano will be officially reversed. The committee will eventually have to acknowledge that the committee was mistaken as to B. B. Davis not having its origin as a seedling on the Parson Black farm in Ark. There is one thing I want to impress on you. It is this: As the two kinds have been declared one there will be scions and trees of Black B. Davis labeled Gano and when they produce fruit, it will be called Gano, when it is not. Those who may be somewhat doubtful on the subject and think the Black Ben Davis may be a little better, and yet anxious to do you an injury, will take pains to get the B. B. D. stock and label it Gano, [We have evidence that this has already been done.—STARK BRO'S.] and then show the fruit and say, "I told you so." Then some may, in all honesty, label their Gano stock Black Ben Davis for the sake of [illegible] will mix all the stock and some [illegible]

FRANK FEMMONS, Ahwahnee, Calif., Dec. 25, '03.—My interest in Black Ben Davis is not a small one. The desire to see the best varieties introduced in the orchards of the whole country and my friendship for you, who I believe are doing more than any other nurseryman in that direction, prompts me to do all I can in aid of the good work. From one view, it seems to be unfortunate that Ben Davis divides into so many strains and variations; however, this is not a weakness; out of it are coming some of our best commercial varieties; out of it has come Black Ben Davis and I extend a hand to Bro. Winans and I hope to help uphold the standard of the **"Royal King of the Ben Davis family."** Have no doubt of final triumph.

Later, Dec. 29, 1903.—I first planted Gano about 12 years ago. Their growth was not so fine as some other varieties, but the color and general appearance of their first fruit pleased me and I began watching it carefully and year by year put some of it aside for comparison. I found it varied greatly one year with another in size, color and keeping; it has steadily lost in my estimation and I finally grafted over all but one tree which was kept for variety. Since then I have received scions of Gano from two other sources; one of them had some fruit the past season. Two or three specimens of it would have passed in color for B. B. D. The others all showed more or less stripes and all showed the peculiar formation of the basin. The fruiting of the grafts was two years more tardy than I have known B. B. D. under similar conditions. The other grafts should have borne the past year, but did not bloom. Some years my old Gano tree is very full, others but few.

I first received scions of Black Ben Davis and top grafted them in the spring of 1898. They made strong, sturdy growth and fruited in 1899. I was delighted with it. Their keeping was fully equal or better than Ben Davis. The next year showed a greater improvement in size and general appearance. I began top working it to many other trees and I now regret that I did not work farther in that direction. Every year it has produced a full crop and maintains its high character in strong, healthy growth, beauty and handling quality of its fruit, in the satisfaction it gives wherever seen and tested and the promise it gives for the future. In the center of the tree they are sometimes lighter in color, but as yet I have seen none that were striped. The fact that Gano under California conditions has proven of but medium or uncertain quality, while B. B. D., under identical conditions, has been showing itself one of our finest apple production, seems to me conclusive proof that they are from separate and distinct though related parentage. From my experience here, I have no possible doubt of the distinctness of the two apples, nor of the great superiority of the Black Ben Davis as a commercial variety.—**Frank Femmons.**

Twigs with leaves attached and cut from 2-yr. trees, of 4 sorts, each twig growing with exactly the same exposures, etc., were sent Prof. Beale for microscopic examination. The 4 twigs, Ben Davis, Black Ben Davis, Gano, Givens (apparently a Ben Davis sdlg.), were marked respectively B 1, B 2, B 3, B 4. Prof. Beale did not then, nor does he to this day, know the identity of any one of the 4 sorts.

Firmest, hardest, stiffest leaf . . . drouth-resisting, fungus-resisting.—From **Prof. W. J. Beale,** Mich. Exp. St'n, Agric'l College P. O., Mich., Oct. 8, 1902. In answering questions concerning the 4 apple twigs, one should be very cautious. To determine the relative structure microscopically is not so easy as might at first be supposed.

In feeling of the fresh leaves and bending them between the thumbs and finger, B 2 [Black B. D.] appears firmer, stiffer, than either of the others. B 1 [Ben Davis] and B 3 [Gano], thinnest; B 4 [Givens] next thinnest. In other words B 2 [Black B. D.] has stiffest, hardest, thickest leaves; the other three not differing much. B 2 leaves remind one of the leaves of the Kieffer pear; they should beat the others for drouth-resisting, fungus-resisting.

I made 4 examinations of each leaf. . . In looking down at the upper epidermis magnified, the cells are smallest in B 2 [Black B. D.], the walls thicker, the palisade cells seem smaller.—**W. J. Beale.**

S. T. COLE, Clyde, Ark., Dec. 15, '03.—The report of the committee is simply stunning. Am sorry our crop was so poor the past season that a better comparison could not be made. As far as I am concerned, the two varieties are not the same and it will take further tests to convince me otherwise. I have on various occasions, handed an apple of each to several of our most intelligent neighbors and requested them so examine them carefully so as to form as accurate opinion by looks and touch of the two specimens as possible as to whether they were the same variety or not; **all of them had no trouble in distinguishing the difference.** I am sure that upon further investigation the Ark. seedling will yet down Gano.

Later, Jan. 5, 1904.—My sincere desire is that all parties interested will come next fall and let me show them both Black Ben and Gano growing on trees side by side. For myself I know they are different.—**S. T. Cole.**

Later, Jan. 8, 1904. Col. W. G. Vincenheller, Fayetteville, Ark.—If it should so happen that I cannot be at the meeting of the Ark Hort. Society, I want you to rhpresent me as being a **thorough, dyed-in-the-wool Black Ben Davis man, first, last and all the time,** until time shall conclusively show me my error. So far, my opinion has never changed in the least since making my statements as you will find them in Messrs. Stark Bro's N. & O. Co.'s circular, "Apple Facts and Experience."

I never was so surprised in my life to learn the Mo. Hort. Committee's report that Gano and B. B. D. were one and the same apple. They just seemed to strain at a gnat and swallow a camel. There is no comparison between Gano and B. B. Davis as grown in our section; till we want now is another crop to thoroughly show it to anyone.—**S. T. Cole.**

E. C. SHERMAN, L. I., N. Y., Dec. 15, '03.—Delicious is at the top, without an equal of its kind. I was greatly surprised at the **good quality** of Black Ben Davis, for I had prejudice against it from the greater part of its name.

B. L. HATCHET, Washington Co., Ark., Dec. 31, '03.—Black Ben Davis is a different apple from Gano and any man with common horse sense can see the difference; I used to graft them both. Black Ben is a better grower and better apple; I originally planted six trees and since I have grafted from these six trees and planted in orchard of 400 trees, I know there is a wide difference in the two apples; Black Ben is large and smooth and dark red while Gano is lighter red, striped, and won't keep so long. A man can look at the two trees and tell the difference; the leaves of B. B. D. are a deep green while Gano are more of ashey color. Now Mr. Stark, you know there is a wide difference between Gano and your Black Ben Davis; I don't think it matters what others say, you have got the genuine and they are not Gano at all.

This Thing Was Not Done in a Corner.—There exists persons so unfortunately constituted as to be incapable of comprehending that others beside themselves are working earnestly and with what skill they have and in their own way, to do good in the world. These over-suspicious souls easily arrogate to themselves a monopoly of good intentions, even while they lightly question the integrity of purpose and the motives of others,—apparently careless, or ignorant, of

third year it bore a few apples. I didn't notice them particularly because there were very few on the tree and the old orchard was full of apples that year. I had spoken to my husband three or four times previous to that about cutting down that **little scrubby seedling.** I thought it would interfere with the cedar tree and didn't think it would amount to much. He insisted that we leave them to grow together. The fourth year this tree bore full of beautiful apples which attracted my attention by the color and shape, different from any I had ever seen before. I was so attracted by it that I was anxious to have the apple introduced in the country and one Mr. Geo. Guthrie came to our house, cutting scions from the old orchard, and I asked him to take some of the twigs from that seedling tree. He asked me what it was and I said it was a **seedling** and we had no name for it, but it was the **finest color** and **different shape** of any apple I had ever seen in the country, and I thought it ought to be propagated from. So he took some of the twigs and grafted them. He just took a few, the trees from which he planted on his own place, which place is now owned by John F. Bain. After we left there in 1887 I never saw the ground again where that tree grew until January 5th of this year, which was seventeen years after I left. I had learned that the tree had died and been destroyed, but I knew that if the cedar tree was still standing that I could locate the apple tree pretty near. I went over there and found the old cedar tree and I thought the apple tree was about four or five feet of it. They dug for the roots and found them **within a foot and a half** or less of where I thought the tree stood. The roots were found about **two and one-half feet below the surface.** I was afterwards glad that my husband did not cut this seedling tree down, for when it bore that fourth year, I knew it was a valuable fruit and it attracted the attention of the neighbors all around. My brother said that he wanted grafts made from that tree—said he knew it was a valuable tree. My father got his roots for grafting by taking the oxen and plowing up the roots of the trees in the orchard, and cut the roots up for grafts. I was raised in that country and most everybody was kin to me and I had been in all the orchards that were there at that time and never seen anything like that apple before. I knew that country before Mr. Black bought place, when it was all in woods. This **seedling** tree was not in a row with any of the other trees —MRS. J. F. REAGAN.

Statement of John F. Reagan.—I owned a farm in Washington Co., known as the Parson Black farm, which I bought in 1883. I lived on that place four years, leaving there in 1887. There were bearing trees on the place when I bought it; tbey were planted by Alexander Black, known there as Parson Black. I bought the place from John D. Moore. When I bought the place there was a little scrubby seedling three or four years old growing near a cedar. My wife tried to get me to cut it down several times so as to give the cedar a better chance. I told her I would not cut it down, but let them both grow together. The tree did not show any fruit the first or second years I was there; it bore a few apples the third year, and the fourth year it bore a good crop for a tree of that size and age. The limbs of the seedling and cedar had grown in together. The orchard that was on the place was planted out in 1870, but I knew the place before a tree was planted on it. In 1869 when Mr. Black moved on the place there wasn't any improvement on it. It was all in timber and he cleaned up a little garden spot before he moved in. The orchard that Mr. Black planted was bearing when we moved there. There were different kinds of apples, some Summer Queen, some sweet apples, some Shannon, Little Romanite, some Red and Yellow June and some Limbertwig.

In those days they made grafts by taking the surface roots from old trees and cutting them in pieces. I hauled some of the Shannon apples to Fort Smith; sold some few others, but dried what we didn't sell. We peeled our apples near the cedar tree. Old peelings and cores were in evidence there where people bad peeled there before we came and we used the same place for peeling ours. I sold the place in 1887 to Nathan Thomas; he moved in the same day I went out, April 11, 1887. I knew Alexander Black well; he performed the marriage ceremony for me and my wife; I knew Eally and Moore. Moore is still living and is a very old man. I was in that country and knew it before Black took up his homestead, and it was all in timber, not a tree on it—that is, apple tree. Uncle Jack Rich, who is now a very old man, saw the trees in bearing on my place and said he never saw anything as fine as that seedling apple. After Guthrie grafted it, it was sometimes called "Reagan's Red" and some people still call it by that name. I am a Baptist minister.—JOHN F. REAGAN.

Statement of Stephen Thomas.—I moved on to my place, adjoining the Black farm, in 1870 and have lived on it continuously since that time. When I came to my place Parson Black had moved on to his homestead the fall before and had cleared out a little garden spot. In 1870 he planted the old orchard that is on the place. Parson Black sold the place to J. S. Eally, who lived on it only about one month. Eally did not plant any trees on the place, but sold the place to John D. Moore. Moore never lived on the place. I had it in my charge while Moore owned it. Moore sold the place to John F. Reagan. No trees were planted on the place while it was owned by Moore or Eally. Reagan sold the place to Nathan Thomas, who still lives there.—STEPHEN THOMAS.

Statement of Wm. Norwood.—I have given special attention to the Black Ben Davis since 1895. I can readily distinguish the Black Ben Davis apple from the Gano as they grow in our country. The Black Ben Davis is **much darker** and more **uniform in color** and is more oblong in shape. I live in the vicinity where the Black Ben Davis originated. I have noticed the fruit growing on the Bain trees and also noticed the trees both in nursery and orchard and they are **positively different from Gano.**—WM. NORWOOD.

Statement of Frank Femmons.—HOME ORCHARD, AWAHNEE, CAL., JAN. 4, 1904: Col. W. G. Vincenheller, Fayetteville, Ark. I notice that the annual meeting of the Horticultural Society of Arkansas will convene in a few days. The interest I feel in horticulture and the desire to do all I can to encourage the introduction of the best varieties of all kinds of fruits into the orchards of the whole country, and the knowledge I have had of your efforts in the same direction must be my apology for addressing you.

Over thirty years ago I had some knowledge of portions of your state as an apple growing section. When I began experimenting here to find the best apples adapted to our mountain fruit belt, I felt that the Ozark Mountains was the most probable source from which to get varieties, and made an attempt in that line about 1885 but without success.

When years after I learned that Stark Bro's of Louisiana, Mo., were looking to the same section for new and better apples I was greatly pleased. But let me say this, that beyond a sincere friendship and obtaining varieties of them from time to time, I have no connection with their nursery business or any other. My only aim is to find the best from whatever source and if possible encourage others to show their usefulness.

I had fruited many varieties of the Ozark apples before receiving scions of Black Ben Davis in 1898 and was thinking well of some of them. Coffelt, M. B. Twig, Gano and some others were promising, but when Black B. D. **fruited in '99** the combination of its strong growth, the dark green healthy foliage, the wonderful beauty, fine texture and keeping quality of its fruit delighted me, and it has **never failed of a full crop since.** While a few others may have a higher quality in flavor, I have never before seen an apple that so greatly pleased me, and year by year it has grown in my estimation. I now have over a hundred trees in bearing and wish they were **five or ten times** as many. As it develops here I am convinced that it stands to-day **without a peer** as a commercial apple, and I hope to see the day when it will be so thought of and planted wherever the best apples can be grown, for the morning sunrise of apple demand is but just breaking into our mountain valleys and over their slopes where the apple finds its most congenial home and grows to its highest perfection.

Like everything else of high excellence, the friends of another variety have been making the attempt to overshadow B. B. D. From my experience here with the two varieties I can't think of them as rivals at all. While B. B. D. has **grown year by year** in my estimation, the other, under like conditions, has failed to give satisfaction. The details of my observations of the two varieties would only be a repetition of what I have written from time to time and I have no reason now to change my conclusions in any particular.

Black Ben Davis appears to grow here to its full development. Gano, I have reason to believe, is not as fine as in some other locations and while the two apples are evidently near related in parentage, I have no doubt of their **separate and distinct origin** nor have I a doubt of the **great superiority of Black Ben D.** as a commercial variety.

Arkansas has a right to be proud of the high excellence of some of the new apples it has produced. The local conditions of soil and climate seem to develop the latest possibilities in variations and fixing them as a new type. What higher development it may reach we do not know, but I wish to express the hope that your State Society of Horticulture will feel that it cannot permit the high honor of one of its fairest productions to pass from its keeping.

With a friendly greeting from Cal. to you and every true lover of orchard trees and orchard productions.—FRANK FEMMONS.

Statement of L. M. Winans.—My home is Seymour, Mo. The Black Ben Davis as grown in my orchard **side by side** with the Gano is **far different.** The Black Ben Davis tree is more of an upright grower, strong and thrifty. Gano grows more on the Willowtwig form, drooping, spreads more and a more wiry growth. Fruit of Black Ben Davis as my trees have fruited is an oblong apple, uniformly a **very dark red**—no stripes. My Gano have some dark colored apples, but mostly with stripes or with spots, the white spots prevailing; and the general crop is flat. I have made the test and selected Black Ben Davis from Gano when piled together. I have from three to four thousand trees of each variety; **am still planting Black Ben Davis,** but NOT Gano.

H. E. VAN DEMAN, in Rural New-Yorker, Jan. 2,'04.— . . The only true way to observe and decide all points of difference in fruit is in the orchard, where the run of the trees can be seen, and not to judge from selected specimens.

E. A. RIEHL, Ex-Pres't Ill. Hort. Society, Alton, Ill., Dec. 15, '03.—I heard report of committee of Mo. Hort. Society, but it is still possible they are mistaken. Were I in your place, believing B. B. D. essentially different from Gano, I would, like the old woman, "Be of the same opinion still." So far as I am concerned, I used my judgment on apples grown by Mr. Endicot, Villa Ridge. They were certainly very different in color of flesh and flavor from any Gano or Ben Davis that I have ever seen.

J. R. REAGAN, Wheat Mills, Ark., Jan. 1, '04.—The fact can be established that the original Black Ben Davis tree started on the Black homestead in Washington Co., Ark. I know when Parson Black settled the land and when he sold it to Ealey and Ealey sold it to John Moore and I bought it from from John Moore. The year I bought the place tree bore some apples and the next year it was full. After the tree bore such fine apples my wife said to Geo Guthrie: "Why don't you get some cuttings from this tree, for that apple is so fine?" Guthrie grafted some and later sold the orchard to a man by the name of Bain. **The Black Ben Davis tree came from a seed.**

C. H. BIRCH, Albemarle Co., Va., Dec. 11, '03.—Three Albemarle Pippin growers saw and sampled Black Ben Davis to-day. They thought it fine in every respect. I think the flavor too fine to have the name of Ben Davis to it.

MARCUS FIDEL, Santa Clara Co., Calif., Dec. 19, '03.—Some years ago I bought trees of Black Ben Davis: it is certainly **a grand apple** in every way and sure to have a future even here where Bellflower and Newtown Pippin rule supreme.

MAJOR HOLSINGER, in Western Fruit Grower, March, 1900.—"Is or is not Gano identical with Black B. D.?" I pronounce them the same. . . The best new variety introduced in the last quarter century. I claim for it a place in the first three winter apples—Ben Davis, York Imp'l, Gano.

Later, Dec. 30, 1901: I promised yesterday to do you justice in the matter of Black B. Davis vs. Gano. At first I thought them identical. In a later examination . . . called to our assistance several of our very best horticulturists. . . I feel positive now that they are different.—**Frank Holsinger.**

Later, in Wes. Ft. Grower, Jan.,'02: . . . Black B. D. is a distinct variety from Gano. "Crow" is not a pleasant dish, yet I take it with good grace. I promised, when the test was undertaken, that I would have the fairness and honesty to give the public my conclusions. While I wish this dish had been spared me, I accept it with all conditments.—**Frank Holsinger.**

Later, in Wes. Ft. Grower, May, 1902: We did not expect when we gave our opinion of the two apples exhibited in Topeka to stir up the animals. . . . All we claimed was that two plates shown, one labeled "Black Ben Davis," one "Gano," were not the same variety, noting differences.

I confess I did it very much against my own prejudices, as I have during all the past persisted in saying they were one and the same. I confess, like others, I did it superficially. I had not even taken the precaution to investigate the matter carefully. . . I tried to have Messrs. Goodman and Gano with us in the final test. They failed to tarry with us, or I feel assured they too, would have been convinced as were Mr. Walter Wellhouse and the other horticultural gentlemen who did join us in our examination.

In the discussion on this question, I am found fault with principally by the nurseryman, while I am sustained in my decision by the fruit grower. Now why this? Is it a fact that competition is allowed to thus bias the nurseryman in his contention? . . I've had my say. Mr. Goodman has been equally positive on the other side; he sets considerable stress on Prof. Stinson's opinion. Who is Prof. Stinson, that he should pose as an expert on nomenclature? . . . In his report Prof. Stinson says: "Black B. D., Etris and Ark. Belle are from Washington Co., Ark. If you want trees you will by satisfied by buying Gano. They are practically the same."

I was even more pronounced. I said, "they are the same." By all means give us a committee; but let it be one qualified to speak as an oracle. It will require time to fully determine this question of difference. . . . But then who shall report? My 67 years may require another to do so. This, I doubt not, will be done by one of my three sons, possibly by all, as each is intensely alive to the subject. Of one thing I am convinced: That should they be pronounced the same, or "practically" the same, blessed is the man who shall have planted them and thrice blessed he who shall have influenced others to plant them.—**Maj. Frank Holsinger,** in Western Fruit Grower.

Will DELIGHT Unborn Millions.—Jan. 13, '03: Black B. D. and Delicious sent me are exceedingly satisfactory—both better than I expected. . .

Black Bens are almost the handsomest apples I ever saw, and Delicious are—what we have not eaten—keeping as perfectly as Black B. D. They seem to be two very grand apples. Delicious has the most delicate flesh texture I have ever seen in an apple, and it can be eaten with delight by thousands of people who cannot eat common apples—to whom Winesap, for instance, is a prolonged misery. The most sensitive stomachs will accept Delicious with joy and thanksgiving.—**Parker Earle.**

Finest in the Orchard.—From **L. Chapman,** Boulder Co., Colo., Oct., 1901: Went to the Kountze Orchard to see Black B. D.—the finest in the orchard, a handsome apple—trees full; shall plant B. B. D. Ate a Delicious—tho not ripe, flavor was fine. Kountze Orchard (set 1897) . . . is the handsomest I ever saw. Will be a great advertisement for Stark Trees. When I get my orchard there will be another—for all will be Stark Trees.

L. M. WINANS, Seymour, Mo., Dec. 15, '03.—I cannot see how the committee could render such a finding this season when the section of country bearing Black Ben D. had practically no apples. Black Ben Davis, the general crop, are long and dark red; the Gano in my orchard on same soil, are a flatter apple and more streaked, also the tree is more drooping, the B. B. D. having a very strong, vigorous growth. We all have to admit that in any variety there is great difference as to color, as to soil, cultivation and feed. Others can set Gano—I will set Black Ben D., **Royal King of the Ben Davis family.—L. M. Winans.** (Mr. Winans has 80,000 Stark Trees.)

Later, Dec. 22, '03.—Am not setting any more Gano nor have I for past four years. **Black Ben Davis I am setting more each year,** and they are the **only** Ben Davis that I would think of setting. Why do I prefer the Black Ben Davis? These are my reasons: The finest are none too fine for me and the average crop from a Black Ben Davis tree is, at a low estimate, 25% more **evenly** and **highly** colored than Gano as grown in my orchard and under exactly same conditions, same soil and cultivation.

Growers of nursery stock are like all others—out for the almighty dollar and, of course, your competitors are only too glad to get something that they can use against you—anything to stop your great sale of the Black Ben Davis. Although not a grower of trees, I wish I had a piece of your good luck. Where I came in on your valued find, is my good fortune in so long ago (9 years) selecting Black Ben and by continued planting have gained just so much and am so many years ahead of my unfortunate and now sour neighbors who set Gano because they could get cheaper trees.

AUCKLAND, NEW ZEALAND, 2nd Mch., 1901: You will be glad to hear your Apple of Commerce will not take the Aphis. There is NOT A SHADOW OF DOUBT about this. Both root and branch are ABSOLUTELY RESISTANT AGAINST WOOLY APHIS. Here, we call it "American Blight." We could not sell an apple tree if not worked on Aphis resistant stock. We have very much pleasure in giving you all information possible, as it should be of vital importance to you to work up a stock of trees that are required where Wooly Aphis is bad. Black Ben Davis is a **grand apple.**

Later, 19th Sept., 1902: Apple of Commerce is giving the **greatest satisfaction** to all growers. The tree is absolutely aphis resistant. Champion also HAS NOT TAKEN THE APHIS.—**D. Hay & Son.**

Men Who DO Things were ever decried by envious souls. "And now at this day comes" a Rip Van Winkle nursery firm who have evidently decided, Canute-like, to stay the resistless Black Ben Davis tide. Many letters of this "enquiring turn" have been sent us by recipents:

Better Late Than NEVER.—————, Nov. 22, 1902: We wish to learn regarding origin, etc., [of Black B. D.]; will appreciate any information: When did it originate? Who was owner of place on which it originated? Who was first owner? Where did he come from? Who were next owners in their order? Who owned and occupied place when original tree came into bearing? Who was owner of place when apple first attracted attention? Who first called attention to the merits of the apple? What name was it first known by? Is it called by any other name? When did local nurserymen begin propagating it? Any additional information you can give will be appreciated. Thanking you in advance, ——

CAUGHT TARTAR.—L. M. Winans, to— ——, Oct. 26, 02: Replying to yours: Varieties sent you were Stark Trees, Champion and Bk. B. Davis. This I have to say: Champion is my choice of all apples for this section. Have 1000 Gano, bought from local nurseries; have 1000 Bk. B. Davis, bought from Stark's. They are set on adjoining 40's; as far as you can see fruit and trees plainly you can see a decided difference. I'm so much better pleased with Bk. B. D., have bought 1000 more of Stark's Bk. B. Davis.

"Now Stark Bro's have no mortgages on me. I'm not agent for them or for any one else, neither have I ever rec'd one cent from them in any way, not even a cigar; but will say they have done an immense amount of good to the fruit industry in pushing and causing the setting largely of such fine apples, so well adapted for this S. W., as Champion and Bk. B. Davis."

The "Red Hot" Firm.—Had two letters from ——— nursery: enclose copy of answer to last one—which almost begged for a "cull" that I'd told them was all I had left. . . **Frank Femmons,** Home Orchard, Madera Co., Calif.

His Suspicion Was Well Founded.—"Yours 22d with request for Black Ben Davis apples came to-day. . . For 60 years I've known of the confusion often growing out of local names for fruits and had supposed this B. B. D. vs. Gano was of that character; but I begin to think there is something else in it. Many years ago when living in Mo., I knew of Wm. Stark as one of the foremost horticulturists of the west.—when I wanted trees I naturally turned to the old nursery. . No one could ask for better or more honorable treatment than Stark Bro's have always given me. . .

"You are there in the native home of the two apples, and many others of great value, and have more advantages in learning the true history than I can have at this distance.—So you will pardon me if I simply refuse to be drawn into any controversy. Sincerely, **Frank Femmons,** Mar. 28, 1902."

All Like to Reap Without Sowing.—Mr. and Mrs. J. F. Bain, Lincoln, Ark., to Prof. Van Deman, Oct. 2, '02: In 1893 and '95 Black B. D. were largest and finest apples ever saw, far larger than any Ben Davis beside them; many were too big for the apple-peeler. Dried fruit is heavier. Bears more regularly; bore good crops when B. D. failed. Better flavor, stands cuffing about and keeps better. . . Had begged nurserymen to graft it, before Mr. Stark saw it in 1895. After he saw its worth and bought the stock, then all wanted it. Do all we can to protect Stark Bro's . . . but for Mr. Stark, Black Ben Davis probably would never have been sent out.

King of the Orchard.—Wesley Page, Supt. Kountze Orchards, Arapahoe Co., Colo., Nov., 1900: The 1-year-old Black Ben Davis sent Mr. C. B. Kountze, Spring, 1897, have fully caught up with 2-yr. trees, planted same time. Those B. B. D. bore last summer, colored perfectly, handsomest apple I ever saw. Certainly a very young bearer, and the fruit cannot be excelled.

Later, July, 1901: Have been busy picking Mont. O. Cherries; a fine crop for 4-yr. trees. Many have 6 gallons to the tree—very large and even. Florence is the only crab for me; they are full—limbs touch the ground. Black B. D. are fine; an easy leader of all winter apples. Our Ben Davis are small compared with Black Ben D.—the King of the Orchard.

Later, Oct., 1901: If the Black B. D. and Champion were gold dollars Mr. Kountze wouldn't think more of them. People came from far and near to see the orchard, and everyone thinks it can't be beat. Mr. Spaulding of Fort Collins says he has traveled all over the U. S. and never saw as fine an orchard. He thinks B. B. D., Champion and Delicious can't be equaled; says if Delicious is a good keeper, no apple grown will outsell it. B. B. D. is so far ahead of Ben Davis it should not bear the name; side by side they compare like silk and cotton—and B. B. D. is the silk. Champion are very fine—uniform color, size, and not small either.—**Wesley Page.**

I. FORD, Redlands, Cal., Jan. 12, '04.—I enclose clipping relative to some of my fruit from your trees that might interest you:

"We have just received from Mr. Ford, Proprieter of Oak Glen Ranch, a box of fancy Mountain apples containing 7 varieties, some of which are new to California. The varieties are Rome Beauty, Winesap, Stayman Winesap, Ben Davis, Black Ben Davis, Apple of Commerce and W. W. Pearmain. . . Of the above varieties, Apple of Commerce is one of the most acceptable, perfect in flavor, appearance and keeping qualities. . . The Black Ben Davis should have some other name as it is a fruit of **superion quality** and should not be handicapped by such a name"

A Winner.—Visited State Fair at Yakima, Wash., and saw Black Ben D. Superb apple and bound to be a winner; handsome as Jonathan, but 3 or 4 times larger. Delicious is truly delicious.—**H. A. Stearns,** Portland, Ore.

Beats Them All.—Your new apples a credit to you and myself—am lucky to secure them. They are all you claim and more. . . . I don't know any better sorts. Black B. D. beats them all.—**Wm. F. Meier,** Chelan Co., Wash.

NO DOUBT . . . of Distinctness.—When in Ark. this fall I found the place where the original Black B. D. tree grew. . . Now, I have no doubt of the true origin of B. B. D. nor its distinctness from Gano.—**Prof. Van Deman.**

Thousands of Black Ben Davis trees have been planted during the last few years and will soon be bearing. We rest our case with the perfect assurance that our statements and those of the friends of B. B. D. will be fully substantiated in the near future. And, by the way—Isn't it indicative that every disinterested orchardist having B. B. D. and Gano bearing side by side, pronounces Black Ben **not only different** from Gano, but SUPERIOR?

STARK BRO'S NURSERIES & ORCHARDS CO.
Louisiana

Kansas Fruit-Growers Meet

(Continued from Page 25.)

ties should not be mulched heavily, or perhaps not mulched at all.

Mr. Murray reported that he had Excelsior, Gandy, Warfield and Aroma planted together, and the Aroma stood the freeze decidedly the best.

B. F. Smith gave it as his opinion that the Aroma will succeed the Gandy as the best late berry. He would never plant it on level land, but on high rolling locations. Warfield and Splendid were very fine last season. The latter especially is coming to be a most excellent berry. Mr. Smith said that he had found that the Enhance will produce a second crop of fruit in the fall of the second year, but will not do so the first year it fruits. If he were to be confined to but one variety, Mr. Smith said, that variety would be the Splendid. He believes the Johnson's Early will succeed Excelsior as the best early berry, on account of the fact that the Excelsior is so very sour. Leaf roller is the most serious pest in strawberry growing, and he had found it worse on sandy soils.

Mr. Kenoyer said he had little trouble in controlling the leaf roller. It is found on old patches, but if they are kept for only two or three years one can control the insect. Mow the plants after fruiting, allow the leaves to dry, loosen the mulch and burn it, and there will be little trouble from the leaf roller.

Mr. Brazelton reported the Haverald as one of the best varieties in Doniphan County, and Mr. Schell reported that Excelsior and Clyde produced fruit at Wichita last spring, when the Gandy failed.

Mr. Maffet considers the Warfield as the best berry; would fertilize it with Senator Dunlap.

M. E. Chandler said be believes commercial growers plant too many varieties. Excelsior, Warfield, Senator Dunlap, Aroma and Splendid make up a good list.

To get the opinion of the strawberry growers present as to best commercial sorts, they were asked to vote for a list of five varieties. The showing for the principal varieties was as follows:

Warfield 20, Splendid and Excelsior each 14, Aroma 12, Parker Earle 9, Dunlap 8, Windsor Chief 3, Gandy 3, Haverland 2 and one for each of the following: Bubach, Clyde, Bisel, Barton's Eclipse, Wolverton, Lady Thompson, Captain Jack, Michel's Early.

John Brazelton, Jr., read a paper on "Blackberries and Raspberries." He would prefer to plant black raspberries on the north or east hillsides if he could get this location. This is because the soil is usually best on these slopes, and the exposure is best. He would plow deep in the fall before planting and then put in good condition in spring, and then plant. Put plants three feet apart in the row, with rows seven feet apart. Individual plants vary greatly, and he would propagate only from those which are known to produce good fruit. Cultivate with a weeder until it can be no longer used. If one wishes to grow a crop between the rows potatoes can be grown to advantage. If one wishes to give clean cultivation early, this can be done, and then turnips can be planted. Mr. Brazelton would prune in the spring as soon as the healthy wood can be determined from the dead wood. No summer pruning is recommended, but he would pinch the tops at a height of eighteen inches; would not shorten the laterals. Since the introduction of the Kansas and Cumberland raspberries he has had no trouble from anthracnose. For purple berries would plant the Cardinal. Of good quality, but not in demand on market on acount of its color.

Mr. Brazelton said that blackberries will give better crops on thin soils than raspberries will. Most popular variety is Snyder. He prefers Early King to Early Harvest, which is often winter-killed. Mr. Brazelton has tried the Austin dewberry and likes it very much.

Mr. Griesa said an effort is being made to boom the Rathburn blackberry; he has had it for ten years, and has never had as much as a quart of fruit. Mr. Brazelton said this variety had done better than that for them, but he would not recommend it.

Gerald Holsinger said Dr. Whitten of the Missouri Experiment Station had said that anthracnose on raspberries could be held in check by spraying with Bordeaux mixture. Prof. Popenoe said that Bordeaux mixture, used at the right time, will be effective as a preventive measure.

Mr. Kenoyer reported that the Rathburn blackberry winter-kills with him, in the warmest part of Kansas.

Mr. Wild of Missouri was called upon to tell the methods practiced by some of the large dewberry growers of Southwest Missouri. He said dewberries the planted in rowe six feet apart, one foot apart in the row. They are cultivated thes ame as strawberries. They used to plant four feet apart in the row, but now the shorter distance is preferred. When the new growth is three to four feet long the tips are pinched off, thus inducing the growth of lateral branches. As to the treatment after the fruit is gathered, the plants are simply mowed and as soon as dry they are burned. The ground is then leveled off and cultivation resumed the same as the first year. There is no staking. Canes make three to five feet in growth. As to the hardiness of the dewberry, Mr. Wild said that when the peaches are killed the outer wood of dewberries will be apt to be killed also.

Mr. W. B. Eames would plant dewberries on well-drained soil. He would also mulch well. In fall cut off some of the long canes and then cover the plants well.

"How do you get rid of the dewberries, when you are ready to put them aside?" a member asked.

"I simply don't want to get rid of them," replied Mr. Eames. "I want to keep growing them. A patch is good for forty years, for the fruit seems to thrive in our Kansas sun. We have no trouble geting pickers. Women do the work, putting on a heavy glove, with the tips of the fingers removed."

J. F. Cecil opened the discussion of gooseberries and currants. He said there was not much encouragement for the man who tries to grow them in any quantity, on account of unfavorable climate. Red Dutch wil prove the best currant and Houghton the best gooseberry. The discussion of this subject brought out the fact that there are few successful growers of these fruits in Kansas. Planted on the north or east side of a fence or house, enough currants or gooseberies can be grown for home use, but the commercial field is not inviting. One grower put his currants at the base of trunks of trees and they did fairly well.

In answer to a question, Prof. Popenoe said that gooseberry foliage can be protected from mildew by spraying with Bordeaux mixture.

Prof. John T. Stinson of St. Louis was present, representing the World's Fair, and talked to the members about the part that Kansas should take in helping to make the fruit display a success. He said that Kansas has been awarded a good position in the horticultural building, and the growers should see that the space is kept filled.

"For the benefit of the Kansas people," said Prof. Stinson, "I will state that I talked with the manager of a cold storage department in St. Louis, where Kansas fruit is stored, and he told me it is keeping in most excellent condition."

Mr. W. F. Schell, horticultural commissioner from Kansas, was called upon and said that Kansas must see to it that the good reputation of the state is maintained at St. Louis. The appointment of the horticultural commissioner was not made until the 5th of last August, which was of course too late to permit him and his assistants to get samples of the berries and other summer fruits to preserve in solution. However, a start was made at once, with Gerald Holsinger as assistant, and as many of the summer fruits as possible were secured. At present 300 jars have been put up which will help to make the exhibit more attractive. The apple crop was short and hard work was necessary to get any fruit suitable for exhibition purposes. The best fruit had come from the Arkansas valley, and 550 bshels were secured and are now in storage. The commercial varieties are all represented in this list, but only about 27 varieties are included. Next year the entire list of varieties grown in Kansas must be secured.

"I want to invite and to urge every member of the society, as well as every other fruit-grower in the state to help in this work. Don't say it is not your work, for it is the work of every man interested in the good name of Kansas. Send us a list of what you have, and we will advise you in regard to the matter."

Gerald Holsinger talked along the same line, and said that next summer the growers should send some of their best fruit to help keep up the exhibit. Time tables should be studied, so that the shipment of the fruits can be made so as to reach St. Louis at the proper time.

Mr. Robison suggested that a special effort should be made to secure an exhibit of some of the native fruits of Kansas, such as sand cherry, etc. Other growers expressed their willingness to do their part, so that it is evident that Kansas will be to the front at St. Louis next year, as usual.

"Grape Culture" was discussed by Messrs. Oberndorf, Espenlaub and Entsminger. The first named talked on growing grapes for the family, in which he made the point that he believed it pays to bag grapes grown for home use. Mr. Espenlaub discussed the subject from the standpoint of the commercial grower. He said the past season was a very bad one, although on high locations there were some good crops of grapes. There are no good new commercial grapes, he said. Morre's Early is still the best early grape, followed closely by Campbell's Early, which has the advantage of being a better grower. Concord for biack, Niagara and Moore's Diamond for white, and Woodruff for red, are good varieties. Mr. Espenlaub said he has fruited the Stark-Star, which is hardy, a heavy bearer, and for a late grape is one of the best.

Mr. Entsminger talked from the standpoint of an experimenter in grape growing. After testing the new ones, he said he does not believe he has found any which will supplant Concord, Moore's Early and Worden. Mr. Entsminger has grown many seedlings, and has reproduced Concord, Worden and Moore's Early in trying to get new sorts. Hicks seems to be promising as one of the Concord type. Stark-Star has a very large bunch, with berries about color of Catawba. Very productive, one vine having as many as 63 of the very large bunches.

In discussing "Peach Culture" Mr. Edwin Snyder said he had had fewer failures in growing peaches than in growing apples, and had much better net returns. Buds are now in good condition for a crop next summer. Elberta leaves, however, dropped rather early in the season Mr. Snyder said his last planting was five years ago. Trees were planted 20 feet apart east and west, 16 feet apart north and south. He raised two good crops of corn and then seeded the orchard down to clover. The soil would wash very badly if not seeded down. Next season he will cultivate a strip on each side of the trees.

"The question of varieties is something upon which we will not agree," said Mr. Synder. "I would plant Elberta, Crosby, Champion, Heath Cling and Salway. I would thin the peaches by severe pruning in winter."

Prof. F. A. Waugh of Massachusetts, who was present to take part in the meeting, and who was introduced as a Kansas man, said that it will be found that in the markets where quality is appreciated the white-flesh peaches are preferred to the yellow-flesh varieties, which are, as a rule, of not so high quality as the white fruit.

Prof. Waugh was asked about the judging of fruits on score of points, and gave an outline of the subject, as explained in an article in the Fruit-Grower several months ago. Much interest was manifested in this subject, and one member said his local society had used a card of this kind for some time. It was generally agreed that before the system will be a success there will have to a number of cards for fruits of various kinds.

At the evening session Wednesday interesting papers were read by Mr. Robison on "Plant Breeding," by Mrs. J. J. Alexander on "Home Adornment," and B. B. Smythe on "The Chemistry of Water." Prof. Waugh then delivered an address on the subject of "Trading Fruits for Money," which dealt with the marketing of fruits. The Fruit-Grower hopes to present the main points in this paper later.

The question box was opened, and the following was the result:

"Will plums do well on black, heavy soil?"

Professor Waugh: "I think not, for a period of years, although some of the European sorts, as Lombard, German Prune, Italian Prune, etc., might do well for a while."

"Would you plant them on bottom

(Continued on Page 34.)

FARMERS! Fruit-growers! Nurserymen!

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"ALLIER" White-washing and Spraying Machine

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for white-washing barns, sheds, henhouses, out-building, etc., and spraying fruit-trees and gardens. No trouble to operate: can't get out of order. Does work of twelve men at cost of one man.

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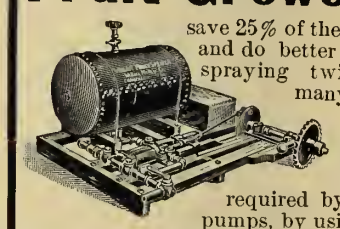

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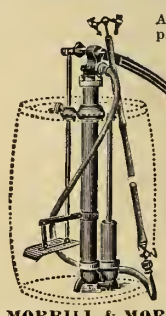

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THE ECLIPSE

is a good pump. As practical fruit growers we were using the common sprayers in our own orchards—found their defects and then invented **The Eclipse.** Its success practically forced us into manufacturing on a large scale. You take no chances. We have done all the experimenting.

Large fully illustrated Catalogue and Treatise on Spraying—FREE.

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That the Difference Between Success and Failure in Fruit Culture.

Big Fruit Crops always follow spraying with the wonderful

Hardie Spray Pumps

That's because they work with such a high pressure that the fog-like spray is forced into every hole and corner, and it stays there. These high-grade machines cost no more than the inferior kinds. Yet the results from their use are so much more satisfactory,

And They Work so Easy.

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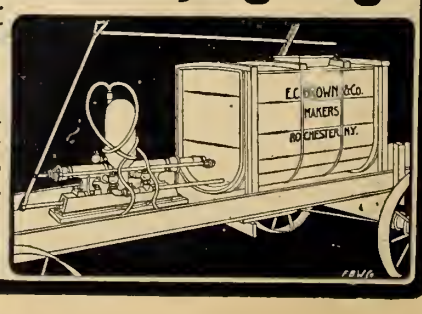
59 Main St., Hudson, Mich.

Orchard and Park Spraying Rig.

Nothing short of the strictly power outfits approaches the efficiency of this hand power sprayer. Operating the "Hydraplex" pump is like play. A boy easily

KEEPS A DOZEN NOZZLES GOING,

spraying 200 trees an hour. Brass working parts avoid corrosion. Valves and packing all exposed. Delivers spray as fog or mist and works at **Highest Pressure.** Sold separately or with our cypress 150 gallon tank, dirt proof, with outside strainer and mechanical agitator. May be used with any tank or barrel. **The only hand power sprayer for large operations.** We manufacture the largest line in America of high grade and power sprayers. Ask for free catalog of all Sprayers and Appliances.



E. C. BROWN & CO.,
282 STATE STREET, ROCHESTER, N. Y.

PREMO DEWBERRY

A New Extra Early Blackberry of the Lucretia type. It is very large, jet-black, firm and good, ripens its crop very fast.

It is with the greatest confidence and satisfaction that we introduce the PREMO DEWBERRY, which, we believe, will bring more wealth to fruit growers and dealers, and more satisfaction to consumers of Blackberries throughout the United States than any Blackberry has yet done.

For many years we have been looking for a large, early, productive Blackberry of the Wilson type. The Lucretia, when it came, was the nearest to our ideal, but now we have in PREMO a prize still nearer to the perfect berry we are looking for, and as far ahead of Lucretia as Lucretia is of the Wilson. Just as Lucretia has taken the place of the latter, so PREMO must inevitably take the place of Lucretia and Early Harvest.

We have tested PREMO in every way before venturing upon its introduction, and we are upheld in our estimate of its great value by all fruit-growers who have seen it in bearing.

This PREMO was found growing in a Lucretia patch, where its early ripening attracted instant attention. It closely resembled Lucretia, in fruit, but all the berries on the vine were about ripe just as Lucretia was beginning to ripen a few scattering fruits. All blackberry growers know how much more money this means to them. If the entire crop of Lucretia could be picked at the first or second picking, what a great difference it would make in the grower's bank account! Now, you can do this by planting PREMO, and you can do still more—for you can pick many berries before you can any of the Lucretia, and can finish at the second picking. You are then out of the glut which there is certain to be in our eastern markets in a few years, as soon as the large acreage of Lucretia recently planted comes into bearing.

Those who plant PREMO now will be ahead of the procession and reap a rich reward. For ourselves, we can say that we intend to plant at least twenty-five acres of this berry for fruiting, as fast as we can spare the land and plants, which we hope will be the coming spring.

Please note that PREMO has an imperfect blossom, so that every third or fourth row must be planted with Lucretia in order to fertilize the flowers.

Three Reasons Why PREMO DEWBERRY *is Superior to Lucretia:*

1st. PREMO is 7 to 10 days earlier, ripening up the crop so fast that it is about all gone at the second picking of Lucretia.

2d. PREMO is as large as Lucretia, jet black color, better quality, much firmer.

3d. PREMO has foliage of a darker green and more healthy looking than Lucretia's, and not inclined to burn when hot suns come as latter sometimes does.

Myer & Son, Bridgeville, Delaware

The Ward Blackberry

A seedling of Kittatinny, which it closely resembles; a strong grower, perfectly hardy (in New Jersey), the fruit black throughout, and very prolific; of most excellent quality.

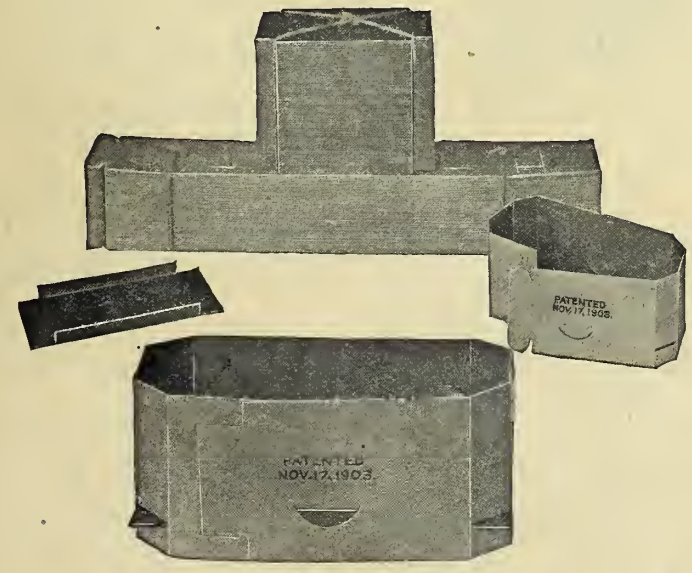
J. H. Hale, of Connecticut, says: "I thought I had seen blackberries before, but your field of Wards caps the climax. These rows of strong, thrifty, well-branched plants, so literally covered with fruit that it actually blotted out nearly all the foliage seemed almost like too much of a good thing. * * * Fruit is of large size, jet black color, fine for shipment, yet tender and melting all through, without core, and of highest quality. I can agree with you that the Ward is the most hardy, as well as the best, blackberry I have ever seen."

GET PLANTS FROM INTRODUCERS

D. Baird & Son, Baird, New Jersey

Peach Trees by the Thousand or Carload. Write for Prices.

NATIONAL BERRY BOX



Patented Nov. 17, 1903.

Above illustration is a photographic view, showing the **NATIONAL BERRY BOX,** folded ready for use, box and bottom partly bent ready for a final fold or close, and two bundles, each 100 pieces—sides and bottoms—as they are bundled for shipment.

The **NATIONAL BERRY BOX** is made out of tough folding combination board with strawboard bottom, both sides are paraffined to render the boards moist and juice proof. Is easily put together, no skill nor appliance necessary; can be taken out into the field in bundles and folded by picker, as needed, in a moment, thus saving the nailing by extra hand. Is **lighter** in weight than the old style wooden box, and hence **less expensive** to ship. Is also a **splendid medium** for **cheap advertisements** by having **all sides printed** as desired; this, however, can only be done in **large quantities,** at moderate rates.

Every thousand boxes received means one thousand boxes complete, without waste, as the splitting by nailing, warped bottoms, etc., in wooden boxes is very numerous. Hundreds of thousands of them have been used and re-ordered, a proof of giving entire satisfaction.

Price $4.50 per M., without printing, F. O. B. Factories. Special discounts on quantities.

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WINDSOR, MO.

J. E. THOMPSON, Proprietor

Member Missouri State Horticultural Society.
Member American Nurserymen's Association.

Fruit Trees & Plants

Roses and Ornamental Stock

One and two-year trees, none older. All thrifty and propagated and cultivated after the most modern and approved methods. A specialty made of the best varieties for the home or commercial orchards—no better trees grown anywhere.

All Stock Warranted True to Name

Purchase price refunded if any should prove otherwise. Correspondence gladly answered. Write me and get my prices before placing your order.

Windsor Fruit Farm, Windsor, Mo.

J. E. THOMPSON, Proprietor

1904 Offerings of Nurserymen and Seedsmen :: Catalogues

The list of new fruits offered by the nurserymen this season does not seem to be as extensive as usual. A feature seems to be a number of new berry fruits listed in the different catalogues. Among the more prominent offerings are the following, the descriptions being from the introducers in every case:

The Ward Blackberry—This comes from D. Baird & Son, Baird, New Jersey. It is a seedling of Kittatinny, and is said to resemble the parent, having all the Kittatinny's good qualities, with none of its defects. The Ward has most excellent testimonials from a committee of the New Jersey Horticultural Society, J. H. Hale, and others.

THE WARD BLACKBERRY.

Flota Peach.—This is a new seedling of the Elberta type and is remarkably like Elberta in size and appearance, being a large yellow freestone, though it ripens ten days earlier. Other qualities equal to Elberta, and it is somewhat larger in size. Introduced by C. W. McGhee, Norris City, Ill.

The Hartford Pear.—A variety introduced by J. Wragg & Sons, Waukee, Iowa. Parent tree is a seedling, planted in 1848. Tree healthy, never having blighted. Fruit is of medium size, rich and delicate in flavor, melting, buttery and sweet, and exceedingly juicy. Ripens in September.

Iowa Raspberry,—Another offering from J. Wragg & Sons, Waukee, Iowa. It is a red raspberry, originated near Storm Lake, Iowa; plant is hardy, and a heavy yielder; fruit is large, rich, dark red in color and of excellent quality; ripening period extends over a long season.

Pineapple Strawberry.—A very vigorous and productive new strawberry; fruit very large, with a pronounced pineapple flavor. Introduced by Green's Nursery Co., Rochester, N. Y.

September Queen Peach.—A large, highly colored, freestone peach; sweet and delicately flavored, and very juicy when ripe. Season from August 15 to September 1, in Georgia. Variety is a good shipper and heavy cropper. Introduced by W. T. Cheney, Rome, Ga.

Brill Blackberry.—A seedling from Eastrn Texas, said to be a cross between the dewberry and blackberry. Canes grow upright the first year, like a blackberry, and later throws out runners like a dewberry. Holds fruit well up from the ground; plant very hardy and easily propagated, making some plants from tips, like dewberries. Fruit ripens over a period of several weeks. Fruit is very large, of good flavor and a fair shipper; recommended for shipping only to nearby markets. Introduced by John F. Brill, Grapeland, Texas.

Mammoth Blackberry.—Said to be a cross between the wild blackberry and a variety known as the Crandall. Fruit very long, sometimes measuring 2⅛ to 2½ inches; seed very small and not abundant, the globules are large and core quite small; flavor of berry is very mild and pleasant; fruit ripens very early, sometimes being ripe when other varieties are just in bloom. Vines stand hot, dry climates well. Introduced by Jurupa Nursery Co., Riverside, California.

Waterman Sweet Cherry.—Of Russian origin, tree absolutely hardy, and a heavy, annual bearer. Fruit of most excellent quality, slightly sub-acid; desirable to eat out of hand and unexcelled as a canner. Introduced by the Humboldt Nurseries, Humboldt, Neb.

NEW VEGETABLES AND FIELD SEEDS.

Henry Field's Noverties.—Send out by Henry Field, Shenandoah, Iowa—Cornbelt Cabbage: A late cabbage especially adapted to the climatic conditions of the cornbelt. The Eastern varieties of late cabbage often fail in the central west as they miss the moist, cool summer of the eastern states and suffer in the dry hot summers here. The Cornbelt is bred with the idea of enduring the hot dry July and August. Large, solid, and a good keeper. Above all a sure cropper.

White Ohio Potato.—A pure white seedling of the popular Early Ohio. Early and vigorous. Made a carload to the acre in 1902.

Field Corn, Early Ohio.—A 90 days yellow corn with extraordinary deep grains. Will shell 90 per cent.

Field Corn, White Elephant.—A pure white dent corn of enormous size, often 14 inches long. Will mature in 100 days and is suitable for the central corn belt.

WHITE ELEPHANT FIELD CORN.

Field Corn, Shenandoah Yellow.—A medium early yellow corn, large eared and deep grained. The best representative of what is known as the Shenandoah type of corn. A heavy cropper that will mature anywhere in the central corn belt.

Gold and Carmine Bean.—A new pole bean, introduced by J. A. Everitt, Indianapolis, Ind., W. A. Burpee, Philadelphia, and D. M. Ferry, Detroit, Peter Henderson, New York. An early variety which bears until frost; pods long and entirely stringless and of excellent quality.

Mt. Ranier Pea.—This new table pea comes from Lilly, Bogardus & Co., Seattle, Wash., the variety having originated there. It is a second-early pea, two and a half feet in height, and wonderfully productive; pods of a rich, deep green color, filled with peas of fine color and good quality. Claimed to be a most excellent market variety.

Noxall Corn.—A new second-early sweet corn, introduced by the St. Louis Seed Co., successors to the retail department of the Plant Seed Co., St. Louis, Mo. This corn is said to be the finest quality yet attained and the plant is very productive. For gardeners this variety is recommended, on account of its heavy yielding, and for the home garden it is recommended on account of its excellent quality.

Other new varieties are mentioned in the "Catalogue Review."

NEW FLOWERS.

New Crimson Rambler Philadelphia.—The introducers claim that this is "the most magnificent hardy claimbing rose in existence." They say it is a vast improvement over the Crimson Rambler, which has already grown so very popular throughout the country. It is brighter in color; the flowers are larger and more durable, and in fact it is better in every way. It is perfectly hardy; grows ten to fifteen feet in a season and bears "bushels of roses" with practically no attention whatever, although like all roses it will be the better for being well fertilized and cultivated. Introduced by the Conard & Jones Co., West Grove, Pa.

Mont Blanc Canna.—This magnificent new canna is the result of many years of careful hybridizing, and is declared to be the finest white canna that can be found anywhere. The flowers are large and borne in great abundance from the early summer until frost comes in the fall. The foliage is bright glossy green, very large and handsomé. The plant is a strong grower, will do well almost anywhere, although all cannas when once established like plenty of moisture and sunshine. A pure white canna is just what flower lovers want everywhere to make splendid effects in combinations with the red, pink and other highly colored varieties. Introduced by the Conard & Jones Co., West Grove, Pa.

Valuable Booklet on Alfalfa.—The Fruit-Grower has received from Ross Brothers' Seed House, Wichita, Kan., one of the most interesting books on alfalfa we have ever seen. We believe this book is sent free on request, and it certainly is a most liberal offer. It is not only most interesting, but is handsomely printed. Not every firm which seeks to do business with farmers appreciates the value of good printed matter as does this firm. We recommend that everyone who has thought of planting alfalfa send for a copy of this booklet, addressing Ross Bros., Wichita, Kan., mentioning the Western Fruit-Grower when you write.

PHILADELPHIA RAMBLER ROSE.

CATALOGUE REVIEW.

The catalogues this season show an improvement over those of past years, showing that seedsmen and nurserymen and others who deal with the farmer are realizing that farmers appreciate good printing. Among the catalogues received are the following:

Storrs & Harrison Co., Painesville, Ohio.—This is one of the handsomest catalogues we have seen, with complete line of fruit trees and plants, also seeds of all kinds. The catalogue is well gotten up and exceedingly well printed. Illustrations are from photographs.

Henry Field, Shenandoah, Iowa, "The ear seed-corn man."—This catalogue is out of the ordinary from seed catalogues, as Mr. Field is out of the ordinary run of men. It has lots of good stuff in it, and is most interesting reading.

W. A. Burpee, Philadelphia.—This is always one of the good catalogues, and this year it is another good one. Among the new things catalogued are Brittle-Ice Lettuce, a new nameless beet, a new tomato, Early Jewel. In the flower seeds are some new sweet peas, of which Burpee makes a specialty, and three new ivy-leaved nasturtiums.

Peter Henderson & Co., New York.—This is another of the really beautiful catalogues sent out by seedsmen. This year it is fully up to the standard. Among the new offerings is Silver-Self-

5,000,000 STRAWBERRY PLANTS

Our plants are very best on market—cheapest to buy. Price, $1.25 to $1.75 per 1,000. All best varieties—Boston Prize, Parson's Beauty, Clyde, Brandywine, Tilghman's Favorite, and all other leading varieties. Read what one of our customers has to say about our plants:

"Harrisonburg, Va., R. F. D. 5, Dec. 10, 1903.—W. S. Perdue & Sons, Parsonsburg, Md.—Dear Sirs: The strawberry plants I ordered of you last spring pleased me. They made a fine growth during the past summer and I have a fine prospect for a large crop next spring. Should I need more plants I will order them from you, as you have the cheapest good plants I ever saw. Please send me catalogue when it is out.—JOSEPH H. GOOD."

Catalogue free—Write today and save money.

W. S. PERDUE & SONS
PARSONSBURG, MARYLAND.

Hoyt Plant & Seed Co.

Growers of Seed Corn Oats and Potatoes

Propagators of Small Fruit Plants, Fruit Trees, etc. **Northwestern Headquarters** for Strawberry Boxes, crates, etc., Planet Junior Machinery, Sprayers, etc. Catalogue No. 16—"A Treatise on the Strawberry."

Hoyt Abe., St. Paul, Minnesota

Nut Trees

We have a larger stock and a greater number of varieties than anybody. We sell at **wholesale prices** direct to the planter. We want local representatives on commission. Price list and catalogue **Free.**

Oak Lawn Nursery
HUNTSVILLE, ALABAMA

Direct From Grower to Planter

Nursery Stock and Seed Potatoes, X X Rhubarb Roots, Grape Vines and James Vick Potatoes, my specialty. Farms for sale in this great fruit belt. Write for prices.

Lakeside Vineyards, Seed and Fruit Farm
E. E. CARR, Proprietor
North East, (Erie Co.) Pa.

None Better Than the Best

Our Fruit and Shade Trees, Evergreens and Hardy Shrubs, Vines and Small Fruits, Field-Grown Roses, etc., are unexcelled. Immense stock. No agents. We sell direct. Magnificent catalogue free.

BON AYR NURSERIES
MT. SELMAN, TEXAS

200,000 fine Delaware-grown Peach Trees

of the leading new and old varieties in assortment for Spring, 1904. We sell direct to planters, at very low prices.

THE DELAWARE NURSERIES
D. S. COLLINS, Mgr. ,Milford, Delaware

NEWKIRK NURSERY

NEWKIRK, O. T.,

Offers a first class assortment of stock at reasonable prices. Special low price on fine 3 year old apple trees. Address **A. L. Mathis, Newkirk, Okla.**

4,000,000 Peach Trees
TENNESSEE WHOLESALE NURSERIES
JUNE BUDS A SPECIALTY.

No agents traveled but sell direct to planters at wholesale prices. Absolutely free from disease and true to name. Write for catalogue and prices before placing your order elsewhere. We guarantee our stock to be true to name. Largest Peach Nursery in the World. Address

J. C. HALE, WINCHESTER, TENN.

Kansas City Nurseries

Located in the center of commerce, railroad facilities to nearly every point in Missouri, Kansas and other states, without change or transfers. Good first-class Fruit and Ornamental Trees, Shrubs, Roses, Vines, etc. A very large assortment for the city and country trade. Write for our 80-page descriptive catalogue. Address

BLAIR & KAUFMAN,
233-34 Rialto Bldg. **Kansas City, Mo.**

Catalpa Trees
(Catalpa speciosa)
SEEDLINGS IN LARGE NUMBERS

Twenty years' experience in growing this valuable timber. Excellent for posts, poles, ties and lumber.

Contracts taken for plantations of not less than 60 acres. A ten-year-old Catalpa grove is a gilt-edged investment.

GEO. W. TINCHER, Wilsey, Kansas

A CHANCE FOR A YOUNG MAN.

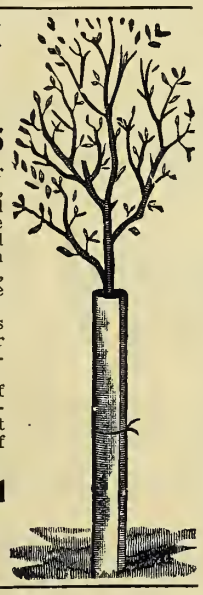
Would you like to fill a good position and draw a good salary? There is a good position awaiting the young man who reads this paragraph, providing he possesses the accomplishments. It is a difficult thing to find young men qualified to fill good positions. The demand is so great for competent office help that one business college, at least, finds it difficult to fill that demand.

Professor C. T. Smith, prosidont of the Kansas City Business College, and a life long educator, says, "We can not supply the demand made on this school for bookkeepers, stenographers, and skilled office help. Every seat in our school is occupied and more new students are coming. You see every new student is assured of individual, scientific instruction, and he is assured that when he finishes a course at this college that he will be placed in a good position. We mean just what this statement implies, and only wish that we had more students today, to place in positions that pay good salaries. Many new students are coming in the first of the year who prefer to come to the Kansas City Business College, after making a full investigation, in order that they may make no mistake in entering school where they will receive the best instruction. The question of tuition matters but little to the student; the principal fact to consider is what attainments he should have in order that he may make a successful business man, and never regret the time and money he has spent in securing his education.

The next term begins January 4th, and any young man contemplating entering a business school should address Professor C. T. Smith, Arlington Bldg., Kansas City, Mo., for catalogue, with the fullest confidence that it represents a thoroughly reliable institution.

We Believe in Protection

TREE PROTECTORS



Will protect your trees from rabbits, mice and borers; will also protect the stems from sun scald and can be left on during the summer, and will not injure the tree.

The cut represents our Tree Protector after having been applied.

Same are made of veneer, and are pronounced the cheapest and easiest applied of anything ever used.

St. Louis Basket and Box Co.
2nd and Arsenal Sts.
ST. LOUIS, MO.

Conover Peach

A Seedling Peach that comes true from seed.. Large size; fine quality.. A full crop this year.. The only kind that had a full crop.. Get some trees, raise your own tree without budding.

Ben Davis *Apple Trees*

Choice trees 5 to 7 feet, $7.50 per 100, f. o. b. A general line of trees cheap. Send for catalogue.

A. L. ZIMMERMAN
Weatherby, Missouri

FRUIT TREES

Pecans, Roses, Palms and Ornamental Shrubs

Our stock is carefully selected, and we guarantee satisfaction in everything we sell. A great variety is represented in our various lines and many of our specialties have gained international reputation.

We Conduct the Largest Nurseries in the South.

Write for our beautiful illustrated catalogue.

P. J. Berckmans Co., Inc.
Fruitland Nurseries, Estab. 1856.
AUGUSTA, GA.

100 TAYLOR Blackberries $1

The sweetest, best Blackberry for home use. Reminds you of the sweet wild berries of childhood's happy days. Can be planted as late as June 15. Add 50 cents per 100 if by mail. All other berry fruit plants. Catalogue free.

L. J. FARMER, Pulaski, N. Y.

Baldwin Cherry Trees

The largest, sweetest and best, is being planted from Maine to Oregon, and the supply of trees is being rapidly reduced. My Special Offer is good for only 30 days. 200,000 other fruit trees at wholesale. New descriptive catalogue free.

Baldwin, Nurseryman, Seneca, Kas

PECANS Full paper shells for planting or eating. Write for "Pecan Culture" and prices.
H. A. HALBERT, Coleman, Texas.

Blanching celery, combining the sturdy, solid habit of Golden Self-Blanching with the good qualities of White Plume. Among flower seeds the hollyhocks and other specialties for which Henderson is famous are pushed, as usual.

D. M. Ferry & Co., Detroit, Mich.—This firm is one of those which sends out a business catalogue for business farmers, with few frills and fancies. The 1904 catalogue is a most excellent one in every respect. Few novelties are listed, but special mention is made of some new strains of pansies, asters and a new mignonette, Ruby Improved Machet. Ferry's catalogue is always worth having.

Iowa Seed Co., Des Moines, Iowa.—This catalogue makes a specialty of listing the things which Western farmers want, and this year considerable attention is paid, as usual, to seed corn. Two new offerings in this line are included, New Century Wonder and the Golden West. Great things are claimed for these varieties, which are compared with the varieties for which Iowa is famous. All kinds of garden, field and flower seeds are listed, with small fruit plants, etc.

Lilly, Bogardus & Co., Seattle, Wash.—This is one of the very few seed catalogues which does not seem crowded. It shows up well and is well illustrated, although we believe it would be more attractive if some of the reading matter were not printed in red ink. The catalogue is very complete, and this firm seems to be doing a good business on the Western Coast.

L. Templin & Sons, Calla, Ohio.—A neat catalogue, with an especially attractive embossed cover. Full line of seeds, with small fruit plants. This catalogue makes no extravagant claims, but simply claims to list the varieties which will produce good crops, rather than some of the improbable yields which are sometimes represented.

J. A. Everitt, Indianapolis, Ind.—This is a seed catalogue which lists seeds of all kinds and also pushes the American Society of Equity, in which Mr. Everitt is so much interested. Some wonderful pictures of potatoes are shown over toward the back of this book, and if Mr. Everitt were not a newspaper man we don't know that we would believe quite all of them—but the pictures and newspaper men could not overstate the case.

F. B. Mills, Rose Hill, N. Y.—Last year we criticised this catalogue because it was so poorly printed. We are pleased that this year it is decidedly improved, and presents a really attractive appearance—and it ought to bring much better business. A fea ture is made of a prize collection of seeds, and also of several Shetland ponies which will be given to customers this season.

New Haven Nurseries, New Haven, Mo.—This firm sends out a neat catalogue and price list, which includes all the standard fruits and ornamentals. There are no fancy pages in the catalogue—simply a business book for business farmers. The New Haven Nurseries direct all their energy along this line.

Central Nurseries, Waukee, Iowa.—This is another good catalogue, paying more attention to the fruits which are grown farther north. Evergreens are a specialty, and two new fruits are listed, as explained in another column.

Seneca Nursery, S. J. Baldwin, Prop., Seneca, Kan.—Mr. Baldwin, as usual, makes a specialty of the Baldwin cherry, which originated with him. Catalogue lists a full line of fruits, with prices.

Fairbury Nurseries, Fairbury, Neb.—A good catalogue, with complete line of stock. A specialty is made of dollar collections of trees for the benefit of those who wish to buy on a small scale to test varieties. In addition to nursery stock, Mr. Hurlburt, the manager, quotes prices on Barred Plymouth Rock chickens and Mammoth Bronze turkeys.

D. McNallie, Sarcoxie, Mo.—Mr. McNallie deals in strawberry plants exclusively, and has an interesting catalogue. It gives descriptions of varieties and also Mr. McNallie's plan of handling a berry crop. There is a whole lot of good advice in the book, which is well printed and out of the ordinary of plant catalogues. Those who know Mr. McNallie will recognize his work on this catalogue, even though it bore no name. It is a good one.

A. R. Weston & Co., Bridgman, Mich.—Lists full line of berries, with particular attention to some of the newer sorts of strawberries. Half tone illustrations of some of the varietics are very good, and the catalogue as a whole is a good one.

Hubach & Hathaway, Judsonia, Ark.—This is a catalogue of new fruits, this firm having been prominent in originating some good varieties. The experimental work is conducted by Louis Hubach, originator of the Excelsior and the Bush Cluster, and other varieties of strawberries. This year some sixteen new varieties of strawberries are introduced, strong claims being made for some of them. Several cross-bred apples are introduced also, among them Arkansas Globe, Hubach's Favorite, Hathaway, Williams, Guinea and Arkansas Prolific. Those interested in new fruits, and especitlly in new strawberries, should have this list.

Gage County Nurseries, Beatrice, Neb.—Catalogue of general line of nursery stock, including small fruits and ornamentals. This is one of the good catalogues of the Western nurserymen.

Phoenix Nursery Co., Bloomington, Ill.—General line of nursery stock, also a list of greenhouse and bedding plants which are in demand in spring.

Allen L. Wood, Rochester, N. Y.—Catalogue of small fruit plants and grape vines. Mr. Wood makes a specialty of these and has issued a good catalogue. A feature is made of the McKinley Early grape, which was introduced by Mr. Wood several years ago. The catalogue is well printed.

W. S. Perdue & Sons, Parsonsburg, Md.—A folder describing and pricing varieties of strawberries.

J. G. Harrison & Sons, Berlin, Md.—A catalogue listing fruit trees and plants exclusively, with no ornamentals. This is a large nursery, making a specialty of commercial varieties for commercial growers, and the catalogue is gotten up along this line, and is a good one.

Hoyt Plant & Seed Co., St. Paul, Minn.—Catalogue of small fruit plants, also seed potatoes, seed corn and seed oats. This firm also handles berry box material for that part of the country.

L. A. Banta, Ligonier, Ind.—This is the catalogue of the "Ormas" incubator, and is a most excellently gotten up catalogue. The illustrations are excellent, and the catalogue should bring business. The title page, showing a field of young chicks, is out of the ordinary. This is one of the best incubator catalogues we have seen.

M. M. Johnson Co., Clay Center, Neb.—Makers of "Old Trusty" incubators and brooders. This catalogue, like all the other advertising matter sent out by M. M. Johnson, bears the peculiar earmarks of this individual. The catalogue is written in his peculiar style, tells all about the "Old Trusty" incubators and also what other persons say of them. This firm now has an office at St. Joseph, Mo., to provide better shipping facilities.

Sure Hatch Incubator Co., Clay Center, Neb.—Tells about the Sure Hatch machines, tells how they are made, shows the different styles and quotes from what users of the machines say. A very neat catalogue, with convicing arguments as to the merits of the Sure Hatch Incubators and brooders.

If You Receive an Extra Copy of January

Please hand it to one of your friends who is interested in fruit growing. We are sending out a number of extras this month as sample copies. If one reaches you use it to get up a club of "Five for a Dollar."

The Fruit-Grower Company
St. Joseph, Missouri

$6.95 BUYS BEST ONE AND TWO WHEEL **Garden Plow**

Hoe, Rake, Cultivator, Weeder and Hiller (combined) 13 tools. Does all work in garden or truck farm. Adjustable to every crop and all conditions. All steel but handles. Direct from factory. Weighs 25 lbs.

Hill and Drill Seeder

plants everything—$5.00. We pay freight. Best, biggest and cheapest line garden and farm tools at factory prices to introduce. Refer to any bank or commercial agency.

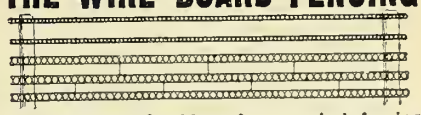
Hickox, Mull & Hill Co., Mfrs.
242 Superior St. Toledo, Ohio

Hardy, Northern Grown Nursery Stock

For 20 years I have been growing nursery stock. My location makes my varieties sure of growth—certain of bearing. To prove my stock is right; prices right; services satisfactory, send me a trial order. Apple trees, 3 to 4 feet, 15c; Plums, same size, 25c; Cherries, same size, 25c; Concord Grapes, $3 per 100; Evergreens, 4 to 8 inches, 10c each—in large lots for less. Or send for my free catalogue—full of truthful pictures—honest descriptions.

GEO. H. WHITING, Lock Box 1110, Yankton, S. D.

THE WIRE BOARD FENCING



Strongest, most durable and economical fencing on the market. This is a strong statement, but is based on actual experience, and absolute facts. We have the proof. Write for free sample and circulars.
The Truss & Cable Fence Co., 618 Cuyahoga Bldg., Cleveland, O.

OLDS' SEED CATALOGUE

now ready. Describes the best varieties of Potatoes and Field and Garden Seeds. Always a good crop when you plant Olds' Seeds. Get our catalogue before you buy. It's free—contains good line poultry supplies.
L. L. OLDS SEED CO., Drawer S, Clinton, Wis.

Hypericum Moserianum

A most useful shrub, that ought to be more generally known. It makes a good border plant, and is very effective in mass planting.

35 Cents Each.

Hundreds of other desirable hardy plants are described in my "Little Brown Book." A copy can be had for the asking.

HIRAM T. JONES

Union County Nurseries...

801 Salem Ave.
ELIZABETH, N. J.

Questions and Answers

About the Koonce Pear.—Replying to inquiry of J. B., Wathena, Kan. The Koonce pear is of rapid growth and its energy is directed towards the formation of wood, rather than fruit buds, and if not checked by pruning, drouth, or blue grass sod, the trees will be slow in coming into bearing. Where the annual growth is from three to four feet, as often is the case with this variety, at least one-half of this should be pruned away early in the spring. This will cause the lower buds to push and later develop into fruit spurs. Treated in this manner the trees will bear in four or five years from planting. The fruit is of medium size and fair quality for an early pear. The tree is hardy in Central Iowa, and free from blight.—M. J. Graham, Adel, Iowa.

Another view of the Koonce Pear.—I see the Koonce pear question was not settled. I will say this pear tree bears young, but the fruit rots badly at the core. I have pulled many a one, nice and fine looking, but all rotten in the center, only a thin shell outside. As to blight, it is about as bad as any other pear. Two years ago I lost several 3-year old trees—blighted to death, root and branch. Another bad fault is it grows limbs and makes top without the proper enlargement of the trunk or body or tree. I got my trees of C. A. Green, Rochester, N. Y. They are not of any value here.—J. W. C. Gray, Atwood, Ill.

To Check Bleeding of Apple Trees.—I see in your most valuable paper of December issue where Mr. A. R. C. of Xenia, Ill., asks for some information regarding apple trees bleeding where limbs had been cut. I would like to offer the following, and have you quote same in your questions and answers columns. I notice quite a lot of such bleeding in orchards in this section, much more so than in Illinois. Trees will take to it at the slightest cut or bruise or crushed limb. This has somewhat been agitating my mind and I have been experimenting somewhat by covering cut with shellac prepared as painters use to cover knots before painting, but I find where the bleeding is very bad this will not stop it as the moisture will not permit shellac to dry quick enough. Finally an idea struck me and I will make a test, and that is to heat a piece of iron red hot and burn the affected part so as to remove all moisture; then smooth with sand paper and then at once paint it over with the shellac well worked in with a brush, using all that will readily soak in. Then after the shellac is well dried, which will be in a few hours, say half a day, to be sure it's dry, I will give a good coat of paint, made of red lead and boiled linseed oil. I have an idea if anything will stop the bleeding this will. If Mr. A. R. C. or any other grower will try it, I would be pleased to hear from him with what result. I think the best time to apply would be when weather is so as not to freeze but before sap has risen in spring. Please publish same for I am quite sure good results will follow.—F. Ernst, Centerton, Ark.

E. C. B., Mayview, Mo.—(1) The leaves which you sent were held together, and to the tree, by the web of the leaf crumpler, a leaf-eating insect which can be destroyed by the arsenical sprays. (2) The eggs on the twigs are those of the apple aphis, or louse, which appears very early in spring; it is destroyed with kerosene emulsion or one o fthe insecticides which kill by contact. Neither of these insects can be destroyed by spraying while trees are dormant, although the masses of dried leaves can be picked off the trees, and thus destroy the leaf crumpler.

W. C. S., Hickman, Tenn.—I have about 1,200 apple and peach trees; would you advise me to begin spraying now, they are one year old from setting. If so, what size sprayer and what make should I use. (2) Would an early variety of apples be profitable to plant here.

Whether one should spray depends upon conditions. There is no need to spray so young an orchard until one has something to spray for. If canker worms, San Jose scale or any of the insects or fungous diseases which attack tree and foliage, are present, then spray; otherwise there is no need of it now. As to the size and make, that will have to be decided for yourself. One of the good barrel pumps should be enough for the present.

A. W. M., Orange, Va.—Please publish an article on the growing of cranberries.

So few of our readers can grow this fruit we would not be justified in the use of the space. There is a bulletin on the subject which can be obtained free from the United States Department of Agriculture.

G. W. H., Rogers, Ark.—Will wood ashes placed about the trunk of a peach tree keep borers away? Would the unleached ashes injure the tree? (2) I received some trees from a nursery which had masses of fibrous roots on them, about as shown by the inclosed sketch.

The ashes will not keep all the borers away, and it is best to scatter the ashes rather than pile in one place. (2) From the sketch you send the trees are infested with woolly aphis. If badly infested, they should not be planted, but if only slightly so the roots can be dipped in kerosene emulsion, or tobacco dust can be scattered in the hole in which the roots are placed. See discussion of the subject at late meeting of Missouri Horticultural Society, in December issue.

S. W. F., Washburn, Mo.—The little green louse of which you complain, on the foliage of your apple trees, is the common apple louse, which was unusually plentiful last spring. It is destroyed by spraying with kerosene emulsion or with kerosene and water, mechanically mixed with one of the newer style pumps. The injury to your fruit may have been caused by the plum curculio, which has attacked the apple the last few years, and concerning which we will have an article in the Fruit-Grower later.

F. N. P., Rogers, Ark.—I have just found that some of my peach trees are dead from borers, and I also find a small worm in the gum which exuded from the infested trees. What can be done for the trees which have not died?

Dig out the borers and fertilize the trees, giving them good cultivation, to help them to recover from the attack. The small worms referred to were doubtless an insect which had nothing to do with the killing of the tree, simply taking advantage of a condition which was to its taste.

W. C. W., Grand Junction, Colo.—The codling moth is about all that stands in the way of a crop of fruit for me What is the best way to proceed against this pest? Is there a book on the subject?

The codling moth is the worst insect the apple-grower has to contend with. One should spray just as the blossoms are falling, in about ten days later, and still a third time about ten days later, using any of the arsenical sprays. The Fruit-Grower will have some good articles on this insect soon. We can furnish a book, "Spraying Crops," for 50c, which tells of this and many other insects.

P. T. B., Sage, Ark.—Can I take up and reset an asparagus bed which has been planted two years? If so, how should the work be done?

Asparagus can be transplanted, but one or two-year-old plants are generally used. Asparagus is planted either in fall or spring, the former being considered by many the best, on account of there being more time to prepare the bed, which should be very rich.

W. T., Collins, Mo.—Can you tell me it there is a fluid which, if put on an apple tree containing borers, will so inoculate the tree as to destroy the borers?

Not that we know of. Have heard of such a remedy, but "we are from Missouri."

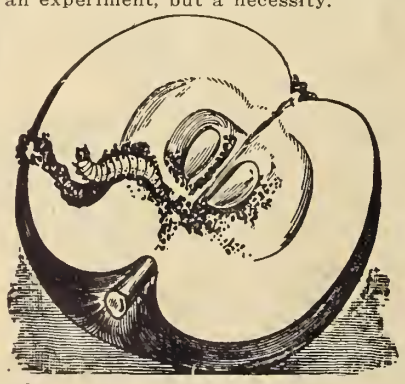
L. B., Baxter, Iowa.—What will Kieffer pear seedlings produce, pollenized by Kieffer pears alone?

If you mean that Kieffer pears were self-fertilized, and seedlings grown from seed produced, we cannot say what the seedlings will bear; nor can one tell just what any seedling will bear, as there is always more or less tendency to revert to the ancestral stocks.

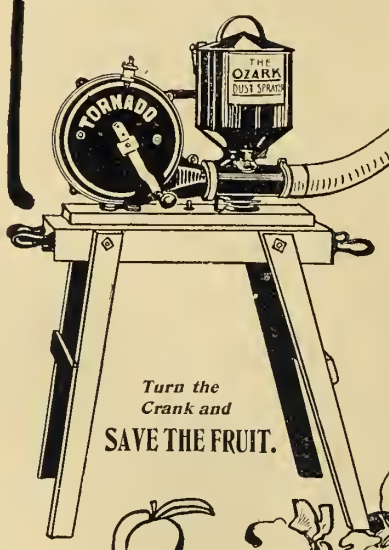
C. R. L., Logan, Mo.—Can any of the readers of the Fruit-Grower advise me how and when to plant navy beans? And how should they be harvested?

SPRAYING FRUIT TREES.

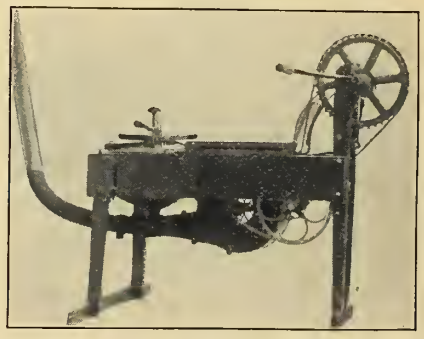
The question of spraying fruit trees to prevent the depredations of insect pests and fungus diseases is no longer an experiment, but a necessity.

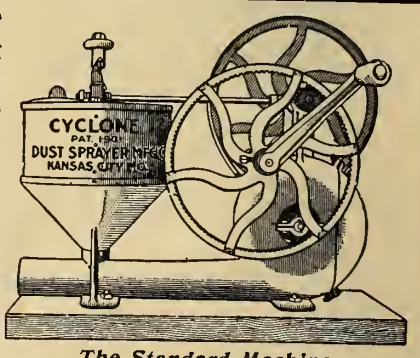


Our readers will do well to write Wm. Stahl, Quincy, Ill., and get his catalogue describing twenty-one styles of Spraying Outfits and full treatise on spraying the different fruit and vegetable crops, which contain much valuable information, and may be had for the asking.

THE OZARK
DUST SPRAYERS
For applying Insecticides and Fungicides to Orchards and Gardens, have supplanted Liquid Sprayers wherever tested.
In Hundreds of Orchards
last year, sections on which the OZARK SPRAYERS were used showed
More than Double the Yield
Of similar sections sprayed with liquid, and the work was done easier and for **thirty-three and one-third per cent less.**
The Ozark Dust Sprayers Are made in Three Sizes


And are adapted to the smallest Garden or to the largest Commercial Orchard. They are the lightest, simplest, cheapest and most effective of all. Are easy to carry, easy to operate and do the work thoroughly.
Write for Illustrated Booklet, telling all about them. It is FREE for the asking.
Turn the Crank and
SAVE THE FRUIT.
Haldeman Manufacturing Co.,
109 Sanlord Bldg., SPRINGFIELD, MO.

Kiser Whirlwind Duster
Patented April 16, 1901 LEADS THEM ALL Patented Dec. 2, 1902

Dust YOUR ORCHARD
Dust YOUR TOBACCO
Dust YOUR VINEYARD
Dust YOUR GARDEN
Dust Your Cotton Fields
Use lime dust instead of water. Destroys insects and fungi. Whirlwind for commercial orchards weighs about 100 pounds, crated. Whirlwind, Jr., for gardens, weighs 25 pounds. Capacity of large machine is 500 to 1,000 trees per hour, owing to condition of wind. Write for illustrated circulars and prices to
The Kiser Whirlwind Duster Mfg. Co.
STANBERRY, MISSOURI

ANNOUNCEMENT
To our patrons and others we beg leave to announce that we have solved the problem of applyying **chemically pure sulphate of copper to our trees and fruits in dust form, without any free acid, that will form no new inert compounds, positive in its action, no guess work in applying it; that will remain in suspension indefinitely, until applied to the tree and fruit, and there Mother Nature makes the Bordeaux by the action of the dew, moisture, and gases of the air.** Don't believe it? Well, write us for a sample and we will show you. **We will manufacture this stock compound as well as all our other formulae.** We have also 48 Cyclones crated that we will sell for $25, last season's price. Owing to the advance in material, the list price on this machine the present season will be $27.50. We will close out the above number at the old price, and guarantee them to be in every respect just like this season's make. You know what they are; first come, first served. Our new catalogue will be ready about the first of February. Appreciating the liberal patronage of the past, we hope to merit a continuance of the same by honest effort. Yours truly.


The Standard Machine
Dust Sprayer Mfg. Co. 510 BROADWAY Kansas City, Mo.

Strawberries
STANDARD BRED PLANTS.
Catalogue Free, which explains plant breeding, irrigation, and how I was able to pick strawberries for six months in 1903.
Cumberland, Cardinal, and other Raspberries, Blackberries, etc.
G. S. CHRISTY, - Johnson, Neb.

50,000 Apple Scions, 40 Varieties
1,000,000 Strawberry Plants, 10 Varieties
Get my prices. L. F. DINTELMANN, BELLEVILLE, ILL.

The SUDDUTH PEAR
Fruits when all other varieties fail. History and price list free. Agents wanted. **Augustine & Co., Nursery, Normal, Illinois.**
E. H. Sherman, Council Bluffs, Iowa, Agent for the sale of Sudduth Pear in Pottawatomie County, Iowa.

32 Page Catalogue Free, write for it today. Prices are right.

Headquarters for Apple Cions, at

The Sarcoxie (Mo) Nurseries

JAMES B. WILD & BROS., Props.

Cool Storage Building Capacity 25 carloads. For winter and early spring shipments. Storage list now ready. Write for it now.

Apple Trees GANO, Nixonite, Stayman's, Ingram, Hen Davis, Collins (Renamed Champion), Rome Beauty, Maiden Blush, and 50 other kinds.

Peach Trees Elberta, Slappey, Family Favorite, Carman, Heath Cling and 30 other kinds.

Pear Trees Kieffer, Duchess, Seckle, Bartlett, Anjou.

Cherry Trees Early Richmond, English Morello, Montmorency.

Plum Trees Wild Goose, Damson and other varieties.

Pecan Trees From nuts weighing 50 to 60 to pound.

Ornamental Trees

Evergreens

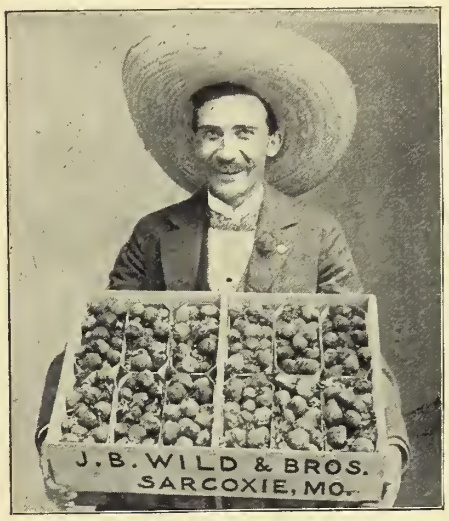
for Parks, Streets and Private Grounds

Lilacs Spireas

Shrubs, Roses.

Altheas Snowballs

Vines and Creepers.
Herbaceous Peonies and Plants.
Lilies, Double and Single; Hardy Ornamental Grasses.
Dahlias, Fifteen Kinds.



Strawberry Plants
Leading Kinds

No Agents--Sales Direct. No Trade Marks, No Seals.

"A little bombastic nonsense mingled here and there."

Steam tree diggers, did you say? Well, they are all right to photograph, "that's all." "Since inventing(?) our new(?) tree digger we have no use for the traction engine." "We find eight Missouri horses or mules now as heretofore sufficient to get good roots."

"Truth that became self-evident." It was GANO first, last and all the time. If it hadn't been for some "enterprising nurserymen" the Gano would never have been known. Later—"Well, hardly ever."

Cute persons wise in their own conceit, etc. After lifting them, one in each hand, I can tell them apart in the dark.(?) Later—"Did not know you were so smart." His suspicions were well founded, "For 60 years I have known of the confusion often growing out of local names for fruits and had supposed this Black Ben Davis-Gano was one of that character but I begin to think there is something else in it * * * for I want the correct name of every fruit I grow." F. F. Ahwahnee, Cal. The "Red Hot" firm had two letters from ———— nursery which almost begged for a (B.B.D.) "cull."—F. F. Madera Co., Cal. The reason it was not sent is because it would have proven that the so-called "Black Ben Davis" is **not** "as dark fleshed as Winesap" but just like Gano, showing his suspicions were well founded.

Our attorney at Washington, D. C., U. S. A., has gone into a trance "Rip Van Winkle like. We will leave him there for some future generation to wake." "Better Late Than Never." "When will come wisdom?" 12-12-1903. Will go out in neighborhood of Old Parson Black's and try to learn all I can of history of tree."

"The truth is all that I stand for." "It is only a foolish bigot who will not change his mind on sufficient evidence"—though it takes the wind out of some one's **sails,** leaving nothing to **crow** over.

"Mr. President, I can't tell a, a,—that Carter Orchard Gano exhibit was a boomerang"; "as dark fleshed as Winesap" was another; "Solid as rocks" ditto, showing that "Slow, expensive hard work is required to introduce new (?) apples."

They all look alike—GANO, Reagan's, Black Ben Davis—how could the Committee decide otherwise. That **SPRINGFIELD, MO., EXHIBITION WAS OF ITSELF A CONVINCER** to many.

"Those Carter Orchard Gano did not look like Gano to any one who knew the Gano."—Ed. W. F. G. and others. "They were the Red Ben Davis of Ark."

The Gano-Black Ben Davis Committee submitted its final report at Columbia, Mo., Dec. 10, 1903. Briefly quoted: "After finding no difference either in the fruit or in the trees by which they can be separated your committee is forced to conclude that Black Ben Davis and Gano are one and the same variety."

This disposes of the so-called Black Ben Davis as a variety. We receive many letters of an "Inquiring turn" asking us about **the full report** of the Gano-Black Ben Davis decision, so we had several thousand copies printed in leaflet form. You can have a copy for a two cent stamp, or 100 for 60c postpaid.

A copy of trade-mark No. 38556 on **"Black Ben"** (not on Black Ben Davis), for five cents while they last.

Will some of our Michigan readers answer this query?

A. L. C., Butler, Ky.—Where can I get grafting wood of the Winter Damson plum?

Who can answer this question?

T. J. Gates, Tyrone, Pa.—Please give me title of a good book on cabbage culture.

"Cabbage, Cauliflower and Allied Vegetables," is the title of a book on this subject which the Fruit-Grower can furnish for 50 cents, postpaid.

Subscriber.—Is it advisable to sow red clover in a bearing peach orchard?

While clean cultivation is recommended by most growers, except for cover crops planted in mid-summer, there are many growers with orchards on hillsides which are seeded to clover, to prevent washing. A strip can be cultivated on each side of the tree, or the space between two rows can be cultivated one year, and the next space left uncultivated; the next year they can be changed, alternating the cultivation. This will prevent washing. If any crop is to be grown in a peach orchard, clover will generally be recommended as one of the least harmful.

W. F. B., Cam Hill, Ark.—"To cut or not to cut." I planted eight hundred large one year old trees last spring, most of which have made a fine growth from three to six feet this season. These trees when planted had the roots cut back about one-half and the tops cut back to from two to two and one-half feet. Some fruit men here claim they ought to be cut back for the next two years. One very large orchardist says cut back next spring to five or six inches. Now, I would like to get the advice of the Fruit-Grower or some good man who has had experience as to how to manage these trees the next two or three years. I have from four to seven limbs. How many limbs should be left? How many buds should be allowed to grow on the stubs that are left in case they are to be cut back, and when should this cutting be done? I see Mr. Goodman in his paper in the December number of the Fruit-Grower advises but little pruning for the first few years while others advise most of the shaping and to be done the first few years. I forgot to say that these trees were apple, and most of them Ben Davis. I will appreciate any suggestions from the editor or contributors of this most excellent paper.

Growers differ as to methods of pruning. But we think very few will recommend cutting back your young trees as severely as you suggest, unless the limbs show a tendency to make too great a growth in one direction. If your tree is growing just as you want it, with the limbs at proper places, why cut them back or remove them? Look at your trees, having in mind an ideal just as you would like to have them, and then consider the pruning you should do. But don't cut off the growth just because you happen to have a good knife.

(Continued on Page 48.)

The Right to Sell Wine in Illinois.

Question—In the December issue of the Fruit-Grower you give the law of the State of Missouri in regard to selling wine made on the farm. Could you give us in your next number the law of Illinois in regard to selling wine, that is made on the farm or in the vineyard?

Answer—Under the law of Illinois, every farmer, fruit and wine grower, and gardener has the privilege of selling the product of his farm, orchard, vineyard and garden in any place or market, where such things are usually sold, and in any quantity he may desire to sell, provided he does not interfere with the regulations of any municipality as to obstructing its streets, and provided further, that he nor his agent or servant, does not sell to any minor without the written order of his parents, guardian or family physician, or to any person intoxicated, or in the habit of becoming intoxicated.

EASTIN & EASTIN,
St. Joseph, Mo.

Green Things Growing.

The Maule Seed Book for 1904 lies before us, and epitome of what the growing season of 1904 will produce. What is pictured and described in its 144 pages, the sun and wind and showers of the coming months will weave out in colors of living green on the bare ground on the farm and in the garden. The front cover page is a beautiful reproduction in colors of sweet peas, dainty and fresh as if the dew was still sparkling on them. The back cover glows with the colors of eight superb roses, and the other six colored illustrations bear out the promise of the covers. The book is especially strong in novelties. We don't know how many, but the first 30 pages are devoted to them, and include watermelons, squash, peppers, beans, peas, cabbage, tomatoes, cucumbers, beans, parsnip, radish, carrots, lettuce, sweet corn, asparagus, pumpkins and muskmelons. We are disposed to endorse these novelties and recommend them for trial from the fact that Mr. Maule has the reputation for introducing novelties which become standards. A new variety of seed does not obtain a place in his seed book until exhaustive trials under every possible condition have demonstrated that it has qualities which will rank it ahead of those with which it will come in competition. The ladies will be pleased with an announcement on page 129 which we commend to their attention.

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Apple trees a specialty. Our stock is guaranteed true to name. Write for prices.

BLEVENS BROS., Bentonville, Arkansas

The book is sent free to all readers of the Western Fruit-Grower who send their names and addresses and mention this publication.

Kansas Fruit-Growers Meet

(Continued from Page 28.)

land near Kansas City?" Answer—Would experiment very carefully.

"Will cherrics do well in wet soil?" No! (Unanimous.)

"Do they need cultivation?" Yes.

"Can sheep be pastured in bearing orchards profitably?" Yes, profitable for the sheep. For the benefit of trees, however, the sheep should be on the other side of the fence.

"How can one make a good quallty of cider and keep it sweet?" Leave 't in the apple.

"Is peach a good stock on which to work plum trees?" Waugh said that for the Japanese sorts, in Southern states, he would prefer the peach stock, but in Northern sections, and especially on heavy land, would prefer the Myrobolan.

"Is the Wild Goose plum self-fertile?" This stirred up a row. Prof. Waugh said not, and Mr. Entsminger agreed with him. Major Holsinger told of an orchard of 200 Wild Goose trees near no other varieties of plum near them. Kansas City which bore last season, with The discussion brought out the fact that there seems to be at least two strains of Wild Goose plums in Kansas, one self-fertile and the other not. As a safe plan, however, it was the general opinion that some other variety should be planted adjacent.

"What is the best variety of quince for Kansas, and where can it be procured?" Let someone else plant them. was one man's recommendation.

"Should pear trees be cultivated after third year from planting?" No, let the grass grow.

"What causes the sap to ooze from one peach tree, when one a few feet away appears to be perfectly healthy?" If a peach tree is injured by borers, bruise, sunscald, etc., the sap will be apt to ooze out. The oozing of the sap is a symptom of disease, but anything which injures the tree may cause it.

"Hardiness of Peach Varieties" was the subject of an interesting paper by William Cutter. Last season was a good one to test this matter. Matthews Beauty and Fitzgerald went with the Crawfords and Elbertas. The following were a little more hardy: Captain Ede, Old Mixon, Champion, Chinese Cling, Bonanza, Chair's Choice, Crosby. The following varieties made one-fourth crop: Triumph, Early Rivers, McIntosh, Bailey, Gold Drop, Greensboro, Carman, Waddell, Stevens' Rare Ripe. Mr. Cutter said he believed nothing in the way of hardiness is gained by getting the late blooming varieties, but he believes the size of bud is very important. The tight, compact buds are more hardy than those which are larger. No set rule can be laid down as to what temperature will kill peaches. Last year 6 degrees below zero, following a warm rain, killed the buds, at other times, when the air was dry, they have stood a temperature of 14 degrees below zero.

"Cnerries and Plums" was the subject of a paper by W. D. Cellar. He said the Dyehouse cherry is not much different from Early Richmond, with little difference in ripening. Montmorency follows Richmond and is a good variety. Morello is the best late sort, although subject to attacks by curculio. Mr. Cellar does not want cherries on Mahaleb stocks, for they are not always hardy. Prefers them on Morello stock. He would put Early Richmond on the warmest, earliest soil and Morellos on the latest, thus have a succession.

As to plums, the list is short. Damsons are good, but with this exception he would confine the list to the native sorts. Japanese are not profitable with him, although Red June, Abundance and Burbank do well in some places. Among the natives, Gild Goose, Wolf, Pottawatomie, etc., are best. Mr. Cellar recommended the keeping of nogs in the plum orchard to keep it clean.

George Holsinger said the Montmorency was their best variety of cherries. Mr. A. Willis said the Mahaleb was all right as a stock for cherry trees. The Morello stocks will sprout, and in buying trees the customers insist that they shall not sprout.

Mr. Cellar said that in a dooryard the sprouts would of course be a nuisance, but that in a commercial orchard it made little diference, for the cultivation the orchard should receive will keep them down.

Mr. Van Orsdal had planted cherries on Mahaleb stocks In 1871, and they had borne until last year, when they were cut down.

The only time the subject of apples came up was in a paper by Mr. G. A. Blair of Mulvane. This gentleman told of some orchards which had been defoliated by canker worms, because the owner would not spray in time. He had used the dust spray and noted no falling of the apples until July, and then they dropped badly. On the whole, his experience with dust spray has not been so satisfactory as with the liquid spray, although he believes it may be well to use the liquld early and then follow with the dust process. "The reason lots of orchardists fail in their spraying," concluded Mr. Blair, "is that they procrastinate, and the worms do not."

Prof. Popenoe said that was the whole secret. It is a sad commentary on the state, he said, that there are apple orchardists who are cutting down their trees because they cannot cope with the canker worm. The professor said he does not believe the dust process, as it has been developed, is as effective as the liquid. In the case of Bordeaux mixture, especially, he believes the dust process so far is weak. In regard to banding for the canker worms, Prof. Popenoe said for shade trees it would be all right, but for orchard trees he would rather resort to spraying. It has been supposed that the spring canker worm is the only one at work in Kansas, but Prof. Popenoe has found the fall species at work, too, so that of course it is too late now to band against this insect. He would spray just before the buds open and then as soon as the blossoms fall. Certainly would not spray while trees are in bloom.

C. E. Hildreth of Altamont talked on subject of "Handling Fruits," especially recomending that fruit be carefully graded and packed before being sent to market.

B. F. Smith read a paper on "New Fruits and Nomenclature," which appears elsewhere in this issue. Major Holsinger had one on the same subject, in which he said it was a pleasure to test new fruits and he believed members could well afford to spend some time in this way. He was rather severe on some of the names applied to some of the more recent introductions among fruits, and said the name given a fruit should mean something.

The committee on obituaries reported the death of several old members during the year, among them R. DeGarmo of Oswego, Martin Mohler, G. C. Brackett, first secretary of the society, who was also at one time secretary of the American Pomological Society; Dr. J. Stayman, who originated the Clyde and Stayman strawberries, the Stayman Winesap apple and the Ozark grape. Suitable resolutions were adopted concerning the death of these members.

The fruit exhibit at the meeting was small. One of the novelties was an exhibit of Ponderosa lemons which had been grown in a green house. Altogether, the Kansas meeting was a good one, it adjourned on time, and the small fruit men had plenty of time to discuss their favorite fruits.

NEW BERRIES.

I wish to introduce the following well tested seedlings:

"Goldsborough"—An almost ideal Strawberry; large and beautiful in shape and color; extra fine flavor; juicy, rich, sweet and fragrant; requires no sugar; plants free from leaf diseases; large and erect; buds and fruit protected from frost and sun; runner babits perfect. No berry known to me has so many good qualities. Very best for private gardens. Early staminate.

"Royal Straight Flush"—Very productive of enormous berries; firm and juicy, are not sour, but lack flavor and color; fruits on its runners in August and September; plants healthy, runners early and quick to root. Many crowns aud fine for single-year culture. Mid-season staminate.

"Duplication Gooseberry"—Mildew-proof; very productive. U. S. Pomologist said, July 1, 1903: "Tbese are tbe largest gooseberries ever seen here." Write for descriptions.

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Than whom there is no better potato expert in the country says: "Salzer's Earliest Potato is the earliest of 38 earliest sorts, tried by me, yielding 464 bu. per acre." Salzer's Early Wisconsin yielded for the Rural New Yorker 736 bu. per acre. Now Salzer has heavier yielding varieties than above. See Salzers catalogue.

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E. G. Mendenhall of Kinmundy, Ill., has again been elected secretary of the Horticultural Society of Southern Illinois, being the fourteenth consecutive time. This is one of the leading horticultural societies in the West. Five years ago in reading of the Clarks Extension Reversible Orchard Harrow being used in California and Florida, he felt satisfied it was the one long needed want of the orchardist, as he like many others had been using the old breaking plow and common drag harrow, doing the orchard more harm than good. After getting an A6 Clark's Cutaway and seeing the remarkable work done and the great saving to his pocket, he made arrangements with tne manufacturers to push the sale of these harrows in a limited territory, which they have constantly added to until he has pushed these goods over the entlre Central and Western states. Messrs. Clark also make a line of valuable tools for the farm and push them llvely, having a heavy trade in many sections of the country.

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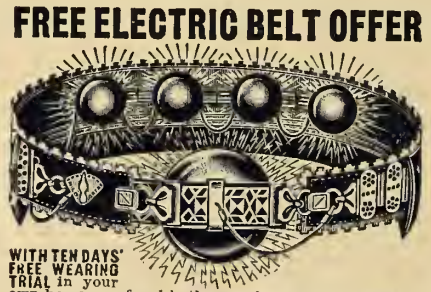

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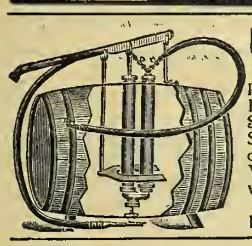

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SEARS, ROEBUCK & CO., CHICAGO.

Meeting of Ohio State Horticultural Society

The thirty-seventh annual meeting of the Ohio State Horticultural Society took place at Delaware, O., December 9, 10 and 11, 1903. The forenoon of the first day was devoted to the arrangement of the exhibits. We never had a better display of apples at the annual meeting and the specimens were large and showy. There was keen competition on nearly all kinds and many valuable varieties were shown, among them were several promising new varieties of fine quality and good appearance. The committee on awards made a new rule, withholding premiums from fruit affected with San Jose scale. More pears were shown than usual and some fine ones, too. There were only a few grapes and one lot of prunes or plums which had not been in cold storage. There was a small display of fine nuts and some nice potatoes and flowers. Mr. F. H. Ballou had charge of the exhibits and everything was arranged in perfect order so visitors could see which were the different varieties and the competing plates. A large card was tacked in front of each entry with the name of the variety shown behind it. Some apples were shown from a Red Russet tree, part of them were red apples and others were simply Russets and they were said to have been intermingled that way over the tree and it was not the work of budding or grafting in the top limbs.

Pres. Wm. Miller called the meeting to order in the afternoon and the secretary, E. M. Woodard, of Willoughby, occupied his chair and occasionally took the name of a member and his dollar. The attendance was good and the interest and enthusiasm was never better and some of the best papers ever read before any society on horticultural topics were delivered there. The state is divided into ten districts and a member of a committee is appointed from each district to make notes on crops and conditions and markets. These members read their reports first and the general feeling is that the supply is not keeping pace with the consumption and quality is being appreciated more as the years go by and better prices are being paid for what looks well and is not disappointing.

Cleveland has proven to be the poorest market for Kieffer pears and they will not even sell well when properly ripened. Thinning fruits is looked upon with more favor and spraying is becoming more universal and producing good results where properly done. More fall grown strawberries ripened the past year than usual and several reported that they had been put on the market and sold at from 25c to 40c per quart. It was a question whether this fall fruiting would lessen next spring's crop. It was proven that electric lights caused vegetables to make better growth than they did in the dark. Prof. Lazenby and Secretary Woodard attended the meeting of the American Pomological Society at Boston and reported the meeting and their trips.

At the evening session Mayor Clipinger gave us an address of welcome which the members and the people of Delaware might well feel proud of. He didn't give us any taffy, but he cited one fact among the many that too many growers are following, "they will not spray without a written guarantee that it will bring a reward." Pres. Miller read his annual address and a few of his points were so well taken that one could not help but be impressed with his ideas. Watered stock is talked of in a commercial way but the fruit grower with watered stock is all right and the better it has been watered the more money he gets and the better the consumers like it. This society is a missionary society and its aim is to quench the thirst and appetite with good fruit. The commission that has charge of the appropriation for the World's Fair will ask for another appropriation at the convening of the next legislature so the society can have some money to make an exhibit of fruit. It is considered too late now to get things ready for a show at the opening of the Exposition, and it was said to be a burning shame for that commission to use all the appropriation to erect a building for the State of Ohio and to bum around on, and then want the growers to make exhibits without pay for their products and the care to put it up. The society is not taking any steps to fill their allotted space of 1,000 feet in the horticultural building at St. Louis with last year's crop. Several sub-stations are recommended for experiments in fruit growing in the several parts of Ohio under the direction of the state experiment station and a law is needed to place the horticultural interests of the state in the hands of the State Board of Agriculture, making it a department with a permanent secretary at the capital to attend to the business.

A professor from the Ohio Wesleyan University, in place of the president of that institution, made a good address and said it is our duty to get together and do the best in our business that is known and make the most of our opportunities to learn all that can be taught and found out about it.

Thursday morning Prof. A. D. Selby of the Ohio Experiment Station read a paper about the water factor as pertains to plant growth and fruit in particular, and it was the best paper read at the meeting, and the most timely. He cited the fact that the leave form such an important part in the productions from our farms and likened the cells in the plant or tree to a pump log making a way for the water to pass through to perform its mission. Sub-irrigation hands in more water to the roots and the plants make better growth than when the watering is done at the top of the ground. Most of the soil moisture comes from rain and to retain it is the important thing. Mulching and cultivating are the principal ways to prevent evaporation. After the water has passed off from the leaves and the plant food was left behind to build up the plant it goes back into the plant but it is undoubtedly stored locally in the twigs of the trees, as one side of an apple tree may bear one year and the other side the next year.

L. B. Pierce devoted a short time to the subject, "Flowers and the Lawn," and who can doubt the benefits and appearance of beautiful flowers to adorn the ground about a home. Prof. S. A. Beach of the New York Experiment Station talked on the Pedigree Question and told us how new and old varieties are grown, the various methods of propagation and fixing a type for a variety, the results of environment, etc. He showed specimens of Baldwin apples from the State of Washington and they were all longer than the same variety that grows here, the cause of it being due to environment. Propagation should be done from trees that have individual merit and the fruit crops will be better accordingly if the trees have the right kind of care.

"The Amount of Waste in Different Varieties of Fruit" was the subject of a paper by Prof. Lazenby of the Ohio State University at Columbus. There is less waste in apples than in any other fruit. The amount of waste in the best grade of apples runs from nine to fifteen per cent and it is less than twenty-five per cent in common cooking apples. Apples are composed of water mostly and the percentage runs from 87.9 to 91.41 in good stock, the average 89.75 per cent. The varieties of best quality have less than ninety per cent water. The apple is the most economical fruit to buy.

Dr. J. W. Bashford, the president of the Ohio Wesleyan University, came in and he was called out for an address. After a few brief remarks he dealt some mighty blows for the colleges of liberal arts and applied sciences. He said Germany had forged ahead of Great Britain because of her technical schools and he urged us to demand of the legislature an appropriation to establish courses in our State University or in some school so the students would not have to go away to New York Pennsylvania or some other state to get a technical education, and if we had such courses Ohio would forge to the front and be the foremost state in the Union.

Fruit notes of the year as gathered at the exeriment station were noted by C. W. Waid. Among plums Grand Duke and Arch Duke were the best in some particulars, being free from rot, while some others all rotted. The curculio got in its work but it did not injure the American varieties much. Greensboro proved to be the best very early peach and Triumph was no good at all. It rotted and was the source of infection for other varieties. Carman is promising. Thinning apples created some surprises and some trees that were thinned produced more bushels than those that were not thinned. Of the former it took 128 to make a bushel and 204 of the latter. (The grower who is thoughtful of his business will take note.) Twig blight was the worst ever known, and Wealthy, Belmont and Smith Cider were affected worst. Frost injuried strawberries as much before the bloom opened out as after and mulched berries suffered also. The mulch retarded the season of ripening. Johnson's Early was the best very early berry. Late spraying of grapes proved very valuable and saved the crop and it was all lost where not so treated. The unfavorable season was a poor year for experiments.

In discussing strawberies W. W. Farnsworth said that the runners must not be allowed to grow unmolested if the best berries are to be harvested and some runners must be cut off. The best corn cannot be grown with ten stalks in a hill. Some thinning must be done. Frost killed mulched berries the worst. A grower need not expect to succeed with large plantings at first. He must grow into the business.

F. H. Ballou read a paper on Raspberries, W. N. Scarf one on Blackberries and C. W. Montgomery one on Currants and Gooseberries, all worthy productions from practical experience. Prof. Beach gave another lecture, on Principles vs. Rules in Orchard Man-

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The National Fruit Grower, St. Joseph, Michigan

agement and Prof. W. J. Green of the state experiment station pictured to us mentally the effect of mulching. It will pay to haul and even to buy material to mulch orchards and what grass grows on the land should be mown and left there. Mulch and plenty of humus holds water in the soil like a sponge. There is never a sign of distress in time of a severe drouth where the mulch and humus are sufficient. Have no crop in the life of an orchard except apples and have an accumulation of food and moisture. It is good life insurance. There are three modes of treating an orchard, cultivating, mulching and pasturing. Some land will wash with the first kind of treatment, stock destroys some of the fruit where pastured and that mulched will produce fruit of the best color and best keeping quality and the land will gradually get richer. The fruit ripens earlier and drops worse and lacks color and keeping qualities when grown on cultivated land.

Wednesday night Prof. P. J. Parrott formerly of the Ohio Station but now of New York gave an illustrated lecture on "The Results with the Sulphur Sprays," and Thursday night Prof. Selby lectured on the "Season's Outbreak of Diseases," giving illustrations of the many diseases met in practice on the farms.

Prof. Lazenby conducted a symposium on horticultural topics, consisting of more than 20 three-minute speeches by Ohio horticulturists and there was some fun along with some of the talks.

Friday morning the report of nursery and orchard inspection was read and E. H. Cushman in discussing it said the loss falls mostly on the small grower and city people with a nice lawn. The commercial grower can take care of his own trees, but the business man in the city with a home and a lot dotted with beautiful trees and shrubs cannot treat them against the San Jose scale. Competent workmen should go about treating such premises and they should have a certificate from some authority to show the owners that they are competent and responsible. There are frauds going about treating premises for wealthy men at exorbitant prices and saying the trees are covered with scale when they are not. The stranger with his own sure cure should be let alone.

W. H. Owen says that compressed air after the Loop method is the most ecnomical power for spraying on a large scale and for dormant peach trees a gas pipe with a nozzle or two every foot with the operator standing on the platform of the wagon to direct the spray as the team goes through the orchard, stopping once in a while to let the operator catch up when he gets behind with the work, is a better way than to have the nozzles at the end of a rod. For trees with foliage it does not do so well.

F. P. Vergon thinks it will pay the orchardist to prepare his own arsenate of lead and there is danger of getting adulterated material to make it. Mr. Burgess said the arsenite of soda costs 8½c per lb and the acetate of lead 10½c per lb, and it takes 12 oz. of the first and 33 oz. of the latter for 50 gallons of water.

President Miller declined to act further as the society's executive and W. W. Farnsworth was elected president, the other officers were re-elected and the place of meeting next year is Chillicothe.

Thoughts Gathered by the Wayside.

Prof. Selby said that ground lime packed in barrels is better for making spray mixtures than the lump lime, as there is less sediment and it is finer.

A. I. Loop showed a device to strain the liquid as it leaves the pump and before it goes through the hose so the nozzle will seldom or never clog. He has a patent on it.

Several said apples are not keeping well this winter. The writer thinks his own are keeping the best he ever knew.

Oil should be put in compressed air tanks and spraying pumps to prevent rust.

The hand pump will answer for the small orchard, but some power will have to take the place of man's muscle in the pumping for the commercial grower.

Will a tree that has been set out where a horse had been buried produce better fruit than another near by and will it be better to propagate from than the other, or has it a better pedigree?

Pecans and English walnuts are bearing in some places in Ohio.

And we had inspiring music by a female quartette.

Lawrence Co., O. U. T. COX.

If you think this issue of the Fruit-Grower is a good one, why not tell your neighbors so, and get their subscriptions? The Fruit-Grower relies on the members of "The Family" to help increase our circulation by several thousand subscribers during the present season. Will you do your part, and send us a list? Remember, four new subscriptions and your own renewal, all for $1.

Meeting of Iowa State Horticultural Society

The 38th annual meeting of the Iowa State Horticultural Society was held at Des Moines, Iowa, and closed December the 10th.

One of the most interesting features of the meeting was a splendid exhibit of fruit, from the northern part of Iowa, a section where only a few years ago it was thought that trees would not grow, and orcharding regarded as impossible.

A paper on the subject of "Tree Planting on Northern Iowa Prairies," was presented by Mr. W. A. Burnap of Clear Lake. He spoke of the great change that had occurred since he came to Iowa in 1857. At that time this entire region was one vast stretch of prairie and represented a treeless sea of land. Tree planting in this section has not only made a land of beauty, but without doubt has modified to quite a degree its climatic rigors. Trees have not increased the rainfall, but they have stopped the winds. The groves and wind breaks have decreased the number of blizzards. Mr. Burnap stated that at an early date it was necessary for the farmer to keep his clothes line stretched from the house to barn in winter, to keep from losing his way.

Iowa Commercial Orchards.

Mr. Joe S. Trigg read a paper on the experiences of the residents of northern Iowa in endeavoring to establish large commercial orchards.

About thirty years ago a man from the fruit raising belt of York state settled in northeastern Iowa. He was imbued with the spirit of raisers and one of the first things he did was to set aside a tract of thirty acres for an orchard. He imported varieties from York state. The weather was fine for a few years, and the young trees thrived. All was going nicely. Following the first bearing season, when the trees bore well, came a hard winter and a drouth the next year. The first crop was the last he secured. Every tree was dead within a few years. The climate was the secret of it all.

About ten years ago a number of Russian varieties were introduced from a section where the climate is similar to that of Northern Iowa. These have not all proven satisfactory, by any means, but among them we have secured a few valuable summer and fall apples, and they have aided in making fruit growing in Northern Iowa a success. Seedlings from them intercrossed with American varieties will probably prove more valuable yet.

"There is money in good orchards," said Mr. Trigg. "With the proper varieties and proper care a good orchard will pay $60 per acre for the land. more than can be obtained from cows, hogs, corn or any product the Iowa farmers have been devoting their attention to. After the orchard is under way it should be carefully attended. The fruit industry is bound to grow in Iowa and the ones who make a success of it first will be the ones to reap the big profits."

New Varieties of Apples.

The State Experiment Station in cooperation with the Horticultural Society, is giving especial attention to the subject of seedling varieties, and has strong hopes that from this source they will be able to originate new varieties of winter apples, which are better adapted to Iowa's peculiar climatic conditions.

Mr. Eugene Secor led the discussion along this line of thought in a paper on "Do We Need Additional Varieties of Apples in Iowa?" In part his paper was as follows: "Conditions in Iowa are very peculiar from a fruit raiser's point of view. Its climate is unlike that of any other portion of the known world of similar extent. The variation is so great that entirely different varieties of fruits are needed in the northern and southern districts of the state. The rainfall differs greatly, probably ten inches between the southeast and northwest corners of the state. The soil in the different parts of the state is very different.

"In consequence of these conditions it is difficult to treat Iowa as a whole. We have some very good varieties of the apple, especially adapted to southern Iowa. Northern Iowa is not so well equipped, and the introduction of a new variety there will be hailed with joy. All our best apples are Americana. Farmers in northern Iowa who have attempted to raise fruit have reaped some rich experience in years gone by, and the present generation is gathering fruit from their efforts. More experimenting should be done, and until new varieties are discovered apple raising in Iowa will not reach the height of success."

Shelter Belts.

Iowa was essentially a treeless state in its native condition, and at present less than 12 per cent of its total area is in timber. As a result the winter winds are very fierce and sweeping. On account of these conditions the subject of shelter belts is of prime importance to the fruit grower and general

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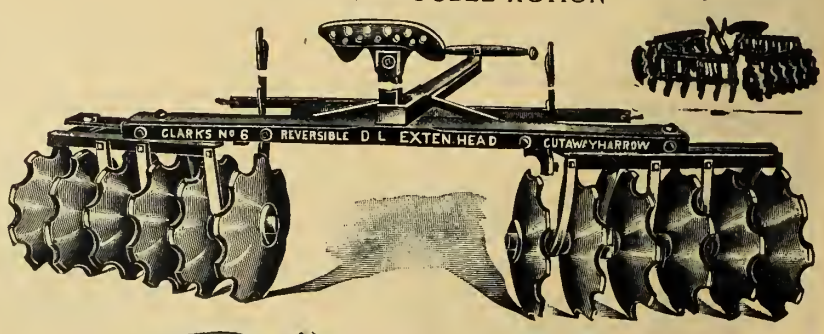

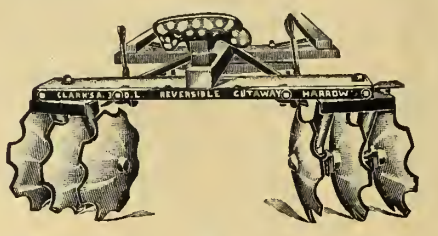

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"Three acres in blackberries made me $100 per acre clear of freights.

"I had about one acre of sweet potatoes that I got $100 out of.

"I have four and one-half acres of fall Irish potatoes that are making 50 bushels per acre, or at least what I have dug turned out that way, and they are worth $1.00 per bushel here now. I got these potatoes from land that had previously made me over $200 an acre in my spring crops.

"Besides my crop of peaches, I got a fine lot of peavine hay that grew among my peach trees.

"You see we can begin to ship our vegetables so early that we have them harvested in time to make another crop or two of something else before frost comes. I shipped strawberries this year April 20; tomatoes, June 1; cantaloupes, June 1 to 15; blackberries, June 1; sweet potatoes, August 15, which gives us plenty of time for other crops to be grown on the same land."

(*Signed*) J. F. RAY, Tyler, Texas.

The above is one of many statements selected at random from our new booklet entitled "Fruit Growing and Truck Farming Along the Cotton Belt Route." A copy of this illustrated booklet will be sent free to any one mentioning Western Fruit-Grower

J. F. LEHANE,
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TYLER, TEXAS.

COTTON BELT ROUTE

E. W. LaBEAUME,
G. P. & T. A., ST. L. S. W. RY.
ST. LOUIS, MISSOURI.

farmer. Mr. E. E. Faville gave a talk on "Shelter Belts."

The farmer who resides in a treeless region appreciates the importance of the wood lot as a windbreak in addition to its value as a fuel producer. The early settlers of our state appreciate fully what this means, as they have seen the growth and development of their windbreaks on their prairie farms. They have witnessed from its early planting, the production of wood, which has been used for their fuel, fencing, and other uses about the farm, and in addition have seen their farm land enhanced in value on this account.

To the farmer of the treeless section of the west the importance of forestry should be of great concern. Shelter belts and windbreaks add to the value of the farm and to the comfort of farm homes. There is another reason why the farmer should be interested in forestry. He is dependent upon forestry to supply him with wood for the building of the machinery which he uses. His products must go to the market in wooden cars over wooden sleepers. Wood, therefore, is one of the mainstays of his farm operations. It stands the farmer of to-day well in hand to become informed upon the very best methods of tree planting and protection suited to his local conditions. The introduction of Arbor Day exercises into our public schools and colleges had a wholesome effect in interesting the young.

A Cherry Disease.

Professor A. T. Erwin of the Iowa Experiment Station discussed a cherry leaf disease, which has been very prevalent and destructive in Iowa, for the last two years. The presence of this disease is first indicated by small brown colored spots, which appear on the leaf. These become larger and turn black and about the middle of July the entire leaf turns yellow and drops. This trouble is due to a fungus disease and has been unusually prevalent tne last two seasons on account of the moist humid atmospheric conditions, such conditions furnishing an ideal state for the growth of the disease.

The disease has been much worse upon low ground than on high, and some varieties are affected more than others. The sour cherries may be conveniently divided into two distinct types. First, those with a colorless juice, of which the Montmorency and Early Richmond are good examples. Second, those with a colored juice, of which the English Morello is a well known variety. Through personal observations and the experience of others, we have noted that all of the varieties belonging to the English Morello type are much the more susceptible to this disease.

In many cases with the English Morello, the foliage dropped the past season when the fruit was two-thirds formed, and the crop was a total failure. On account of its lateness of ripening the disease gets a good headway before the fruit can be gathered, and it is impossible to spray with Bordeaux after the fruit has begun to color.

Spraying has been very difficult the past season on account of the soft ground, and frequent rains. However, there has never been a season when it was needed more, and what spraying there was done, paid well.

Professor Erwin stated that he had not succeeded in freeing the orchard from the disease with Bordeaux mixture, on the other hand the disease did not succeed in destroying any of the Experiment Station's trees, while in many orchards of the state the unsprayed trees had been entirely killed. Trees that were sprayed were somewhat affected, but were able to maintain a sufficently healthy foliage to make good wood growth, and ripen the same properly. He also advised that many of the trees affected last year would be in a very weak condition next spring, and that it would be highly important to give these trees careful attention and nursing to pull them through this critical period.

The fruit exhibit was almost entirely from the central and northern half of the state, the southern section being unrepresented on account of a late freeze. Among the best commercial varieties exhibited we noticed the Wealthy, Northwest Greening, Pewaukee, Grimes, Jonathan and a number of promising seedlings.

Mr. P. F. Kinne of Storm Lake was elected President; W. A. Burnap, Clear Lake, Vice President; Elmer Reeves, Waverly, Treasurer; and Wesley Greene, Des Moines, Secretary. The spirit of the meeting was entirely harmonious and inspiring throughout and the convention was regarded as one of the most successful held for several years.

The "Acme" Pulverizing Harrow is sent on trial to be returned at the expense of the manufacturer if not entirely satisfactory.

Plant Hardy Trees.

The winter of 1902-1903 was the most severe for many years. We lost thirteen six-year-old Lawver apple trees out of twenty-one, and all were injured. This proves to us that Lawver is a good tree to let someone else plant. The very hardiest varieties are what the Maine orchardist must plant. Not a bud was injured on 500 Wolf River trees. All Wealthy, Ben Davis, Black Ben Davis, Stark, Salome, Gano, Longfield, McIntosh Red, Snow, Sutton Beauty and Champion are in fine condition. Baldwin, York Imperial and Apple of Commerce were hurt, but very few killed. Most of the Japan plums were badly injured, some killed to the ground. Wickson, Hale, Berckman's and Orient the most tender. Yellow Japan seems the only one to be perfectly hardy, while Red June and Gold are nearly so and Abundance and Burbank about an average. Of twenty-nine varieties of pears the Wilder Early seems the only one not in good condition. Wilder Early has always been one of the poorest growers in our list. Of seventeen varieties of sweet cherries, only one, the Early Purple Gueine is hardy enough to be worth planting in this locality. The few sour varieties which we have were not injured. Those who have been experimenting with peach trees will probably go out of the business, as every tree is dead or nearly so. Nearly all the American and European plums stood the test very well. Lombard, Gueri and Shipper's Pride, hardy as oaks; Bradshaw wood slightly colored.

There should be a law against selling any nursery stock in Maine known to be not hardy. Much money has been wasted by planting tender varieties. There are many people who have not found out yet what killed their trees. It is surprising to find how many people there are who won't even believe that one variety is more hardy than another. Probably more Baldwin trees have been planted in the past in this state than any other variety, yet it is one of the most miserable trees in the entire list—it must have extra care to ever amount to anything, consequently the greater part of them are a failure. We can get a fair kind of a tree by top-working Baldwin on some good stock, but even then it is not a hardy tree nor strong wooded, and nearly always black or red hearted. The Maine orchardist must plant hardy stock to get best results.

HARRY W. LITTLEFIELD.
Brooks, Maine.

A Suggestion as to Feed Mills.

A feed grinder to properly prepare the food and avoid waste is fast coming to be the rule rather than the exception. This fact has created such a demand that a large number of mills have been patented and are offered to feeders from which to choose. Among the best of the mills, all things considered, is the triple geared, ball bearing grinder, manufactured by G. M. Ditto of Joliet, Ill. Two points always to be borne in mind in selecting a mill are easy grinding and rapid grinding. On these two points the Ditto advertisements everywhere unequivocally invite intending purchasers to return his mill if it is not found on trial to be the fastest grinding and easiest running. No money is required in advance. That is made as prominent as anything else in the advertisements. The mill is adapted to grinding ear corn and everything from that on down, including the small grains. The ball bearings in connection with the triple gear account for the rapid grinding without worrying the team. If any of our readers are still in need of a mill they should investigate Mr. Ditto's before placing an order. He will forward descriptive matter and the trial under his policy of selling will cost you nothing if the mill does not prove the claims made for it.

About Carborundum.

A good deal of interest has recently been awakened over the abradent or grinding material, Carborundum, which has eight times the efficiency of an emery stone and grinds some twenty times as fast as the ordinary sand grindstone. It is of interest just now to our readers from the fact that the Luther Bros. Company of Milwaukee have secured the exclusive right to use Carborundum in making hand and foot power grinding machines, that being the abradent used in that excellent combination machine, the Bi-Pedal Sickle and Tool Grinder, which they are now advertising in our columns. It is a substance new to the world, even to nature itself. It is formed by fusing sand, sawdust and salt with coke under the almost inconceivable heat of 7,000 degrees. In hardness it is exceeded only by the diamond. It is frequently referred to as the Niagara Electric Stone Diamond, from the fact that the immense power of Niagara Falls is employed in the electric furnaces for its production. On account of its wonderful cutting qualities the grinding of all tools requires but a small fraction of the pressure that is used with the sandstone. A free sample of this wonderful grinding material with a booklet setting forth its powers and use may be had by addressing Luther Bros. Company at the address given in the advertisement.

A Missourian's Visit to Luther Burbank

After having visited sixty towns in California, ranging from the extreme south, San Diego, to Redding in the north, and spent an average of four days at a place, I find myself in, horticulturally speaking, the most noted town of the "Golden State." It lies sixty miles to the north of San Francisco, and contains about eight thousand people. While Santa Rosa is known at home as being the center of one of the best general fruit sections of the state, it is most noted abroad as being the home of the world's most renowned horticulturist, the "wizard of fruit and flowers," Luther Burbank.

Sometimes Mr. Burbank is spoken of, in compliment, by his unintentionally sacrilegous admirers, as "the man who has beaten the Creator at his own game"—improving on and creating new fruits and flowers and other vegetation.

Well, as the readers of the Western Fruit-Grower have other and better means than a mere letter of knowing about the many special creations of Mr. Burbank in the past I'll not repeat, but will tell them of my visit with the man who has knocked both ends and sides out of some of the old theories in botany and fruit and vegetable culture.

My first meeting with the world-renowned experimenter was especially interesting to me. I had been inquiring of some men on the street where he lived when one of them remembered to have just seen him pass on his wheel.

In a few minutes more another man pointed out a little group of five farmer-looking men talking on a street corner, saying: "Now, pick out of that group of working men God's right bower, by his looks."

Well, if I hadn't been familiar with his picture, in catalogues, I might have missed him; that is, at a distance. Close by any one familiar with intellect and character through physiognomy would readily pick Luther Burbank out of any crowd of common looking men. More: he would soon feel that he was being sized up himself by magnetic eyes.

Well, I couraged up, picked out my man and introduced myself as a fruit-grower from Missouri. I say couraged, for I remember the time when it did take courage for one far from home to say he was from Missouri.

You remember the story of the fellow who once went to Chicago and fell in with some sharpers who tried to bunco him. "Wahl," said the "Amarougian": "I'm from Missouri; you'll have to show me."

Well, even now when a Missourian introduces himself some people often still smile, or even laugh and jokingly repeat: "You're from Missouri and have to be shown." But many far western people have come to learn that if they meet a good, honest looking fellow, with seeming gray horse sense, he is apt to be from Missouri.

Well, with six thousand callers a year the commoner, Luther Burbank, knew where to put the Missouri fruit grower and made him feel at ease at once; of course with the pleasant reminder that I'd want to be shown. How I've come to enjoy the old joke!

Yes, Mr. Burbank tells me he had 6,000 callers last year and his stenographer verified it by the register. It is amusing to hear him tell, in his peculiar manner—which is a cross between disgust and sarcasm inspired for the occasion—how small things bring people to him. One man wanted to plant an acre of Burbank potatoes and brought a bucket of soil twenty-five miles to have it examined for suitableness. Another returned five miles to get three yearling walnut trees to make his count of 500 good. Thousands, from the tramp at the back door to the royal tourist from Europe, call on him through curiosity; all surprised to see the common, sensible looking working man that they find. He says that not one visitor in one hundred has any thought of the value of time.

Here I might have felt a hint, but instead of that felt that I was from Missouri and had come thousands of miles to be "shown." Well, I was fortunate in having been invited out to the home of the great naturalist, he knowing something of me through the Western Fruit-Grower and other horticultural literature. Then the rain, too, kept others away while I had a full hour's visit with him and his principal stenographer; who, by the way, seemed as familiar with the gentleman's great work as he does himself. I say great work, for no one can have any conception of his undertakings who has not heard it from his own house. To say it is overwhelming but faintly expresses the idea. How one mind and two hands can individually attend to so many things requiring such exquisite care is simply wonderful.

Luther Burbank in appearance and demeanor is a plain man, typical of the practical fruit growers we meet at state conventions. He is an old bachelor of fifty-four, looking not over forty-five—having escaped the friction of "womanation." His old mother, now past ninety, lives with him. Mr. Burbank did not tell me why he never married but I read his mind that he had no time, beginning this work at nineteen, to give the several thousand little attentions needed daily to make the average woman happy. (Why, Dr. Greene!—Ed.)

No old maid ever hears of an old bachelor without b coming interested in him, pro or con, on the spot. So I'll mention incidentally that Bachelor Burbank is a moderate blonde, with light mustache, but otherwise clean shaven; that is, he would be if it were Sunday. He is of medium size or a little less, with straight and positive bearing. Of course, to know his calling is to know without the telling that goodness and kindness beam forth in fruit-like and flower-like expression of features. No man or woman with a mania for growing fruits and flowers can be bad. All fruit and flower people agree to that. But we common ones can only guess how good one must be who can and does beat God's best a thousand per cent in a given line.

I heard a preacher object to calling a man a "creator"; yet he had to admit that Burbank has created new productions in fruits, flowers, vegetables and grasses, of course through nature's laws—same as any other creator has to do. Under the laws of evolution man has created the shepherd dog, friendly to sheep, out of the murderous wolf, and God created the wolf out of another lower animal. So man who is himself a sport of the Infinite is, too, a creator.

As only one in thousands of God's creation prove fit to survive, so it has been with those of Wizard Burbank. Only one in thousands has the characteristics of the ideal thought out in advance.

To improve and create new fruits and flowers requires not only a knowledge of almost infinite environments but also forethought of many movements ahead, as in the games of chess and checkers. And it takes years and generations of plants to get forethought results. Mr. Burbank has some schemes on hand that will require generations of men to carry out. Who knows but his own thought power will still keep to carry them out?

Mr. Burbank came to Santa Rosa from his native state, Massachusetts, in 1875 and most of his experimenting has been done here. When he came here he had but a few dollars of the $250 he received from his first success, the Burbank potato. So he had to begin at the bottom of the ladder, working here and there for the farmers and fruit people, even to the rough job of pruning hedges. Now he is rich, having made most of it from his many improvements and creations of new fruits and flowers.

He has received as hight as $10,000 for the exclusive right to the propagation of a single fruit. Only last week he sold a stoneless prune, the "Miracle," to an Oregon nursery company for $2,500. He has produced seedless and stoneless fruits of nearly all varieties and kinds. This is done by a very complicated procedure in thwarting nature's ways.

Mr. Burbank tells me that the watermelon is about the only fruit he has not tackled for improvement. Like the old darkey, he thinks that "De man who'd 'tempt to comprove de water milon had ort to be shot on de spot for insultin' of God-al-mighty."

Plums.

Among the fruit experiments now on hand are 140,000 plums of which 25,000 have already fruited. He has propagated, by his methods, from every known variety on earth that he could get, wild and cultivated. Of the new creations of the plum he says about 100 varieties are ahead of anything heretofore produced by him.

Plum-cot.

The plum-cot is a cross between the plum and apricot. Of this new fruit he has 200 varieties that have fruited and 150 kinds to fruit next year. Stone fruits never miss here.

Prunes.

Of the stoneless prunes he has 250 varieties that have fruited and 4,000 that are yet to show up characteristics. It took fifteen years to produce a seedless prune. Many men are making fortunes at propagating Burbank's fruit and he says many of them are swindling the public by misrepresentation. This he said with deep chagrin.

Peaches.

Of peaches he has 200 new varieties in fruiting and several thousand on trial. His hope is to get a good peach that will stand Northern climates. But this would knock the California big peach pie out. He could probably get $100,000 for the ideal hardy peach in mind.

Apples.

Of this fruit he has 8,000 seedlings One of his early bright hopes is a snow white seedling of the Rambo. With this he expects to excel even his grand-

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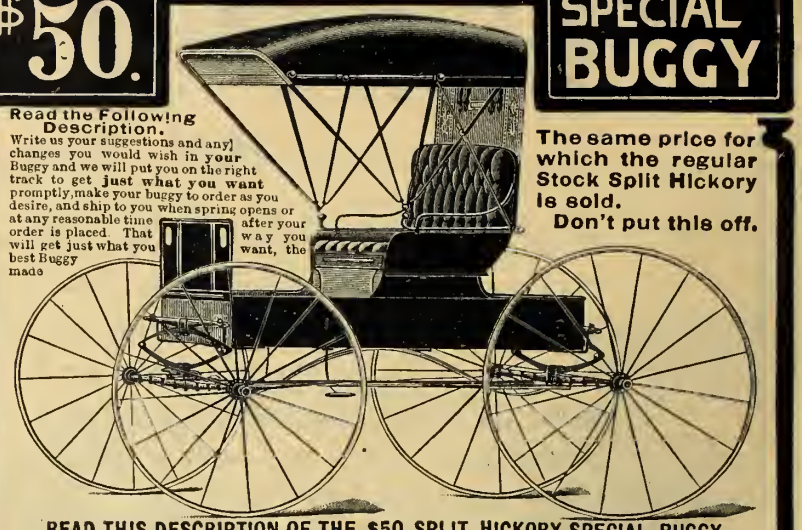

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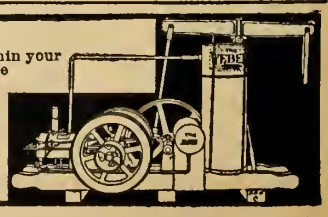

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est pride, the Winterstein. Another magnificent seedling is of the Golden Royal, "yellow, with carmine stripes." The "Wizard's" description of his fine apples made my mouth water; but, oh, my! when I bethought me of the scab, bitter rot, codling moth, apple gouger, canker worm and other so-forths at home! Well, I didn't mar the occasion by mentioning my own troubles.

Berries.

Of berries he has now a new wonder in the Phenomenal; a cross between the Cuthbert red raspberry and a blackberry from the mountains. These grow two inches long and are fine in flavor. Also, he has new blackberry, the Himalaya Giant, a foreign cross.

Strawberries.

Of these he has 800 different kinds and thousands of each kind, all productions by his crossing methods.

Crimson Winter Rhubarb.

This is a cross between a South African and a North American plant. The result is a winter pieplant for the coast state and an exceedingly early one for elsewhere. This fruit is now on the market here.

Pears.

Of the pear Mr. Burbank has also a number in experimentation. He has one completed to a single point—size. While it grows to seven pounds it is as worthless otherwise as a green gourd. Now, by continued crossing and control of environments he is to add one characteristic to another until he gets what was in his mind from the first, including habit of the tree. How he is to put goody in the place of pith no better than that of a cactus plant I don't know. But he expects to put from seven to ten pounds of it there within fifteen or twenty years.

He is also creating a fine golden quince for the dessert plate.

Walnut.

Mr. Burbank's climax thin shelled English Walnut produces a tree eighteen inches in diameter in eleven years. He has one of that size in front of his home place in Santa Rosa. This is almost equal to the Eucalyptus tree, which is intended to take the place of coal, as fuel, in some states. It will make a saw log in eight years; then when cut down grows quickly from the stump.

The Burbank main experimental grounds are eight miles out of Santa Raso, where he stays most of the time, excepting the winter months. During these months he works on his residence grounds. No insignificant part of his income is from admissions to his main station. The fee to this is $10 for one hour; $5 for half an hour, and $3 for fifteen minutes. And then only the select few can "enter in thereat." He wants no merely curiosity folks. One thousand dollars an hour was offered by and refused to the students of the University of California. He could not afford for such a crowd as that to get in for $10,000, even if they were bound and gagged and handcuffed to make them behave. I have engaged for a $10 hour next spring, so I can tell my Missouri friends about it.

Now, nearly all the intellectual work of these immense experimental plants must be done under the very eye of this "creator" himself. Not a seed is ever handled and few even planted by proxy. There is even a regulation depth for every variety. I have a package of Crimson Winter Rhubarb that must be planted a quarter of an inch deep; 50 cents a hundred for the seed.

All grounds are platted and subplatted in detail, and complete corresponding record kept of every bud, graft, fertilization and layer. Pedigrees are kept with the most exacting detail; and checks and tallies made with utmost scrutiny.

From one to three station clerks are engaged in season, besides one regular secretary stenographer.

To produce a forethought ideal creation it must sometimes go through generations of cross-fertilization and worthless fruit, catching up a characteristic here and there, and dropping some, as needs be, until the desired result is reached by evolution.

Well, I can't stop without mentioning a great big suggestion your humble writer had the arrogance to make to this genius, Luther Burbank. In common parlance I "got one" on him. I suggested the idea of cross-breeding the quinine bitter out of the common wild sage brush of the prairies and mountains, so stock could live and prosper on it. Well, I had "one on" him, for he admitted he'd never thought of it, even though he has been at work on a flowering sage bush on that line.

But then he got back one on me by telling me of his work on an ideal thornless cactus to take the place of sage brush. The cactus, he said, would produce fifty tons of rich stock food to one of sago brush. So I wilted, of course.

Mr. Burbank has recently received a big price from King Edward for a grass produced for dry plains and countries.

Well, let me close with the fishy story that I saw lots of persimmons in California markets as big as our big red Missouri apples. Now take that fact in if you can.

J. W. GREENE, of Missouri.

❦ ❦ ❦

Irrigation and Fertilizers.

The New Jersey Experiment Station has conducted some interesting experiments to determine the relative effects of different fertilizers, with and without irrigation, on the early and total yields of asparagus, small fruits, plums, cherries, etc.

Palmetto was found to be the heaviest-yielding of eight varieties of asparagus under cultivation. The irrigated plats yielded about 3 per cent heavier than the unirrigated plats. Eldorado has proved the most productive variety of blackberries for a period of four years, followed by Erie and Agawam. The heaviest yield was secured from an unirrigated plat, yet the total yield was 3 per cent larger with irrigation. Irrigation increased the early yield of raspberries 15.3 per cent and the total yield about 5.4 per cent.

The most prolific currant tested was Red Dutch. The berries, however, are not so large, nor do they find so ready sale as Fay's Prolific. A separate account was kept of a number of individual currant bushes. They have been found to vary greatly in yield, and it is therefore suggested that in propagating currants cuttings be taken from only the most productive plants. The average increase in currants for five years, due to irrigation, was 10.76 per cent, and in gooseberries 3.3 per cent.

Six varieties of strawberries were grown for five years. Bubach and Glen Mary have proved the heaviest yielding sorts. The use of 500 pounds of complete fertilizer, applied in the spring, has resulted in larger yields than the same amount applied with 150 pounds of nitrate of soda additional. The average total yields for five years have been greatest on unirrigated plats.

Plums, cherries and pears have given on the average slightly increased yields on irrigated plats. Irrigation seemed to delay the ripening of Lombard plums six days. Burbank was the most productive of several varieties of plums, and Champion the most productive of six varieties of peaches.

❦ ❦ ❦

A Fifty-Year-Old Horticultural Society.

The Fruit-Grower has received a report of a meeting of the Alton (Ill.) Horticultural Society to celebrate its fiftieth anniversary. This is one of the best local horticultural societies in the country, and the anniversary celebration, which was in the nature of a banquet, followed by talks by the members, was very interesting. Attention was called to the fact that in the early days of the society practically every business man in Alton was interested in the work of the society, and the membership was largely made up of amateur fruit-growers, who enlarged their operations in this line as the years passed. During the early years the records show that for twelve successive years the mercury did not fall low enough to kill peach buds. Asparagus was grown on a small scale when the society was frist organized, but now it is shipped from Alton almost by the carload. Up to 1865 tomatoes did not appear on market until very late in summer, but now the growers get their product on market as early as June. The Alton society is especially notable because of the fact that it has been very careful in recommending new fruits—indeed, it is said the society has never recommended but two new varieties, and they were both originated by members of the society.

❦ ❦ ❦

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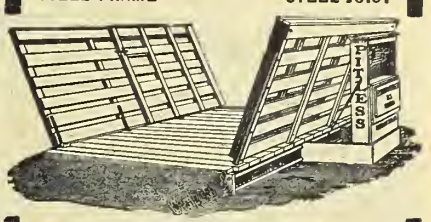

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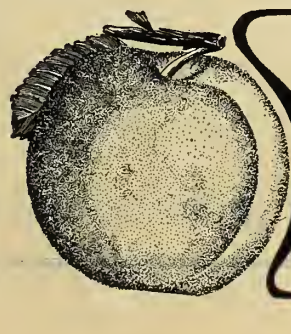

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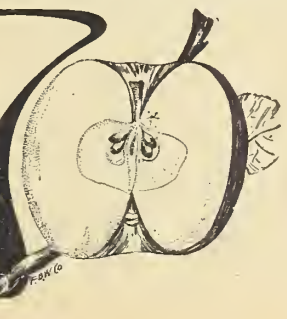
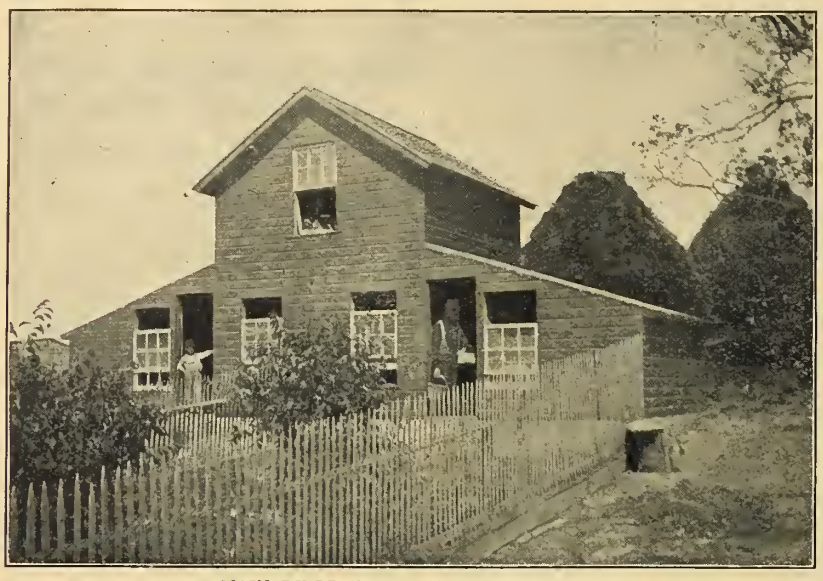


Poultry on a Fruit Farm

How a Wisconsin Man Successfully Works the Combination in a Small Way

That poultry and fruit make a happy and profitable combination has been clearly demonstrated by a Wisconsin man, C. E. Matteson of Pewaukee, that state, who has been combining the two successfully and profitably the past ten years. While many advocates of specialization in all lines of agricultural work have claimed the man who specializes is usually the most successful—and this may be true in many instances—yet, when it comes to poultry and fruit, it is extremely difficult to draw the lines very close as these two branches seem to work naturally together, one assisting the other in many cases.

Shade is needed in poultry runs and yards, and the cheapest and best shade that will be both useful and profitable is fruit trees. Thousands of poultry runs to-day are lined with plum and other orchard trees to give shade to the fowls and a crop of fruit to the poultryman. The droppings of the fowls enrich the soil at the roots of the tree, while the wide-awake birds prevent any worms or insects from gaining a foothold in the soil at the foot of the trees. Even where poultry are given the run of the patch of raspberries, gooseberries and currants, they do little damage and much good. Such bushes make excellent shade and cool spots for fowls to seek on sultry days in mid-summer, and in localities where hawks and birds-of-prey are troublesome, no better protection can be afforded poultry than a nearby bunch of berry bushes to which they can scurry.



MAIN BUILDING OF POULTRY PLANT

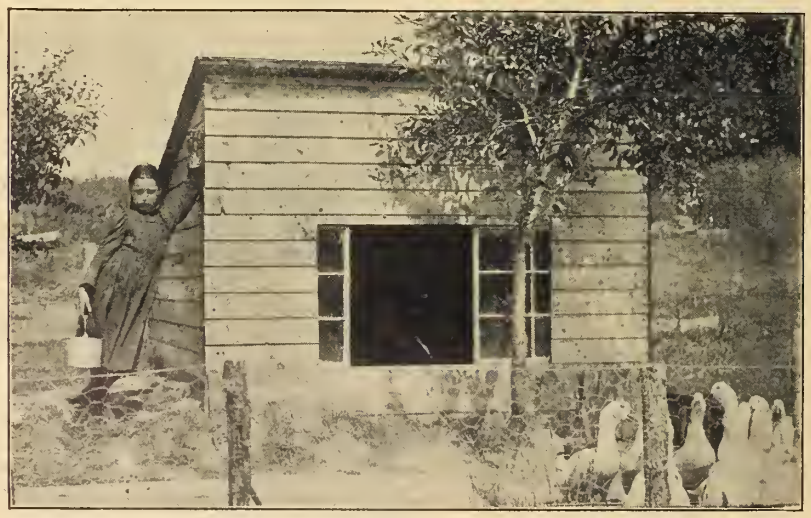
Mr. Matteson settled on his small farm ten years ago and built his present residence then. When he settled there he intended to devote the place exclusively to the poultry business, raising large numbers of broilers for market, besides building up an egg trade, but as his place is located directly between two pieces of heavy timber, he became troubled a great deal by hawks and to afford protection for his young birds he planted quite a number of raspberry bushes which gave the young chickens plenty of shade on hot days and afforded them needed protection against hawks.

After his raspberry bushes became bearing, the demand for his fruit grew to such an extent and brought him in such a good income that he was induced to increase his raspberry field from year to year until he has now over one and a half acres in raspberry bushes. Also to give needed shade to his poultry yards and around the premises, he planted a large number of plum, cherry and pear trees that now bear great crops of rich fruit.

On approaching his farm one is greeted with a sign board bearing the sign: "Oak Hill Poultry Yards and Fruit Farm, C. E. Matteson, Proprietor." With such a sign gracing the front premises of his place one has no difficulty in locating him. Besides this sign he also has a blackboard on which he writes whenever he has anything for sale or wants to purchase anything. This sign board brings him in considerable trade, as passing farmers seeing a notice of strawberries, raspberries or other fruits for sale that day, are often tempted to stop and purchase some of these luxuries for their table. It would be a good idea for other farmers to put up such boards and signs in front of their premises.

The poultry and fruit farm consists of only ten acres. He has about one and one-half acres in raspberries, one-fourth acre in strawberries, one-fourth acre given to currants, gooseberries and asparagus, one acre for garden vegetables and one acre to plum orchard. His apples and cherries take up about two acres but they are in half-acre lots and scattered so as to give suitable location for colony houses. This makes six acres practically given up to fruit, though he has the benefit of this land for poultry yards. The remaining four acres are given up to pastures, barn yard, space occupied by residence and buildings, poultry houses and runs, etc.

His raspberry and currant bushes are planted in rows, between rows of the apple, plum and pear trees. The young fowls have the range of the whole place during the summer and, with 600 to 700 young chickens scurrying over the place and amongst the bushes after insects and scratching the soil, great numbers of insects are consumed, while the scratching and droppings of the chickens greatly enrich the soil.



COLONY HOUSE USED BY MR. MATTESON.

Six colony houses are located at different places among his fruit. Mr. Matteson claims there are many advantages in locating them there. It gets the pullets and cockerels out where they have the best possible chance to grow, besides ridding the place, trees and bushes of insect pests and leaving a rich fertilizer just where it is needed. Then they have plenty of shade and protection from enemies.

Mr. Matteson sells all his fruit to neighbors and to residents of the small towns near his place. The demand for his fruit is greater than he can supply and brings him good prices. His is the only small poultry and fruit farm for miles surrounding his locality and he is going to increase his acreage in fruit as rapidly as possible. His first crop last year of strawberries, raspberries, cherries and currants netted him over $400 while his plums brought in over $150 and other fruits and truck bringing in smaller amounts. His varieties of raspberries are the red Loudon and black Alder. He has found the Warfield and Crescent strawberries fertilized with the Splendid his best standard berries for market. He only grows native plums, as others will not stand the climate. The Rockford and Hawkeye are his standard varieties. The DeSoto, he says, is a splendid plum but he was compelled to discard it owing to its incapacity to stand the drouth. He believes it is also more subject to the sting of the curculio. His strawberry patch is located at the extreme end of his place to keep it away from the poultry. He experiences no trouble with the chicks running among the berry bushes. At fruiting season the old hens are kept in poultry runs and so cannot get at the fruit when ripe.

His income from the poultry amounts to quite a sum. He realized about $350 alone last season from eggs. This includes the market eggs and those for hatching purposes. Breeding stock last season brought him over $200, while market stock and broilers brings in another $200.

There are five poultry houses on the place and six colony houses. Besides these colony houses he uses the scratching sheds of his laying houses after June 1st as by that time most of the laying stock is sold off. His colony houses are strong and substantially built coops with inclosed wire runs to which the fowls are taken when leaving the brooding house. The birds are kept inclosed in the colony yards until they reach sufficient size, when they are allowed to roam over the place. One colony house is used exclusively for cockerels, to which all birds are taken as soon as their sex is noted.

RASPBERRY FIELD, IN WHICH POULTRY RUNS.

The breeding houses and brooding house are well built, paper lined and lathed and plastered on the inside. These houses are very snug and warm in winter. The breeding house shown in illustration has inclosed scratching sheds. On cold, stormy days the doors and windows are kept closed in the shed, but on sunny and pleasant days the doors and windows are opened. A poultry house built after this plan is more expensive, but Mr. Matteson finds that it pays to invest in the increased cost, as the birds have warmer quarters in winter and will shell out eggs

The Fruit-Grower as an Advertising Medium

Circulation, 30,000 per month
Advertising Rate, $2.10 per inch

Mr. Advertiser, have you ever thought what a fine lot of customers are the farmers who grow fruit, everywhere? They are the fixtures—the solid men —in every community. They are the very best class of farmers. Note what an advertiser says:

"We key our advertisements in the various papers and magazines. The results from the Western Fruit-Grower are very satisfactory and show an unusually high percentage of sales to inquiries. We believe this is due to the fact that the paper is valuable and reliable, and goes to homes and people which are the same."—Manlove Gate Co., Milton, Ind.

Fruit-Grower Readers Buy Goods

The experience of this advertiser is but a sample of what other advertisers report. For nursery advertisers the Fruit-Grower is the best advertising medium in America—every reader grows fruit, and is a possible customer.

Now, if you want to reach 30,000 of the very best farmers, you can do it in no other way so effectively as by an ad in the Fruit-Grower columns—30,000 circulation, rate for advertising, $2.10 per inch.

Send copy at once for the big January issue—our birthday number. It will be the handsomest and best farm paper ever published—about 56 pages, fully illustrated, and filled with the best horticultural information.

Every Article Needed on the Farm or in the Farm Home can be Profitably Advertised in the Fruit-Grower

Look over the splendid line of advertising in this issue—see the firms which have used our columns in the past and received good returns. Write to them about the matter—or write to us, and we will send a list of testimonial letters from advertisers.

Don't delay sending your order and your copy. There will be a lot of advertising which will likely have to be left out of January issue on account of copy being received too late. Get your order in at once. For any additional information, address

The Fruit-Grower Co., ST. JOSEPH, MISSOURI

at a faster rate when confined in a house after this plan.

The upstairs of this house is used as a feed and work room. Here is kept a large green bone cutter which is used in the winter time when considerable quantities of green bone are fed to the laying hens.

He usually winters about 200 laying hens, and in the spring as soon as the birds begin to let up on laying he commences to dispose of that stock, keeping the best birds for his next year's breeding yards. His early hatched pullets begin daying about the middle of October and usually keep up a good record to February and March, when eggs are high and command a good price. After that he begins to dispose of his stock when eggs are cheaper and only keeps his breedings hens.

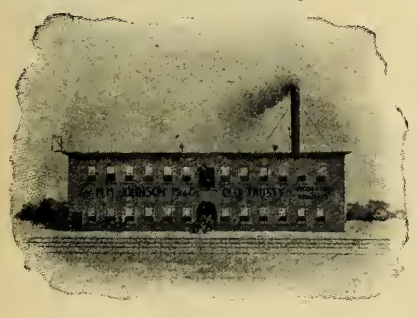
He usually hatches from 700 to 800 chickens and sometimes more for himself. He gets his cockerels and pullets out early so they will be in splendid condition when disposed of in the fall. He runs four incubators with a capacity of 1,000 eggs. Besides hatching out his own birds he hatches a great number of eggs for other people, charging 4 to 6 cents for chickens produced, the party furnishing the eggs for hatching. He says that this is a very profitable source of income to him and at the same time a great accommodation to neighboring farmers who have no incubator and do not wish to purchase one. He brought the last hatch off for neighbors the last week in June. He believes that if all poultrymen would do the same thing they would derive a good income from their incubators after they have hatched out all the early birds they want themselves and instead of letting the machines stand idle later on in the spring season they could be just as well used hatching out eggs for neighboring farmers and bring a good income with very little work. He disposes of the birds immediately after hatched and neighbors bring them up in brooders.

He only raises one variety, the Barred Plymouth Rocks. He formerly kept other breeds but discarded them for this variety and advises others to select one variety and stick to it.

Mr. Matteson lectures at Wisconsin Farmers' Institutes during the winter months on poultry and fruit subjects.

The New Workshop of Incubator Man Johnson.

This fine new factory is the home of the Old Trusty Incubator made by M. M. Johnson, the man of Clay Center, Nebraska, who has been advertising and selling his incubators for



years. The new factory is equipped with all the latest and finest machinery and erected under the experienced eye of Mr. Johnson, who knew, from his past work, just what was needed to turn out the best of work in the shortest time and with the least expense. Johnson has, in the last six years, built up a business of from a few machines the first year to over 20,000 annual output. In his new factory, he went about the building of incubators in the characteristic Johnson way, putting in the kind of machinery that would help to turn out a high class machine at a low cost. Johnson has always been a man of that sort. He would rather make thousands of incubators and sell them at a low price and small margin of profit, than to make a few at a high price. He is no doubt right about this, because his "Old Trusty Incubator" is the kind of machine that will sell itself and do a lot of its own advertising. At Clay Center, everybody in town is Johnson's friend and a lot of them have worked for him for years. They have been brought up and trained to make incubators in the Johnson way and there are not any strikes or lockouts there. The boys turn in and hustle, the factory hums and out go the incubators. Being located out in the West, and having "the boys" with him helps Johnson to turn out a lot of work and keep the cost down. His "Old Trusty" machine is to be sold on a thirty days' trial plan, and, as Johnson says: "It's got to do the work or it won't stay sold."

We suggest that everyone who knows Johnson of Clay Center ought to write to him this year and get his book. If you don't know him, write and get acquainted. He is getting out a book that has in it a system for keeping eggs, poultry and incubator records that is a dandy. Write for one. Address M. M. Johnson, Incubator Man, Clay Center, Nebraska. He'll send the book free.

Can you use several extra copies of this issue of the Fruit-Grower in getting some new subscribers from among your neighbors? If so, we will send them, if you ask for them at once. Use a few samples and get up a club.

The San Jose Scale

Continued from Page Seventeen

spring the growth was very feeble, and by June 1 the tree was largely dead.

None of the apples suffered from crude petroleum. Last year, as a result of two applications of a 20 per cent solution, the last made when the tips of the buds showed green, several trees were injured at the collar. This year the ground at the collar of the tree was tramped just before spraying and the oil consequently did not collect there.

When an October peach tree had just begun growth (the largest leaf was not more than one-half inch long) the trunk and one-half of the crown were washed with undiluted crude petroleum, and on the other half of the

Fig. 7—Pear Tree Sprayed With Lime-Sulphur-Salt Mixture.

crown all but the one-year wood was washed, a scrubbing brush being used to get the oil well into the bark crevices. In this tree growth continued in the unwashed one-year-old twigs, the strongest shoots reaching a length of two or three inches although they were weak and unhealthy after the first few leaves appeared. By June 1 all growth had come to a standstill, and the tree was practically dead on June 9.

On the whole the work of the year tends to corroborate the conclusions of Professor W. M. Scott, the efficient state entomologist of Georgia, who after careful and extended experiments with crude petroleum concludes that until the Kerowater pump is perfected its use is accompanied with danger to the trees.

Lime-Sulphur-Salt Solution.

The lime-sulphur-salt remedy as used at this Station was made according to the directions of Professor Forbes, entomologist of the Illinois Station, as follows:

"Provide 30 pounds of the best unslaked lime, 30 pounds of commercial powdered sulphur, and 30 pounds of salt, and water sufficient to make 100 gallons. Heat about five gallons of

Fig. 8—Pear Tree Sprayed With Lime-Sulphur-Caustic Soda Mixture.

water in an iron kettle, and while this is heating weigh out the lime and sift the sulphur, keeping the two separate. When the water is ready to boil, put in the lime, and as soon as this begins to slake pour in the sulphur, one man stirring the mass during this operation. A violent boiling immediately takes place, and water—perferably hot—should be kept at hand to pour on the boiling mass to prevent its running over the kettle. When the lime has finished slaking the violent boiling ceases, and then the mass should be thick and stiff. Keep it steadily boiling for an hour, or until the lime and sulphur have thoroughly entered into combination. The mixture will get thinner as it boils down, and change from a deep orange through several shades of yellow, ending with a deep amber color. Now add the 30 pounds of salt and boil 15 or 20 minutes longer, steadily stirring. Then fill the kettle with hot water, stir thoroughly, strain half the contents into a barrel, and fill this up with hot water, and spray upon the trees immediately. The remainder of the mixture in the kettle should be kept warm, but not necessarily at the boiling point, until ready for the next barrel of spray.

"The points of the main importance in this process are the following: The water must be hot when the lime is put into the kettle; the lime must be slaking when the sulphur is added; the mixture must be constantly stirred; a minimum amount of water must be used; and the mixture must be kept actually boiling and not merely simmering."

On March 13, 180 trees of cherry, peach, plum, pear and quince were sprayed with this mixture. Care was taken to have the mixture hot when applied to the trees, and no difficulty was experienced in its use. It is troublesome to make, owing to the length of time required for boiling; and in using it horses and men should be protected, as the sulphur and lime mixture is difficult to remove when cold.

When dry the limbs of the sprayed trees looked white from a distance, but on close inspection the color was yellowish white with a slightly green tinge.

As compared with crude petroleum the lime-sulphur-salt solution is not so rapid in its effect on the scale. An examination made within a week of the spraying of trees showed many live scale on those treated with the lime-sulphur-salt solution as compared with those treated with crude petroleum. Ten days later, however, one treatment showed as satisfactory results as the other. No effect whatever on the growth of the trees has been observed where lime-sulphur-salt was used. At the time the spray was applied the buds of the trees were swollen but showed no color. Frequent rains failed to remove the sulphur wash, which sticks much better than the petroleum and is therefore something of a protection again infection.

Lime-Sulphur-Caustic-Soda Solution.

In this solution 15 pounds of caustic soda is substituted for the 30 pounds of salt used in the lime-sulphur-salt solution and boiling is unnecessary, the action of the caustic soda being sufficient. It is of a deep orange color when made, but as diluted one-half and sprayed on the tree it shows light yellow at first and pure white when dry.

On March 17, 106 apple trees, three years set, were sprayed with this solution. Only one tree in the lot was at all badly infested, and on this tree the scale was not scabbed except on part of one limb about half an inch in diameter. A number of trees were slightly infested. The orchard had been sprayed with crude petroleum last year, and the badly infested tree must have been overlooked. At the time of spraying no buds showed green except the fruit buds, which are few and confined to a few trees, and these had not grown enough to determine the separate buds of the cluster.

The lime-sulphur-caustic-soda, like the lime-sulphur-salt solution, acts more slowly than crude petroleum but seems equally effective and has no effect on the growth of the tree. It sticks to the tree quite as well and as long as lime-sulphur-salt. It is more easily made but is more expensive, since the caustic soda costs much more than salt and the other ingredients are the same.

Conclusions.

An examination of all the trees sprayed this year, made June 11, reveals some live scales on a few trees of each spraying. As noted above, the petroleum spray practically failed when in weak solutions. It also conclusively proves the efficacy of the remedies, since by far the greater number of scales have been killed. So effective have been the remedies in all three cases that more thorough work, or repeated spraying, would have entirely cleaned the trees of the pest. As to which of the three remedies is best there seems little room for choice between the two sulphur solutions. Where a small orchard is to be treated the caustic soda solution might be preferred because it is more easily made and the expense would not be great. In commercial orchards, however, the lime-sulphur-salt solution would prove cheaper, and as it is equally effective it is deserving of a thorough trial by large growers. The use of crude petroleum is attended with some danger to the trees; it seems safe on apple and pear, but certainly must be used with caution on the peach.

In using the oil the soil about the collar of the tree should be tamped to prevent the oil from settling there. The washing of main limbs and trunk in undiluted oil can be recommended only where trees are very badly infested.

Much has been said regarding the quality of crude petroleum to be used, and many bulletins insist on a test of 40 degrees Baume. This matter has not been investigated at this Station, but the oil used in this season's work tested 32 degrees Baume. Last year the oil used was 40 degrees Baume.

In view of the fact that the petroleum checks growth in the spring, and is attended with some danger to the trees, and the lime-sulphur-salt solution is equally effective in killing scale and is not in the least injurious to the tree, the latter remedy is the more worthy of trial by the fruit grower.

"An Honest Injun" Incubator.

With this headline the Hiawatha Incubator made at Hiawatha, Kan., makes its announcement to our readers for this season. The phrase seems most happily chosen, for we believe this machine is, as the makers claim, most thoroughly built in every way with superior fittings. While it is one of the later claimants for public favor, we see no reason why a new concern, which is backed by capable men, as this concern is—men who have made a life study of incubation,—should not turn out as good a machine as can be made. We shall be glad to have every reader who contemplates purchasing an incubator this season, write to the manufacturer for catalogue and prices. Please refer to the ad., and address Hiawatha Mfg. Co., 838 Oregon St., Hiawatha, Kan.

AHEAD ON EAR SEED CORN
That's what I am. It means honest seed corn; you can't be cheated. It's real seed corn, not pig-feed or a pig in a poke. Your money back if it doesn't suit. Samples and big illustrated catalogue free; besides I throw in a package of flower seeds and one of melon seed. Write today, not tomorrow.
Henry Field, Seedsman, Box 15 Shenandoah, Ia.
The Ear Seed Corn Man.

WEAK EYES CURED AT HOME.
The enormous charges specialists extort for treating the eyes can be saved by a simple but certain home cure which has not only saved dollars for thousands, but saved eye sight of inestimable value. The
Chilian Eye Treatment
removes cataracts without the knife, at home, cures granulated lids, floating specks, scums, growths, sore and inflamed eyes, failing sight, or we refund your money. Send full description of your case and ask for our free booklet and advice.
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Heals and Protects
For Frosted Feet, Cracked Hands, Burns, Scalds, Cuts, Bruises, Corns, Bunions, Sores, etc., it is guaranteed to give satisfaction. Not an experiment—a time tested, valuable healing remedy. Successfully used for 40 years. Sample sent for 1 cent stamp. Agents wanted everywhere
Hull's Salve Co., Augusta, N. J.

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By a Scientific and Never-failing Process. No knife, no pain, absolutely no danger. IN TEN DAYS THE PATIENT IS SOUND AND WELL—cured to stay cured. Write for proofs, booklet, etc., FREE.
DR. O. H. RIGGS, 205 L, Altman Bldg., Kansas City, Mo.

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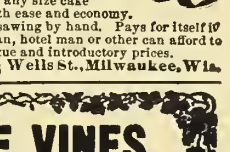
Marks and cuts two rows at a time; cuts any size cake and any depth, and does it with ease and economy. Does the work of twenty men sawing by hand. Pays for itself in two days. No farmer, dairyman, hotel man or other can afford to be without it. Ask for catalogue and introductory prices.
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Send 2c stamp for illustrated descriptive catalog.
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Raspberry Plants
Cumberland, Kansas, Gregg Hopkins.
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All the leading varieties.
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A fine lot of Snyder. Also a limited supply of Early Harvest.
HOLSINGER BROS.
R. F. D. No. 1. ARGENTINE, KANSAS

A Retrospect of 1903.

"The harvest is past, the summer is ended."

What has the harvest been? Well, while it was not as great as it promised in the months of expectancy, not as bad or disappointing as might have been—we have seen worse.

The apple crop hereabouts amounted to but little, not enough to invite a packer here, and the little very inferior; pears none, ditto peaches. The berry crop near to average and of fine quality; grapes good.

Everything now promises fine for 1904. Peach buds enormous, plums will be full, strawberry beds in excellent condition. As to pears and apples cannot tell yet, so unless late frosts and hard freezes as the first of last May all will be well.

Now, I read with great interest the proceedings of the Horticultural Society of Missouri held in Columbia in the Western Fruit-Grower. It certainly was as you say, "a most excellent meeting," about the most entertaining I ever read—would that I could have been there.

I send you by express two sample apples from my orchards, one Mammoth Black Twig, one Stark Bros.' Senator.

The Senator tree from which I took the sample was set five years last spring, setting a two year tree. It bore eight apples all about like sample. The Mammoth Black Twig tree was set seven years last spring, last year it had half bushel apples; this year about half as many. There is in this variety something unaccountable to me. I have four trees of this variety, bought of same nurserymen, set at same time, the four being in a row together, same soil, same location and surroundings. While this tree has now had apples three successive years not a bloom even ever on the other three, which so confuses me that were I asked from my experience with it if an early and abundant bearer would hardly know what to say; anyway, here are three trees not bearing against one that has.

I have read much and heard much in regard to mulching strawberry beds with wheat straw, etc. I set about half an acre last spring, being my first, and covered with wheat straw. I read of growers having fifty, sixty and a hundred acres—well, now, did you ever stop to think how much wheat straw it would require to cover that many? I simply don't believe they do so.

I also read what you say as to exaggerated fruit reports and evils following such. While I know it is a very difficult thing for one to get at exact conditions to form an idea of the average, many are simply reckless in reports. I have long since lost confidence in statistics. Just to cite as instances a few: The state statistics of the farm products of Missouri publish that the eggs sold for more than all the cereals, corn, wheat, oats, rye, clover and timothy seed—now what a preposterous report. Again, a report was sent out and published in an agricultural paper from Newton, Kan., in July, the dry year, that twelve car loads of eggs were shipped from that town the week previous by express to the Pacific coast, that the twelve cars contained two billion eggs. Now, just take your pencil and figure how much money at one cent each those eggs would fetch, also how much they would weigh at two ounces to egg, and how many tons it would be to the car. Do you wonder then at my doubt in published statistics? There are a good many other things equally as exaggerated going the rounds of the press.

I see you promise to give in the January number an article on growing mixed fruit trees which I look forward to with great interest. Much has been written pro and con on the subject and nearly every discussion is on planting apple trees with peach as fillers. Now it does seem to me a foolish thing to plant and grow a nice lot of peach trees and just as they get to the age to bring largest returns to cut them out.

In meditating this question I ask myself why not dwarf pears instead of peach? I am testing it by planting an orchard the past spring with dwarf pears in the rows running north and south—none between, east and west. I am testing a good many things and hope to report results after a while. There is one fruit I have not as yet planted, but am going to do so next spring. That is quince, and right here I wish to ask Maj. Holsinger to give me his advice as to how to grow the same and best varieties to plant. I have but two trees set three years last spring, one had twelve large quinces, the other eight this year, the varieties, Van Damon and Bourgeat. So now as I am going to make another venture will thank Maj. Holsinger and others to lend me their experience to make it a success, as I do not remember having read outside of catalogues mueh upon quince growing.

I read so many correspondents' advice as to protecting fruit trees from rabbits and different devices advertised for same. Now, my experience is just anything around the tree will do the work, and of all things I have used for cheapness and easily done is newspapers. I save up the latter part of summer, using strips of cloth not over one inch wide; the cloth strips are soft and elastic, will not cut or bind the tree. I leave them on through the summer which I believe protects from sun scald. J. L. MARSHALL.

Lexington, Mo.

(The two apples were received all right, and the Mammoth Black Twig was in much the better condition, the Senator being somewhat overripe. As to the variation in trees of same variety on same soil, perhaps this is one of the cases we hear so much about, where individual trees are better than the average. This can be watched in Mr. Marshall's orchard in the future, and will make an interesting study.—Ed.)

Fruit Varieties.

The question of what varieties of fruit to plant has been a very hard one for fruit-growers and farmers in Oklahoma to answer. It is now no less important than it has been in the past but it is much easier to select the proper varieties. There are now a good number of varieties that do well in all parts of the territory, and new varieties are being brought out that have been discovered here and prove their worth. The parentage of many of these varieties is known but in most cases it is not. This has very little or nothing to do with the value of the variety and is of interest only as a matter of history.

There are now a good many varieties coming into bearing that are supposed to be new but that have been in cultivation for a long time in some of the eastern states and have not been widely disseminated or planted in the west. Some of these old varieties are showing a great deal of merit in some localities and are worthy of extensive tests. The Rutter pear has been found to be a case of this mistaken identity. This is an old variety but new to most people and promises to become a very popular pear. The winesay apple has also passed for the Arkansas Black and has thereby won much favor for the latter unworthy variety. Many of these mistakes are the result of fraud by tree peddlers, one variety having been sold and a different and more common one delivered in its place. In some cases this has worked to the ultimate benefit of the farmer, as in the case of selling Arkansas Black and delivering Winesap instead. In most cases, however, where substitution has been made without the knowledge of the buyer, cheap and inferior varieties have been used.

A variety of real merit and of doubtful identity should be identified and called by its proper and original name, but if it cannot be identified with a reasonable expenditure of time and effort, a name should be given it, and it should be propagated and placed upon the market. It is more satisfactory to have all fruit named but the name should always be held secondary to the real value of the fruit. Many varieties will prove of value only in small localities, but are none the less valuable for home uses.

Bulletin No. 59 of the Experiment Station at Stillwater, Okliahoma, contains information of much value to all who are interested in fruit-growing.

A Handsome Train.

Western railroads are getting their roadbeds and rolling stock in shape to handle the great crowds which will go to St. Louis, to visit the World's Fair, next year. The exposition is already proving a benefit to the traveling public, in this way. Among the first of the roads to appreciate the importance of this improvement is the Missouri Pacific system, which reaches St. Louis from all of the Western states. The Fruit-Grower representatives recently had the pleasure of a ride over this road on a new train which has been put into service to accommodate the travel of next year. This is a train which runs from St. Joseph, Mo., through Atchison, Leavenworth, Kansas City, Sedalia, Jefferson City, to St. Louis. The equipment is entirely new—and the coaches are as fine as can be made. This train leaves St. Joseph for St. Louis every morning, and a sister train leaves St. Louis at the same time, so that there is a daylight train each way across the state of Missouri. These trains carry chair cars (free), cafe and observation cars, the entire train is steam heated and electric lighted, and altogether it is one of the best trains in the West. The Missouri Pacific system is certainly getting in shape to secure its share of the traffic next season, and to handle it to the satisfaction of everybody.

EYE BOOK FREE!

Tells how all Eye and Ear Diseases may be cured at home at small cost by mild medicines. It is handsomely illustrated, full of valuable information, and should be read by every sufferer from any eye or ear trouble. This book is written by Dr. Curts, originator of the world-famed Mild Medicine Method, which without knife or pain speedily cures most hopeless cases. Dr. Curts offers to send this book absolutely FREE to all who write for it. Address, Dr. F. Geo. Curts, 344 Shukert Bldg., Kansas City, Mo

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They'll be the best fruiters when grown. Blood tells in plants as well as animals. I grow on my own farms in the best fruit soil and climate in the world, everything I sell. If you are looking to future luxurious bearing, there is no stock grown that is so sure to please and produce profitably as

Wood's Small Fruits.

They have health, rooting, growing vigor and are bred with strongest fruiting qualities. I make a specialty of **Strawberries, Blackberries, Raspberries, Dewberries, Currants, Grapes and Garden Roots.** Also limited but unsurpassed stock of Apple, Peach, Pear, Plum, Cherry and Quince. Don't place an order until you have my free General Fruit Catalogue. Also ask for free circular of **Twelve Special Fruit Offers.** Choice fruit groups for every garden at reduced prices. **ALLEN L. WOOD, Wholesale Grower, Rochester, N. Y.**

WEST MICHIGAN TREES

are healthy and hardy. Buds cut from bearing trees insure stock true to name. 913 acres—two million trees—apple, peach, cherry, plum, pear and quince. **Ornamental trees** and shrubs. **Order direct** at wholesale prices. Beautifully illustrated catalogue sent free. Write to-day.

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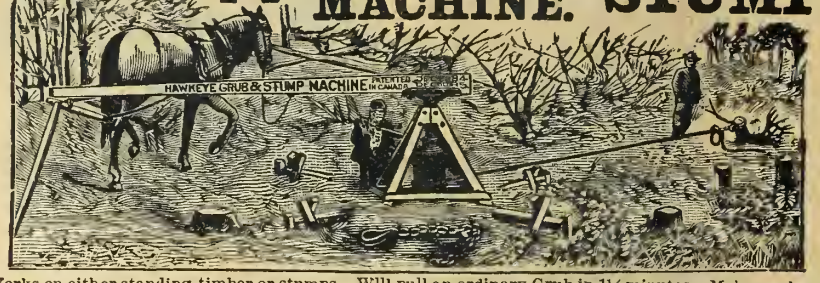
Box 23 BENTON HARBOR, MICH.

HAWKEYE GRUB & STUMP MACHINE.



Works on either standing timber or stumps. Will pull an ordinary Grub in 1½ minutes. Makes a clean sweep of **Two Acres at a Sitting.** A man, a boy and a horse can operate it. No heavy chains or rods to handle. The crop on a few acres the first year will pay for the Machine. Send postal card for Illust'd Catalogue, giving price, terms and testimonials. **MILNE MFG. CO., 788 8th St., Monmouth, Ill.**
(*Address Milne Bros. for Shetland Pony Catalog.*)

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Just write me ten names of spectacle wearers and I will do this:—First I will mail you my perfect Home Eye Tester Free. Then (after you have sent me your test) I will mail you a full $2.50 family set of spectacles (which will wear yourself and family a lifetime) for only $1.00—and with this I will also send a Handsome Rolled Gold Pair Free. My regular price for this full family set of spectacles is $2.50 and your home dealers are charging from $2.50 to $5.00 a **pair** for them, which would make this set cost you about $10.00 if you bought them from your home merchant. I am really giving away the **whole** set free (the dollar I will ask you to send me with your test is **only** to pay for this announcement). I am doing this for a short time **only**, just to **prove** to you and all other spectacle wearers in the United States that **my** spectacles—the Dr. Haux "Famous Perfect," Vision Spectacles—are the most perfect fitting, clearest and the best that money can buy, and I'll give you your dollar back and let you keep the spectacles also if **you yourself** don't say they are the best and finest you have ever bought at any price. Address:—
DR. HAUX SPECTACLE CO., ST. LOUIS, MO. I WANT AGENTS ALSO.
NOTE.—The above is the largest spectacle house in the United States and is thoroughly reliable.

Orcharding in Missouri

(Continued from Page 7.)

in summer. As we go into a low place we actually feel the lake of cold air that has settled there. As we pass on to the adjoining hillsides we are conscious of the change to more congenial warmth as our heads come above this stream of cold air.

Where there is opportunity for a choice of slope, local conditions and the varieties to be planted govern somewhat the site that should be selected. Often a northern or eastern slope is to be preferred. On rocky, thin soils the northern slopes are usually richer and they stand the drought better. The buds start later on a northern slope and are more liable to escape spring frosts. The fruit is usually of higher color on a south slope. Some varieties like a south slope while others prefer the cooler location. This will be discussed farther in the paragraph on varieties. Apples may be grown successfully on any slope if soil and other conditions are right.

The character of the native forest trees indicates to some extent the fitness of the soil for apple growing. Where the nut trees, sugar maple, linn, paw paw and sumach grow well apples will usually thrive.

In some localities apple trees thrive best on new land, while it is covered with its natural leaf mould and before the tree stumps have all rotted away. Under other circumstances it is best to plant on old, subdued land. In some parts of the state where the soil is a heavy clay loam farmers say that orchards did well on their farms fifty years ago, but that they cannot grow apples even on new orchards at the present time. They attribute this to some climatic change that is alleged to have taken place in the past few decades. The writer was for years puzzled to find some explanation to this phenomenon. Investigation of many cases of this kind has in each instance revealed the fact that the orchards that did well in the past were on new land. In some cases the land has been rendered unfit for any kind of farming to thrive without the introduction of improved methods. In most cases it has been found that orchards planted on the new land, which was well opened up by the tree roots, did well because the decaying roots afforded good drainage, the leaf mould secured fertility and in such a new soil the trees rooted deeply, in the crevices opened up by the decaying stumps. When the same land gets old, from tillage, the leaf mould disappears, the native tree roots are rotted and gone, the soil settles and bakes from bad management, and apple trees planted upon it cannot root deeply nor can they stand the drought of summer or the cold of winter.

Generally orchards do best on newly cleared land unless there is some special condition which unfits this land for trees . It has been argued that root rot is worse on new land because it is a fungous disease which is native to our forests and that trees planted among the native stumps will be sure to take the disease. There may be something in this statement. It would not seem wise to plant apple trees (which are known to be susceptible to root rot) on new land where the forest trees had been dying from this disease. On the other hand, the writer has had opportunity to study the spread of root rot in some of the largest orchards of the state. This disease is found in orchards on new land and also in orchards on old land. It is usually not very abundant anywhere and no large consecutive areas are usually destroyed by it. In an orchard containing the largest number of root rotted trees that have come under the writer's observation in any one place, by far the largest number of affected trees were on the oldest land in the orchard. This land had long been cleared and the stumps had long since disappeared. The land had been cultivated to corn for nearly thirty years in succession and no one in the neighborhood remembered what had been grown on it for years before that. In this orchard there was a large pocket in which nearly all the trees were affected with root rot. On the newly cleared land in the same orchard there was a root rotted tree here and there, but only a few in any one place.

Forest tree insects are said to attack orchards if they are planted on new land. So they do on land that has long been in tillage. So far as the writer has observed the insects are most abundant in the oldest settled orchard districts. More canker worms are reared on the shade trees in the towns than on the forest trees in the country. The finest apple trees known to the writer in this state, have usually been planted while the land was comparatively new, or even where the forest trees had been taken off just before planting the orchard.

Previous Preparation of Land.

The best previous preparation of orchard land is that which is made by the growth of native forest. There are some exceptions to this statement, but it is generally true. The trees may be cut off any time after August first and the apple trees planted the following spring. It is best to cut the stumps close to the ground, leaving none of them too high for a harrow to pass over.

For plowing newly cleared land, implements should be selected that will best cut the roots and turn the soil off close to the roots and stumps themselves. Sprouts will start less abundantly if the earth is cleaned off the entire stump by the plow. Some plows will do this work well while others will fly out of the ground before they get within a yard of the stump. The best plow for old land is not generally the best for stump land. A heavy "A" harrow is a good tool to pulverize stump land.

The land may be marked off in check row with a single shovel and the rows should be straight. A crook in the row endangers the tree in this crook to injury from subsequent cultivation. The trees should be planted at exactly the intersections of the check rows unless a very large stump stands there. In the latter case the hole for the tree should be dug as close as possible to the side of the stump. If sprouts are properly kept off this stump, so it will die, the tree close to it will make better growth than the one away from it. The decaying roots of the stump open up the soil for the growing roots of the apple tree.

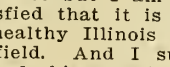
Fitting old land that is in good tilth for an orchard is a matter that needs comparatively little attention here. It should, however, be well plowed and thoroughly pulverized. The idea has been advanced that plowing and pulverizing deeply the land for orchard planting is equivalent to digging the hole for each tree just the size of the orchard.

In case the land has been cropped to corn until it has little humus, so that it bakes or washes badly it should be given a crop of clover or of cow peas before the trees are planted. This will add humus to the soil and the roots of the growing crop will bore out the soil so as to secure something of the same condition which is afforded by the growth of forest trees.

(To be Continued.)

J. C. WHITTEN.

Columbia, Mo.

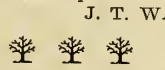


Another Man Who Does not Like the Mole.

I am willing to take off my hat to Major Holsinger in most of his writings, but must call him to time on the mole question. Several years ago I read a similar article from some one whom I supposed knew what he was talking about and I formed a great admiration for what I though a very much abused little animal and even caused smiles from my neighbors by taking all the little pests I could get into my own grounds and liberating them till now I have an ample supply. Last spring I planted a field of sweet corn on ground infested with the little varmints and my son noticing their depredations told me they would take all the seed. Of course I thought it my duty to impress on his mind my superior knowledge by telling him the nature of our little friend and how he was abused, but in a few days I noticed that where their burrows were no corn was to be seen, and I concluded to do a little investigating on my own account. So I captured one of them and on making a post-mortem examination I found his stomach full of sweet corn, and this fall in gathering field corn I found that wherever an ear lay on the ground over a mole's burrow the grain was all eaten off. Now you may think this only circumstantial evidence but I am now thoroughly satisfied that it is not policy to turn a healthy Illinois mole loose in a corn field. And I surmise the major has made his experiment on one of the Dixie variety, which like the razor back hog doesn't know a good thing when he sees it.

Come, now, major, where did you get that mole? 'Fess up.

Neoga, Ill. J. T. WALLACE.



Don't "Monkey" with "Uncle Sam."

At the November term of the Federal court held at Owensborough, Ky., F. B. Hancock of Hopkinsville, pleaded guilty and was sentenced to eighteen months in the penitentiary for using the United States mails for "fraudulent purposes." Hancock's scheme consisted in having a fine letter head printed, representing himself as operating a large department store at Casky (near Hopkinsville). On this sheet he sent orders to all parts of the country for a great variety of things.

He had no store and was not known to pay for any thing. He seemed to have a preference for handling nursery stock. Many nurserymen throughout the United States are among his victims, the East Tennessee Nursery Co. at Clinton, filled orders to the amount of $136; J. R. Reasoner of Urbana, Ill., is $7 poorer, and at least that much wiser. He was one of the many witnesses. At the same court one man was fined $1,500 and costs for sending obscene letters to a young lady.

Strawberry Plants

I offer for spring a supply of the finest large and well rooted Strawberry plants which were grown under the most perfect conditions. Thoroughly cultivated, carefully mulched and no pains have been spared in producing them up to the highest standard of excellence, and you will find my prices very reasonable.

Send for Catalogue to-day.

50,000 Apple Trees

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Ben Davis, Jonathan, Wine Sap Rome Beauty, Gano, Ingram and 20 other varieties. They are the finest 1 year old trees I ever saw and sure to please everybody. They are just right for large commercial orchard planting. Grown on new land—absolutely whole rooted and true to name—large size—reasonable prices. Write for further particulars. Address:

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CARL SONDEREGGER, Prop.

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Tobacco dust applied about the roots of fruit trees is one of the best insecticides known for all insects which work on the roots, such as woolly aphis, etc. In addition to its value as an insecticide tobacco dust is a most excellent fertilizer for all kinds of fruit trees, and is worth more than its cost as a fertilizer alone. Use it, and keep your trees in a thrifty, healthy condition.

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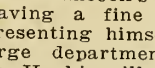
Protecting Fruit Trees from Injury By Rabbits.

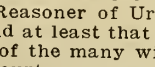
Economy is the watchword of the day, and it is the duty of every person to perform the best and most useful labor with the least expense. There is no use to apply expensive washes to your fruit trees to protect them from injury by rabbits, when every family has, or ought to have, the remedy always on hand. From actual experience for a number of years we have saved 600 apple trees from the ravages of rabbits by greasing them with a fat bacon rind, or with tallow, which will answer the same.

Hanover, Pa. O. T. EVERHART.



Hides for Robes.

Elsewhere in this issue will be found the advertisement of the Iowa Tanning Co., Des Moines, Iowa, which will interest Fruit-Grower readers. This firm makes a specialty of tanning cattle and horse hides for robes. Some time ago we saw a robe made of the hide of a Polled Angus bull, tanned by this firm, which was a most valuable possession. Look up the ad. and write for information in regard to the matter.



Have you ordered your berry box material? If not, don't put the matter off any longer, for there promises to be a great scarcity later in the season.

Save the Trees

from sun scald and blistering and keep off mice, rabbits and tree borers with

The Hawkeye Tree Protector

Cost, a matter of **60c a hundred,** or **$5.00** per thousand. Size 12 by 20 inches, easily and quickly fastened. The one **Protector that always protects.** If you have young trees to save, you will profit by writing for descriptive circulars.

Burlington Basket Co.,

Box 111 Burlington, Iowa.

Best Nursery Stock

Lowest Prices at the Old Reliable

Capital City Nurseries

Established 1869. Packing and Shipping facilities unexcelled. Agents Wanted.

C. L. Watrous, Des Moines, Ia.

WIRE New. Plain Galvanized, about 150 ft long and up. 100 lb. coils, No. 8 to 16. 1½c lb. Write for particulars and FREE 100 PAGE CATALOG 32W CARROLL IRON WKS. CHICAGO

Garden Notes

The Farmer's Garden.

It is often a wonder to me why more farmers do not give the proper amount of attention and work to the farm garden. There is no part of the farm that will pay as good returns. Properly managed it is half the living and the best half at that. The trouble is the men often feel too important and busy for garden work and turn it over to the already overworked women folks. They are given the weediest little corner on the farm and are lucky if they can get the men to plow it up after they are done plowing all the rest of the farm. Of course it would be a sinful waste of money to buy some good garden tools, for the women to use, and so the same farmer that has the very latest thing in riding plows and surface cultivators and all such, will let the women make garden with any old worn out hoe and rake as their grandmothers did before them.

It is noticeable that when the man does have to make the garden he gets it out in the open on good clean ground where he can have the vegetables in log rows and tend with the riding cultivator. This is as it should be and I wish that every farm garden might be the same way. Take a strip of good land out away from the hedge and the trees, an acre is none too much, and work it up like you would for a brag crop of corn. Get a good garden drill and plant the seeds in long straight rows, wide enough to tend with the team. The little stuff that is too small to be tended with the team can be put in a strip along one side in rows a foot apart and tended with the wheel hoe attachments of the garden drill.

All the stuff can be tended with the wheel hoe the first time over and after that most of the time it can be done with the team in one-tenth of the time you could do it by hand in the old way and much better. You will be surprised the way the stuff will grow, and how easy it is to tend it. An hour's work with the cultivator once a week and it is done. Peas, beans, onion sets, sweet corn, potatoes, cucumbers, melons, squashes, and in fact almost all garden crops are as easily tended as corn if you will go at them the same way.

Try it next spring. Pick out your place for it now and get it well manured with fine rotten manure. Then plow it up first thing in the spring. Harrow it and plank it and harrow it again till you get it in perfect order and then surprise yourself and the good wife with a good garden next summer.

Of course you will want some good seeds. Send for the catalogues of some of the reliable seed men, they are lots of good ones, and pick out your list of seeds early. Avoid the flashy fellows with impossible pictures and highly inflamed descriptions. Better stick to the conservative ones who give photographic pictures and reasonable descriptions. Don't go too much on novelties but stick to the standard sorts. Get your order in early as the seed men are always badly rushed at the eleventh hour and then is when the mistakes are made. Get a combined drill and wheelhoe, and be all ready for business when spring comes.

Don't forget a few flower seeds for the children. Nothing pleases a child so much as to have a flower bed for its very own. Many seed men give flower seeds as extras, or they can be bought for a few cents.

Market Gardening as a Business for Young Men.

I am often asked by young men what is the best opening for them in the line of farm work here in the central west. Straight farming pays all right as a rule if you own the land but rent is so high in many places that it leaves but little margin for the tenant at the end of the year and it seems like uphill work to ever get enough ahead that way to buy a farm. Prices of farm land have risen in the last few years till it is almost an impossibility for a young man with limited capital to buy. He must either rent with the prospect of being a tenant farmer for a long time or he must hunt for cheap land in the west or north. That means that he must get out of the corn belt and the average young man that has been reared in the corn belt dreads to go to any country where corn will not grow.

In view of all this it seems to me that the best opening for an enterprising young man is the market gardening business. No great amount of capital is needed for a start and only a few acres of land. Rent does not seem so high when you only have to rent 10 or 20 acres and even the buying of that amount of land is not by any means a great undertaking. In market gardening a man can find as much work and take off as much crop with 20 acres as the straight farmer with 100 acres.

Almost any hustling young man can raise the money to rent or even make a purchase payment on 20 acres and with a little cash for tools and seeds he is ready to go ahead. It may seem at first that the garden business is overcrowded, but you must remember that there is always sale for first class stuff and that is what you must endeavor to produce. If you have the right kind of stuff you will never lack for buyers. In this locality, and it is typical of the corn belt, not half of the farmers grow enough garden for their own use. They have a little early stuff, but for onions and late cabbage and sweet potatoes and even Irish potatoes they depend on the gardeners near town. At this place, even if there were no town trade, a man could do well on this farmer trade.

To my mind, there is no occupation more fascinating that gardening. It does not have the monotony and sameness that straight farm work does, but every day and almost every hour brings up something new. The 20 acres will give more variety of work and take more planning and intelligent thought than 100 acres of farm and it will pay better if properly handled. Look at some of the present prices. Onions at $1.00 to $1.50 per bushel. Sweet potatoes about the same. Irish potatoes 80c to $1.00 per bushel. Cabbage 2c per pound, and remember that any of these will produce from two to four times as much to the acre as corn and can be grown cheaper per bushel for bushel. For several years I have been growing potatoes on land adjoining a field of corn and have kept track of the yield and prices. There has not been a year that I have not had over twice as many bushels of potatoes to the acre as my neighbor had of corn and there has only been one year that I could not trade a bushel of potatoes for two of corn. It cost me a little more acre for acre to grow the crop, but the cost per bushel of production was less on the potatoes than on the corn by a good margin.

Of course it takes work, lots of it and some of it backwork, but the results are easy to see. The money is coming in the year through. There is not a month in the year that the gardener does not have something to sell. While the corn farmer is running a store bill on the prospect of the corn money that he will have in the fall the gardener is cashing up as he goes along. He lives an independent out door life, that comes nearer than any other to a happy combination of the farmer and the business man. With a team, a cow, a few pigs and chickens, a modest cottage, plenty of fruit and garden stuff at hand, and money coming in the year around, what more could you ask.

From the wife's side it is better yet. No hired man to board, no corn huskers or threshing to dread, plenty of garden stuff always at hand to help out the table, and always near town, there is little to wish for in the way of an ideal country life.

Some time sit down and figure what some of the common kinds of vegetables usually bring and how much could be grown on an acre and you will get some idea of what could be done on a small piece of land. Take strawberries at 10c a quart. That does not look like big money but I have had 1,000 quarts on a strip a rod wide and 10 rods long. Figure it up. With onions I had 250 bushels on one-third of an acre. They were low that year and I sold from the field at 25c but even at that I made good money on them. Look at the possibilities in celery. And in late cabbage. It is no uncommon thing to get 20,000 to 30,000 pounds of cabbage to the acre that will sell at 1c per pound or better.

If there is any business a young man could go into with as little capital and stand as good a show for a comfortable living and gratifying returns for intelligent work, I do not know of it.

Garden Notes.

Don't forget to bank up around the potato cellar. One of these times it will come a cold night and you will get a lot of potatoes frozen. Better see to it before it gets too late.

A little mulching over the tops of the parsnips and salsify standing out in the garden will not do a bit of harm. They are hardy things, but freezing and thawing hurts them if there is too much of it. Parsnips especially are liable to rot in the top.

The best thing to have done with the parsnips would have been to dig them in the fall and store in a box of moist earth in the cellar. Then you could have had them to eat during the winter. Now when they are standing out in the garden if you want a mess you have to dig them with a pickaxe.

While you are about it better mulch the asparagus and pieplant beds well, too. Any kind of mulching will do but the best thing is manure and lots of it. No danger of getting the ground

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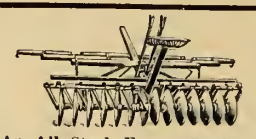
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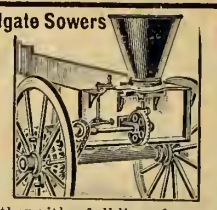
together with a full line of sowers of the different patterns, are shown in our Special Implement Catalogue, at prices fully 40% less than your local dealer would ask you. Don't buy without first getting our catalogue.

$19.95

is our price on Combined Lister and Drill, f. o. b. Kansas City. This is a strictly up-to-date machine of the latest improvement. Our Implement Catalogue describes it fully.

High Grade Harrows Steel Lever $4.95

per section. Can furnish you with a channel steel guaranteed U-Bar Harrow. Either two, three or four section. Other styles in our Implement Catalogue.

Fitted Lister Lays $1.25

buys a 14-inch fitted lay guaranteed to fit your Lister without any blacksmith work whatever. This is a saving of over 60%. Full line of Fitted Plow Lays, Cultivator Shovels, etc., shown in our Special Implement Catalogue.

Our Price Book No. 17 for 1904 containing 800 pages and brim full of high grade merchandise at the lowest figures you ever heard of, is ready for distribution. In addition to our implement line, it contains prices and descriptions of goods of every class imaginable. Enclose 10c to pay half the postage and we will forward catalogue FREE. Before laying this paper aside make out your order for one of our mammoth 1904 catalogues. Your investment of 10c will be returned a hundred times, on your first order. Send at once: in fact, DO IT NOW. The Special Implement Catalogue free on request.

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Send us 10 cents in stamps and we will mail you our 100-page Twenty-fifth Anniversary Catalogue of Flower, Farm and Garden Seeds worth $100 to any wide awake farmer or gardener, together with ten farm seed samples, Turkestan Alfalfa, Sand Lucerne, Siberian Red Clover, Bromus Inermis, Pencillaria, Dwarf Essex Rape, Teoslute, Bavarian Barley, Brazilian Flour Corn, and Probstier Oats, certainly worth $10.00 to any one to get a start with for only 10cts in stamps, English or German Catalogue, state which you want. You should have our Seed Catalogue early, so you better answer this at once.

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1000 MEN WANTED

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A HALF MILLION healthy, smooth, well rooted trees in prime condition for transplanting. 150 leading varieties of apple, every variety that is grown successfully anywhere. In Peaches over fifty varieties, Cherries thirty-five of the leading sorts. REMEMBER we are headquarters for plums, apricots, quinces, vines and plants. Unparalelled assortments of shrubbery. Don't fail to write for our FREE catalogue if at all interested. It is our only salesman and will save you money by buying direct from the nursery thus saving agents' commission. Write for it today. Address, Ratekin's Seed House, Nursery Dep't, Shenandoah, Iowa.

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will see these good eyes. My seed potatoes, like everything I sell, are of the very best. They are Red River grown and you know what that means. My catalog tells how I grew a carload of potatoes to the acre. Write for it. It's free and I throw in a package of flower seed and one of melon seed besides. Samples of seed corn if you want them. $5.00 worth of seed free. Ask about it.

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The Ear Seed Corn Man.

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SEED BOOK for 1904
Cost over $50,000 to publish. If you have a garden you can have a copy for the asking. Send a postal for it to
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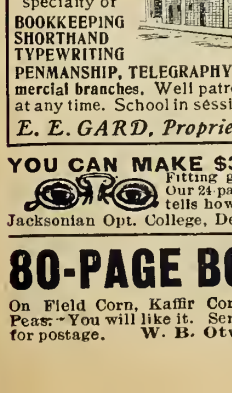

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If not satisfactory, money refunded. Circulars free.
AGENTS WANTED.
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We recommend the Lightning Seed Sower the best sower made. They forced all others out of the market here. Farmers use only the Lightning. It will do all that is claimed for it.
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On Field Corn, Kaffir Corn, Sorghum and Stock Peas. You will like it. Send two two-cent stamps for postage. W. B. Otwell, Carlinville, Ill.

too rich. Put on several inches of it and asparagus will grow right up through.

Write for the seed catalogues advertised in this issue of the Fruit-Grower. They are all good straight people or they never would have been allowed here. Get your list of seeds made out and your order in early before the rush begins.

Better get a garden drill and wheel hoe this spring. You can do lots better work with them than you can possibly do by hand and ten times as much of it.

Do you have trouble to get the boys to work in the garden? Here's a secret that will work wonders: A boy is always crazy to work anything that has wheels to it, and a boy that would disdain to use a hoe or rake will push a wheel hoe all day and count it fun. Try it.

Cucumber seed is mighty scarce this spring. Two crop failures in succession following a short crop in 1901 have put cucumbers on the top shelf. Seed that used to wholesale at 25c a pound and retail at 40c is now worth $2.00 to $2.50 per pound and very little changing hands at any price. The retail seed men are trying to get enough seed to protect their regular customers but it is uphill work.

Squash seed is almost as bad. At least the winter squashes. Hubbard seed is scarcer than it has ever been and is wholesaling at $1.00 to $1.25 per pound with very little to be had. Floods and bugs and plant lice did it. The man who wants good squash seed this winter will have to get his order in early.

Wax beans are also scarce. They are grown mostly in Michigan and a wet summer and fall there damaged the crop badly. Deliveries have been only about 20 per cent and much of the seed poor at that. Market gardeners expecting to plant heavily of beans should be looking up the supply.

Try some Okra next summer. Few Northern people realize how good it is. It is easily grown. Just plant it like beans or peas in any good ground. The pods are cooked when young and tender and are delicious. Break them up like wax beans and cook seeds and all, seasoned with butter and pepper, salt and a little vinegar.

If you try mango peppers try the new Chinese Giant. It is far and away the best one in the list and much better every way than any of the old varieties. Big as a quart cup sometimes and no hot taste at all.

—HENRY FIELD.

Shenandoah, Iowa.

Strawberry Experience from Wisconsin.

We had intended to stop our subscription to the Fruit-Grower because we thought the small fruit department was neglected and that department is all that we are interested in, as we do not grow any tree fruit. But your November number is worth the price of the paper, i. e., 50 cents, so I will continue to receive your valuable journal for another year.

Perhaps our experience in growing strawberries may be of interest to some of your readers. We use the hedge row system of cultivation, because we think if the ground is rich enough and is properly prepared, we can grow a larger crop to the acre and of a much better quality than by the matted row system.

We have fruited and discarded a great many varieties of strawberries, retaining the best ones. We find that nearly all of the old varieties that have been in cultivation for years, such as the Haverland, Warfield, Bubach, Aroma, Clyde and Gandy are the best we have grown. The Haverland, one year with another, is the best of the lot with us. The Clyde is a great berry when the season is right; but it sometimes winter-kills even under mulch in this climate, and is very sensitive to frost and drouth.

We experimented last season by irrigating one-half an acre from a well seventy feet deep with a windmill for power. Our patch is located on a side hill, facing the south with a fall in some places sixteen inches to the rod. Our ditches between the rows are wide and shallow, not over four inches deep, the rows three feet apart. The patch was heavily mulched during the winter, in the spring the straw was removed from directly over the plants and trod down in the ditches between the rows, where it held back the water and caused it to spread out the full width of the ditch and soak into the soil. The straw also prevented the soil from washing, and the sun and wind from evaporating the moisture. We carried the water to the highest point with one inch pipe and distributed it from there by means of hose made of ducking, such as was described by Geo. H. Patch in his article on irrigation in the Fruit-Grower. We had quite a severe drouth about the time the berries commenced to ripen, and without the aid of the pump the crop would have been a failure, but the pump, assisted by two very light showers, carried the crop through in fair shape

We think for irrigating a side hill a one inch stream is better than a larger one, and that with a gasoline engine there would be no trouble in irrigating one and a half acres of clay or loamy soil.

We read an article in your journal some time ago in which the writer said he had experimented with pedigree plants bought of R. M. Kellogg, and non-pedigree plants bought of some one else and that he could not see any difference at fruiting time. We have tried the same experiment, but with the result that the pedigree plants nearly doubled the yield of the others both in size and quality.

O. O. PENNEY.

Amherst, Wis.

Reasoner's Strawberry Records Burned.

While in attendance at the meeting of the Illinois Horticultural Society last month, Mr. J. R. Reasoner, originator of the Senator Dunlap strawberry, told us of a loss he had sustained, which is a loss to fruit-growers everywhere. Sometime ago Mr. Reasoner's residence, with all his strawberry records, were burned. Quite a lot of seedlings are now growing, and Mr. Reasoner will have to depend upon his memory for the details as to their parentage, etc. None of his plants were injured, simply the records of their behavior. Mr. Reasoner's mailing list was also burned, so that those of our readers who want to receive his new list for 1904, with the reports made therein, should write for same at once. Mr. Reasoner has some new strawberries now under test, from which great things are expected. Having originated the Senator Dunlap, he naturally has his standard high, so that it will require many points of excellence to receive commendation from him.

To Outwit Cutworm.

Last spring Major Holsinger wanted someone to tell him how to prevent the cut worms from eating up his tomato plants. If the major will go to some village garbage heap where tin fruit cans can be found by the hundred, and get a sufficient quantity, take them home. set them on a hot stove, melt off the tops and bottoms so that only the sides remain, set his plants, set a can over the plant pressing them down into the soil an inch or so, leave them there as long as he can and remove without injury to the plants he will have no more trouble with cut worms.

Amherst, Wis. O. O. PENNEY.

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We are the only general merchandise house which owns, controls and directly manages a vehicle factory. We build our vehicles from the ground up and know what's under the paint. We add but one small profit to the cost of material and labor, hence our customers are getting a better made job in a finer finish and at a lower price than can possibly be secured elsewhere.
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"LEADER" Road Wagon — Imitation leather trimmed; carpet, wrench and shafts; just as illustrated. Write for further description.

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"CHALLENGE" Buggy—24 in. body, cloth trimmed; top, back and side curtains, storm apron, carpet and shafts. Write for details.
We also have better grades up to the very best and most stylish that can possibly be put together.
VEHICLE CATALOGUE FREE. Send for it today. It will give particulars about the above work. It also illustrates and describes the newest and best line of Runabouts, Stanhopes, Buggies, Phaetons, Surreys, Carriages, Carts, Spring Wagons, etc., ever quoted direct to the buyer. It explains the difference between good and unreliable work—between the hand-painted and the dipped buggy—and also explains our Guarantee of Satisfaction and
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Send a postal today for our Vehicle Cat. No. E1.
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A special circular quoting our entire line of Sleighs, Sleds, etc., will be sent at the same time, if you request it. 40

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500 lbs. best Rocky Ford Cantaloupe Seed, 40c per pound.
Also best named varieties of Paper-shell Pecans at 25c pound, and 1-year trees at 20c. Address
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Propr., O. K. Fruit Farm, Flora, Ala.

HELP WANTED.
Two good hands to work on fruit farm, at general farm work; must be able to milk; steady employment by the year. One single and one married man. Address, C. B. Green, 1106 East 5th St., Sedalia, Mo.

WANTED.—A middle aged man and wife without children. Man to work on fruit farm and wife to do housework. Steady work the year round. Inquire of Wm. Booth, Winchester, Kan.

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PLANTING HOEING CULTIVATING.
THE "PLANET JR." No 4 Combined Drill does gardening "the easy way." It has been brought to such a high state of perfection that it is now absolutely indispensable to best success in gardening and truck farming. It sows accurately in rows and drops accurately in hills—four, six, eight, twelve, or twenty-four inches apart. The feed is automatically stopped by simply raising the plow out of the ground and it starts work again when the plow does. Sows or drops all kinds of garden and vegetable seeds. In addition to planting the seed it cultivates astride or between the rows, throwing earth to or from, and plows, opens furrows, hills up, etc. Undeniably the best general purpose tool obtainable at any cost for the private gardener or trucker.
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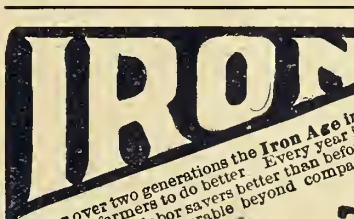

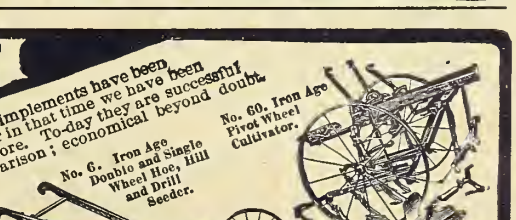

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Improved Robbins Potato Planter.
Write to-day for a free copy of the New Iron Age Book; full of facts that will save you money, time and strength all through the year.
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6 STYLES SEEDERS
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Models of Accuracy.

Double or Single Wheel Hoe,
Cultivator, Plow, Rake. Changes quickly made. Cultivate between or astride the rows. Any depth, any width.

Note High Arch and Plant Guards. Bent Oak Handles on all Tools.
6 Tools in 1.
Combined seeder, marker, hoe, rake, plow, cultivator. Single or double wheel. Every adjustment easily made. For planting and all kinds of cultivation.

Wheel Plows
with cultivator, rake and hoe attachments. For garden and poultry yards.
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tells the story without any filigree work and it has a lot of things like practical plans for poultry houses, care of poultry, egg record sheets and incubation records that make it valuable to any man in the chicken business. I want to send one to every man that reads this paper. Write me a letter. I'll send you the book free and tell you anything I can about your hens. Write to

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Johnson has a quick shipment plan—investigate it.

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M. M. JOHNSON, Esq.,
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Yours truly,
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R. C. Bauerminster, Norwood, Minn., got 493 chicks from 503 eggs. He followed directions, the machine did the work, because it was built on right principles and by good workmen. The **IOWA** has fiber-board case, does not shrink, swell, warp or crack. Regulation and ventilation perfect. Our free book gives more testimonials and full particulars. Everything about incubation free.
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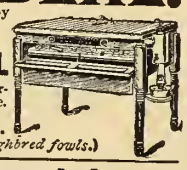
J. W. Miller's incubator—made by the man who knows. It is really self-regulating.



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Wake every germ and hatch profit-fetching chicks that live. Learn all about em in free catalog. Write now.
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Mr. Cyphers, formerly of the Cyphers Incubator Co., Buffalo, N. Y. has severed his connection with that concern and established a new organization under the title of Chas. A. Cyphers Co. for the manufacture of incubators and brooders of a much improved style. It will pay you to write for a copy of his preliminary circular and ask to be registered for a copy of his 1904 catalogue which will be ready about Jan. 10th. Address
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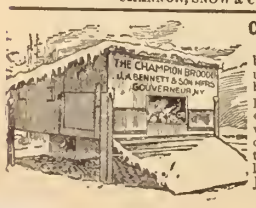

If you are in the poultry business either for pleasure or profit, you wish the best. If you buy a Champion Brooder you are sure of having the best and one which is "known the world over by its works." We are the largest manufacturers in the world. Cat. free.
J. A. BENNETT & SON
Gouverneur, N. Y.

Poultry Columns

Marketing Poultry Products With Fruits.

A number of readers of the Fruit-Grower who market their fruits direct to the consumer, for the most part, have told us that they have found it very profitable to keep poultry enough to supply their customers with poultry products at the same time. There is no reason why a good trade cannot be worked up in this way, and doubtless the series of articles on growing fruit and keeping poultry together will stimulate interest in this matter. One of the growers who brought this matter to our attention said he sold most of his fruit to a good class of city people, who were willing to pay good prices for fruits which were first-class in every way. The fruits were delivered direct to the door every morning, and after the trade had been well established the customers asked if he could not furnish fresh eggs, dressed poultry, etc., In the same way. In this way the business was increased. Eggs are brought to town in carriers holding one dozen, or more if needed, which protect the eggs from breaking. When the fruit is delivered today the customer places an order for eggs tomorrow, or perhaps a dressed chicken is desired. No eggs or chickers are brought to town for which orders have not been secured beforehand, so that there is no time lost in hunting customers for the poultry produce.

We know of another farmer who furnishes milk and poultry produce together in this same way, but we hardly think the combination is so good a one as growing fruit and raising poultry together.

Pure-Bred Poultry the Best.

M. T. E. Orr, secretary of the American Poultry Association, in a recent issue of a poultry paper, presents some figures showing the importance of the poultry industry in Ohio. He shows that over $10,000,000 worth of eggs are produced in that state in a year, and notwithstanding this large sum, states that the yield ought to be increased 50 per cent. Mr. Orr refers to the increasing demand for fresh eggs, and continuing, says:

"In 1902 our September eggs averaged us 2 cents each; in October 2½ cents, and this year they ran higher than last year. But you are not getting any eggs? I know it. That is the reason we are getting such high prices for our eggs, because they are so scarce. Now, there is simply no reason at all for eggs being so scarce in September and October. You are not scarce of pigs or corn, are you? No, you planned and worked to have plenty of both. And that is just what you must do in the egg business. You must do some planning and must carry your plans into execution. Plenty of pullets of the right kind hatched in March will make you plenty of eggs in October. Our earliest pullets, hatched March 18, began laying August 18th, and they are not Leghorns, either. But they have been well bred and well fed. When the Ohio farmer is willing to give the same study and care to his chicken crop that he does to his colt, calf and corn crop, the egg product of Ohio will be doubled, and the profits will far surpass the other crops mentioned."

Mr. Orr also states that there is not a poultry or egg producer in Ohio who is making a success of the business who is doing so with mongrel poultry. This is pretty strong talk. But isn't it true?

Turkey Raising for Profit.

The high prices of turkeys the last few seasons and the probability that the demand for this class of poultry will continue excellent has increased the interest in poultry raising. Certainly fruit-growers who are so situated that they can handle turkeys should be interested, for turkeys can be made the means of helping to keep down insects. They are great foragers, and at a Missouri horticultural meeting several years ago, when Prof. Stedman was asked what to do when grasshoppers invaded an orchard, in which grass and weeds had been allowed to grow, he replied that the best plan was to turn in the turkeys and let them fatten while helping to hold the pest in check.

The Fruit-Grower will be pleased to hear from readers who have grown turkeys profitably, in connection with fruit-growing, andf eels sure that everyone will be interested in the reports of experience. The following article, from Practical Farmer, will be interesting in helping to explain some of the failure in turkey raising:

A reader tells about his want of success in raising turkeys, and wonders what the cause is of his bad luck, when turkeys are reported to be so very hardy. The turkey is a very rugged bird; can stand exposure and hardships as much as any other bird, but it cannot stand the injudicious treatment, especially in the way of feeding, that is so often given to the young and then still tender chicks. A reader in Agriculturist, gives the following points on raising turkeys:

"Have your stock of turkeys on the place by the middle or last of January. Never have hens and gobblers of the same flock; make a change so they will not be all related. Inbreeding is the cause of lameness and puny turks. As turkeys are shy and apt to hide, keep watch of them sufficiently to make them select their nests near the house or in some retired clump of bushes. Let them lay and sit on the ground. Take care of the eggs and handle them carefully; turn from one end to the other every few days. Set 17 to 21 eggs under a turkey hen and if there are any left set them under a chicken hen at the same time. Let the turkey hen have all that are hatched at once, but do not mix them, for if there is one or two weeks' difference in their ages the older ones will run over the younger ones. Place the young turkeys with their mothers in a quiet place near the old nest. Feed them with curds or bread soaked in milk. Season the food with black pepper once a day at least. They will not eat much the first day. Feed four or five times a day. Let everything be quiet and let them go. Keep other fowls away from them. Give them plenty of range, as they will not bear confinement. They are the easiest poultry raised and will pay for themselves in bugs destroyed. In the fall feed whole grains and change as for other fowls."

In the above quotation not enough attention seems to be piad to the point of feeding. It is in this item that most people who attempt to raise turkeys fail. Too many people yet attempt to bring up the little turks on a diet consisting largely of corn meal. This is the great mistake. The little things can't stand much corn meal. In an earlier issue we spoke of our "chicken cake," consisting of bran, middlings, corn meal, meat meal, etc., mixed up with milk and baked like bread or cake, then crumbled up and fed freely. This seems to fill the bill. Sometimes a flock running with the old hen in the meadows and woods, where they find plenty of bugs, grasshoppers, etc., and possibly beechnuts, chestnuts, etc., in the fall, will grow up in free range without ever coming to the house for feed until the old bird brings the flock home when cold weather with snow storms sets in, will thrive, and even do better than the birds brought up around house or yards.

Getting Ready.

There seems to be a popular fallacy imbedded in the minds of most people

True Bred Poultry

Our 75 breeding pens contain the best fowls of the best varieties. We have
All the Standard Breeds.
Our Poultry Farm contains more high grade poultry than any other farm in this country, and is produced from a long line of prominent prize winners. Our COMPLETE POULTRY BOOK, postpaid for 4c. Worth many dollars to you. Write for it to-day.
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are the better sort of necessary things for poultry—always on trial, never excelled. These in 100 lb. bags: **Chick Feed, $2.50; Laying Food, $2.25; Mica Crystal Grit, 65c; Oyster Shells, 80c; Clover Meal, $2.00.** All f. o. b. Chicago, cash with order. Lice Killers, Roup Cure, etc. We've just put out a large Poultry Supply Catalog. Every good thing priced. Ask for it.
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will double your egg yield. Thousands of poultry raisers say so. It costs less, turns easier, cuts faster and lasts longer than any other. Price $5.00 up. **Sold on 15 Days' Free Trial.** Send for book and special proposition.
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lack sufficient nourishment. Fatten them—make them healthy—feed them **Mrs. Pinkerton's Chick Food.** It prevents bowel trouble. It's all food—easily digested. Write for catalog of prize birds at St. Louis and Chicago 1903 Shows. Gives prices and valuable information.
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kills all lice and mites. No injury to birds or feathers. Handles any fowl, smallest chick to largest gobbler. Made in three sizes Pays for itself first season. Also *Lightning Lice Killing Powder, Poultry Bits, Lice Murder, etc.* We secure special low express rates. Catalog mailed free. Write for it.
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40 kinds Turkeys, Geese, Ducks, Chickens, fowls and eggs cheap. 100 grand pictures, 20 house plans. We make hens lay, cure disease, etc. Send 10 cts. for mailing catalogue.

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We can save you money on your wants in this line. We offer you Two-Ply Tarred Roofing Felt, 108 square feet to the roll, complete with caps, nails and cement, per roll, **$1.15.** Three-ply complete, per roll, **$1.35.** **Vulcanite,** the highest grade on the market, complete as above. Price per roll, **$1.50.** We have all kinds of Roofing. Write for Free Catalogue No. 399 on material bought from Sheriffs' and Receivers' Sales. **CHICAGO HOUSE WRECKING CO., W. 35th and Iron Streets, Chicago.**

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Successful

is the nearest of all the out and out automatic machines, both Incubator and Brooder. They can be depended upon under all conditions to hatch the most and brood them the best. All eastern orders have prompt shipment from Buffalo. 100 pens of standard fowls. Incubator Catalog free, withPoultry Catalog 10c.

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and will be greatly pleased to send our **catalogue,** telling all about it, together with a **25c Lice Formula Free of charge** if you send us your address. Only plan totally different from all others. 200 egg hatcher only $3. Agents wanted everywhere, either sex. No experience necessary. Secure your territory at once. Address

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It contains life-like illustrations of 33 different breeds of Chickens, Turkeys, Geese, Ducks; the price of same; how to raise poultry successfully and how to treat diseases common to them. All sent for 6c postage,

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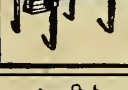

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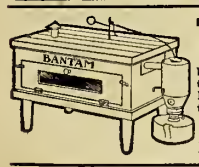

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beats 'em all. One customer writes he obtained 51 chicks from 50 eggs. The Bantam hatches every fertile egg every time. Catalogue proves it—sent free.

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The latest and most completc Incubator out. Your money back if not satisfactory. Address **D. Stutzman, Ligonier, Ind.**

$12.00 Buys a Hoosier Incubator and Brooder. No better made. Easy to run, hatches sure. Satisfaction guaranteed or your money back. Catalogue free. **Hoosier Incubator and Brooder Co., Columbia City, Ind.**

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—a touching story of devotion telling how Mandy paid the mortgage and saved the farm Tells how to make money from poultry. Also Egg record and Calendar for 1904. Mailed free. **Geo. H. Lee Co., Omaha, Neb.**

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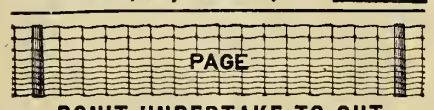

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The No. 7 top wire on Page Stock Fence with wire cutters. You can't do it, and you'll break your cutters. When others tell you that their wire is just like ours, go and test it with the cutters.

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Fifteen years in the business. Stock for sale. Black Langshan and White Plymouth Rock chickens; eggs for hatching in season. Write for anything wanted.

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that there is nothing to do in the poultry business but rake in the profits. There is ono great essontial to success in any line of business, poultry not excepted, and that essential is getting ready, and this one point should receive most careful consideration from those who intend entering the field. A great number rush into the business without the slightost conception of what is really required, and so we hear of failure after failure, which would not occur if this business was given the consideration and preparation that is given to any other business enterprise.

There have been articles galore published on this subject, and it would seem that there were but little to be said now, especially by an amateur in the business, still I know by my own experience how little those who have never tried it realize just what getting ready means. I thought when I started out that I was very well prepared, and would make a good show in a short while, but by the time I had battled with the various troubles which arose on account of my not being prepared as I should have been, I soon learned that it took time and preparation to succeed with poultry. I should not like to tell you of the number of chicks I had hatched and that were lost simply because I was not ready for them. Hatching the chicks is a small matter, very small. I have found that the incubator and brooder is away ahead of the old hen, providing you have a place for your brooder chicks. It will not do to wait until the chicks are out of the smell to prepare this place. Get ready first, then hatch the birds.

If you expect to capture the high prices in the spring, as well as have early pullets to lay next winter, get ready now. If your layers are not on hand now, you will probably not have any until in the spring. After an experience last year of raising my early chicks in an upstairs room, I decided that I would have a brooderhouse. It is eight feet square, with a good floor well covered with sand, well lighted, and opens into the scratching shed, so the chicks can run out on good days. I have also a piano box brooder which makes a good colony house, too. I have succeeded with these to please any one.

I expect to start the incubator in January, so I am getting all my appliances in readiness now. The scratching shed is cleaned out, fresh cinders put in, the partitions needed are there, the straw in the loft. The henhouse has been thoroughly renovated, arrangement made for feed, and I expect to meet with a great measure of success, because I have been putting in this summer getting ready. I got the top price last spring and the spring before for early broilers, so this next season I shall go after the market in good style. If I suceed you will probably hear from me again. In consequence of having early pullets, I now have one that laid her first egg August 6, when she was just five months old. She is a Silver Wyandotte. This is doing pretty well, I think.—Mrs. Jeanette Kerr in American Poultry Journal.

Lice on Fowls.

Some persons have supposed that lice are found on fowls only during the warm weather. Farm and Fireside calls attention to this error, and says:

Lice may be found on the bodies of fowls at all seasons of the year. While lice multiply very rapidly in summer, they also multiply some during the cold period of the year. The little red mites are more prevalent in summer, existing mostly in the poultry house, and are not difficult to eradicate. The real enemies are the lice which do not leave the body of the fowls, some kinds working in the feathers. Examination of the heads, under the wings, along the backs and around the vents will nearly always disclose their presence. Remedies are not difficult to find. A thorough drenching of the poultry house with kerosene emulsion, to which a little crude carbolic acid has been added, will prove very effectual against the red mites and other intruders of the poultry house if done every week, while even ordinary melted lard is effectual in destroying lice on the bodies, though linseed oil, applied with a sewing machine oil can, is perhaps better. These remedies are mentioned because they are simple. The advertised lice killers are also excellent. No kind of oil or grease should be used too freely on the bodies of fowls or chicks. The difficulty is that farmers and poultry men as a rule do not employ any remedy at all until lice have gotten the mastery of the fowls and the flock is being thinnned out by death. Young turkeys and young chicks quickly succumb to lice, for as soon as the chicks are hatched the lice leave the dams and infest the young ones. The dust bath, cleanliness in the poultry house, examination of the fowls once a week and prompt work as soon as evidence of lice appears will save not only the young birds, but also increase the number of eggs, as well as promote thrift in the flock. The best remedy is prompt attention and no delay in prevonting lice from getting a foothold.

Poultry Raising on a Large Scale.

When I last wrote you it was from Santa Rosa, the home of Luther Burbank. Well, this is the home of the hen. Petaluma is said to be the center of the most extensivo poultry county in the world. It is one of the nicest and best towns of its size (4,000 population) in the West. And the saying is that it has been built on eggs.

Within a radius of five miles of Petatuma it is said thero are 850,000 hens, besides large numbers of other fowls. And nine-twentieths of these hens are White Leghorns. There are individuals here who own over fiftcen thousand White Leghorn hens.

During last week there were shipped from Petaluma station alone 21,372 dozen eggs; so says the Petaluma Poultry Journal.

Business men tell me that a few years ago during the hard times when nearly all other people were hard up and had to use their credit, the poultry men and women had plenty of money.

These egg producers calculate on the average hen giving a profit of one dollar a year. They now get 35 cents a dozen net for eggs. The tourist who eats them at a restaurant pays ten cents a piece for them.

Petaluma is 37 miles north of San Francisco.

One of the many interesting sights I've seen in California was this morning from a little mountain top where the valleys for miles and miles, and hills, too, were literally covered with poultry houses; nearly all washed white with white chickens in their "runs" around them.

In Southern California I saw sections of country thus covered with bees; where the apiaries are moved from place to place, on long coupled bee wagons, like Gipsy camps.

Petaluma, Cal. J. W. GREENE.

"I would not do without the Fruit-Grower, as I consider it a valuable paper for reference. I now have the entire publication for the year 1903, and shall bind the same for future reference."—W. S. Wilson, Hardin, Ill.

$5.00 WORTH OF SEEDS FREE

I want to get in touch with every buyer of seeds. My plan of giving $5 worth of tested seeds free, is worth knowing. It includes a chance to make more dollars. Send for catalog and get packet of choice flower seeds FREE. A postal will do it.

HENRY FIELD
Box 15
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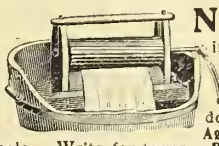
"The Ear-Seed-Corn Man."

Champion Peach Trees

100 Genuine Champion. Perfect little trees. Express paid to your station for $5.00. The Champion is the hardiest and best peach for general planting. A full line of other nursery stock at lowest possible prices for high grade. Write at once for descriptive list.

NEW HAVEN NURSERIES,
Dept. H. New Haven, Missouri



No Dirt Left

in clothes washed with the **BUSY BEE WASHER.** 100 pieces in 1 hour and no hard work done. That's the record. **Agents Wanted.** Exclusive sale. Write for terms. **BUSY BEE WASHER CO., Box R, ERIE, PA.**

450,000 TREES

200 varieties. Also **Grapes, Small Fruits etc. Best rooted stock. Genuine, cheap. 2 sample currants mailed for 10c. Desc. price list free. LEWIS ROESCH, Fredonia, N. Y.**

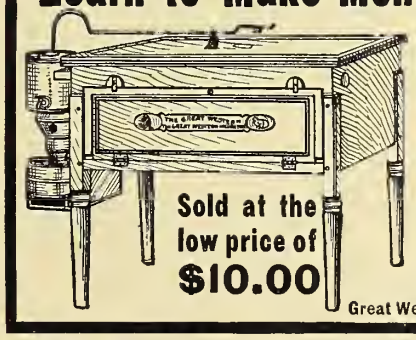
General Nursery Stock

Apple, Peach, Pear, Cherry and Plum trees, Berries, Grapes. Hardy Roses, Shrubs, Vines, Evergreens, etc. Strictly first-class. Satisfaction guaranteed. Write for prices. Agents wanted.

E. MOHLER, Plattsburg, Missouri

E. J. Morton, Tarlton, Tenn., has mailed his price list of forest tree seedlings to the Fruit-Grower. This list will be sent free on request.

Learn to Make Money with an Incubator



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The 1904 MODEL of our **100 EGG Great Western INCUBATORS**

will be sent to anyone anywhere on **Forty Days Free Trial,** to demonstrate that it is the easiest to operate and most profitable machine on the market. We have spared neither material nor workmanship to make this incubator the most productive of results of any on the market. Made of first grade, thoroughly seasoned poplar, with 12 ounce cold rolled copper boiler and water pipe heating system, with perfect moisture and ventilation system, and regular metal deflector and safety lamp of the most improved pattern. Take advantage of this opportunity and send for catalog to-day of our Incubators and Brooders

Great Western Incubator Co., 915 Liberty St., Kansas City, Mo.

17 Hatches Free

To enable you to pay for a **Chatham Incubator and Brooder**

We allow you *One Years' Time* to use these superb, scientific machines before we ask you to pay us one cent for them. More than that, *We Prepay the Freight* to you. Couldn't do this if the machines were not perfect. Surest, simplest and best everyway. The temperature regulation and ventilation is our own exclusive feature, never fails. Construction perfect, price low for high quality machines.

We Send You a Book FREE

that tells all about **Chatham Incubators and Brooders,** what they are, why and how we sell them on one year's time, and all about it. Get the book today.

M. CAMPBELL FANNING MILL CO., Mfrs. of CHATHAM Incubators and Brooders. 162 Wesson Av., Detroit, Mich.

The Ormas

There is but one kind of proof which should have any weight in selecting an incubator. That is the percentage of chicks it will hatch and rear to the point of assured life. That's just where the Ormas Incubator leads. It not only "shells 'em out," but it gives them a

THE INCUBATOR THAT SHELLS 'EM OUT

The Ormas

strong healthy start. If you have any doubt—or would like to read some actual proofs, send for my new catalog. It is free and tells some truths in words and pictures no one can deny.

L. A. BANTA
Ligonier, Indiana.

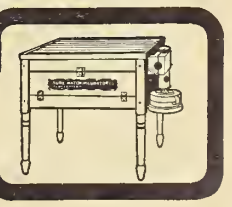
200-Egg Incubator For $12.80 Fully Guaranteed

The wonderful simplicity of the **Wooden Hen** and the greatly increased production forced by its immense sales, makes it possible to offer this perfect hatcher for **$12.80.** Self regulating and guaranteed to hatch as large a percentage of eggs as any other hatcher at any price. Send for the free illustrated catalogue with 14 colored views. **GEO. H. STAHL, Quincy, Ill.**

PROFITABLE "PEEPERS"

Welcome sounds—the first faint "peeps" from cracking shells—heard coming from the evenly heated egg chamber of the

Sure Hatch Incubator



Those sounds mean money profit for the owner. A Sure Hatch starts chicks in life with strong lungs, solid bodies and good constitutions. Our free catalogue C 40 tells how. Write now.

Sure Hatch Incubator Co., Clay Center, Neb., or Indianapolis, Ind.

Questions and Answers

(Continued from Page 33.)

C. D. G., Denham, Ind.—Please send me the address of any Minnesota nurseries which raise trees for windbreaks.

Gardner Nursery Co., Osage, Iowa, have an advertisement in this issue, calling attention to windbreaks. This firm is almost up to the Minnesota line, and can furnish you with what you want.

A. A. S., Bucyrus, Ohio—How can I prevent the leaf hopper from injuring the leaves of my young apple trees?

What is the nature of the injury? The buffalo tree hopper injures the twigs, but not the leaves. Describe the insect or the nature of its work, for the tree hopper does not attack the leaves.

J. H. M., Berlin, Okla.—Someone has spoken of propagating blackberries from tips. Does that mean to put soil on the ends of the vines and let them sprout, or cut off the ends and put them out like grape cuttings? Can they be propagated either way? (2) Whale oil soap is frequently mentioned in the Fruit-Grower. It is not sold here. Where can I get it?

Blackberries are propagated from suckers and from root cuttings, and not from tips. (2) Whale oil is handled by most drug stores, but if quantities are wanted it is best to get at wholesale. Leggett & Bro., 301 Pearl St., New York, or Missouri Valley Seed Co., St. Joseph, Mo., can furnish it.

W. T. Mo.—(1) What do you consider the best varieties of cherry to plant for productiveness and early bearing? (2) What is the cause of gum lumps on upper limbs of peach trees? Remedy? (3) What other variety of pear is as near blight free, of as thrifty growth, and as hardy and productive as Kieffer? (4) Can you tell me something of the "Mammoth Pippin of Arkansas," a wonderful grower, but has not yet set any fruit? (5) What of the "Apple of Commerce?" Has it any value? (6) Best evergreen for center bed on a lawn, for quick growth and rich effect. (7) Give name of a reliable dealer in tree seeds. (8) Best all round red raspberry.

Answers by Dr. Whitten: (1) Among cherries I would recommend Early Richmond, English Morello, Montmorency. (2) Gum will issue from peach trees wherever they are injured as a rule. If the gummy spots are numerous over the trees it will be well to look for the pinhole borers, a tiny insect which makes small tunnels through the tree. If he is found in abundance it would be well to cut out all the wood and burn it in order to destroy the insect. (3) I am not prepared to recommend any pear equal to the Kieffer in the respects mentioned. Other pears which are worth planting are Garber, Anjou, Seckel, Lincoln, and probably two or three others. (5) I have not seen the Apple of Commerce fruiting sufficiently in large commercial orchards to predict what place it will take in our commercial list. I believe it to be, however, one of the very promising comparatively new sorts. (6) Among the best evergreen trees are the arbor vitaes, if you wish small ones, and the Colorado Blue Spruce or American Hemlock if you desire species which will grow larger. (7) Nearly all large seed firms and large nurseries advertise tree seeds. (8) At the Experiment Station we regard the Turner and the Loudon as being among the best red raspberries for our soil which we have tried.

H. R., Conrad, Iowa—(1) Please explain how combination crosses are made in plant breeding. (2) How are six or more varieties brought into the same combination? (3) If blossoms are emasculated and covered and several varieties of pollen mixed together and applied to the pistils, would there oe a possibility of two or more pollen grains assisting in the fertilization of a single stigma?

Answer by Dr. Whitten: (1) The combination crosses are usually effected by first crossing two varieties and then by crossing this offspring with a third variety, which would secure parentage from three sorts; or, cross this first offspring with a cross between two other varieties, which would give a plant of four distinct kinds. This method of first crossing two varieties and then of crossing their offspring with other crosses can be carried on until the parentage is multiplied to any desired number. (3) Mixing different kinds of pollen on a stigma will not cause any one seed in the ovary to be fertilized with more than one kind of pollen. If the ovary is a compound one, different seeds in it may be fertilized with different pollen grains, but no one seed can be fertilized with more than one kind of pollen.

H. O. L., Green City, Mo.—Please give me information on the following in January issue of your valuable paper: How to make, plant, and propagate plants by root cuttings and when should cuttings be made? A full explanation will be appreciated. (2) How to stratify peach seed and when; also how to handle and plant same? (3) What stocks are roses budded on? (4) How to graft weeping mulberry, etc.

Answer by Dr. Whitten: (1) A few plants are propagated by means of root cuttings. Among our fruits, the blackberry is perhaps the only one that is extensively propagated in this way. The root may be taken up and cut in pieces two or three inches long at any time when the plants are dormant, and these pieces may be planted out when the land can be worked in the spring. These root cuttings may be stored over winter in the cellar if desired, packing them in moist sand or moist sawdust; they should not be kept too wet. Peach seeds should be mixed with moist sand in the autumn and placed either in a box or in a pile out of doors in a shady place where they will freeze during the winter. They may then be planted, sand and all, in early spring, where they are to go in the nursery rows. (3) Roses may be budded on almost any stock of hardy rose. Certain varieties are usually worked on special stocks. (4) We have had the best success in grafting the weeping mulberry by growing the stock until it reaches 8 to 10 feet in height, then sawing it off at the desired height for the head and inserting several scions in the cleft graft method at the summit. The scions may be taken any time during the winter and kept entirely dormant until spring. The grafting should be done just about the time the mulberry starts into growth but the grafts should be kept entirely dormant until they are inserted. The wound should of course be waxed after the scions are put in.

W. A. F., Moselle, Mo.—I planted a patch of raspberries last spring—Kansas black caps. Pinched them back twice during the summer. The vines made a fairly good growth, but are inclined to lie on the ground. Some of them tipped but not all on account of dry season. I mulched them with straw, early in fall. How shall I treat them in the spring? Shall I prune them any or leave them as they are? Would it be best to tie them up and cultivate them before they fruit or leave the straw mulch on and cultivate them after they are done fruiting?

Answer by Dr. Whitten: It will probably be best to prune the black-cap raspberry by cutting back the side branches to 12 or 18 inches in length. If the ground is perfectly clean they may be allowed to fruit before the mulch is removed, otherwise it will be better to remove the mulch and to cultivate thoroughly during the early spring up until nearly the fruiting season.

A. A. S., Bucyrus, Ohio—(1) Will the common wild or bird cherry do for a stock on which to propagate cultivated varieties of cherries? (2) How should I treat apple seedlings which did not make enough growth last season to permit of their being budded? Would you cut them back close to the ground and allow a new sprout to grow?

Answer by Dr. Whitten: (1) The common wild or bird cherry is not generally successful as a stock on which to work other varieties. (2) The small apple seedlings may be cut back close to the ground and a single new sprout obtained next spring by pinching off all surplus sprouts; or, if they have a good stem below the branches at present, they may be budded even in the two-year-old wood when they have made good growth during the present season.

A. H., Choctaw, Okla.—Please tell me how to grow Keiffer pears, Ben Davis apples and Russian mulberries from cuttings. Is it advisable? Exactly how and when and where, kind of soil, slope, care, etc. (2) Also when is the best time to have cedars sent from the western part of Oklahoma to set here. Will these cedars spread disease to my apple trees if set in same field?

Answer by Prof. Albert Dickens, Kansas Experiment Station: Named varieties of fruits are propagated by some method of division, the pears and apples are propagated by budding or grafting. For apples the stocks in common use are seedling apples one year old. If grafted they are worked during the dormant season, a whip graft being most commonly used. The same stock is used for budding, the work being done while the stock is in active growth, a bud of the current year's growth being inserted under the bark, the process being known as T-budding. Pears are worked in the same way, seedling stock being used. Both pears and apples may be rooted from cuttings, but a propagating house is necessary to secure proper conditions of temperature and moisture, and even then the proportion taking root is usually small. These fruits are never grown from cuttings in our climate except sometimes for experimental reasons. The Russian mulberry may be grown from cuttings, and if some special variety of fruit is desired, if you have some tree which produces especially good fruit and wish to propagate it, the cuttings may be used. Best results are secured by making the cuttings late in the fall, about sixteen inches long and made from the new wood, and stored in a cool cellar in slightly moist sand. They may be buried in the ground below frost line over winter and taken up and set as early as the ground works well. In favorable seasons cutings taken from

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the tree in early spring and planted immediately usually give fairly good results. If wanted for timber, posts or windbreaks the seedlings are easily grown and transplanted. The berries may be planted as soon as ripe or the seed be washed out and planted the following spring. The seed should be kept in a dry, cool place. Soil for nursery work should be rich, deep and in a high state of cultivation, a soil containing a fair per cent of sand is to be preferred. Nursery stock demands the very best of cultivation, slip-shod careless work is certain to cause failure. (2) We have had best success setting young cedars in the spring just before the buds are starting into growth. Too great care cannot be given to preventing the roots of young evergreens from drying. One stage of the development of the fungus which causes the apple rust is the cedar apple. The disease is a serious one, but where the disease is kept from the cedars there would be no danger of the apple being affected. Where cedars are planted for ornamental purposes or even for windbreak it would not be very difficult to keep the disease in bounds. The young trees should be watched for any appearance of the fungus and this destroyed.

F. H. J., Riverton, Iowa—Can you give us some pointers on how to start evergreens. I mean from seeds, twigs or however the different kinds are started.

Answer by Prof. Dickens: With a very few exceptions, evergreens are grown from seeds. A large part of the stock sold is brought in from the forests as seedling trees, grown in nursery rows for one or more years, usually under shade, and sold from the nursery rows. The seedlings are very delicate and when grown in the nursery from seed, they are planted in carefully prepared soil, covered lightly with earth and a thin cover of clean sand spread over the seed beds to prevent the young plants from being splashed with mud. The seedlings require shading for one or two years, and should be transplanted at least every two years in order that a mass of fibrous roots be formed to support the tree after it is transplanted to a permanent location. The seed is usually planted in spring after the ground is well warmed and care must be taken to have fresh seed. The seed of the red cedar is coated with a gummy substance and it is a common practice to treat the seeds with lye or mix them with ashes when planting. Even then only a small part germinate.

E. F. E., Perry, Iowa—We have been reading the Fruit-Grower for several years with interest and profit and consider it a source of reliable information, hence we wish to ask a few questions about the leading varieties of pears, apples, peaches and plums succeeding and likely to be in demand in Eastern Oklahoma, with a view of planting same there next spring. (2) What is the usual and best method of preparing peach pits, Myrobolan and Mahaleb seed for planting there? (3) Can the best kinds or any paper shelled pecans and Japan walnuts be successfully grown there?

Answer by Prof. Dickens: The following list is recommended by the Oklahoma Experiment Station: Apples:—Missouri Pippin, Ben Davis, Winesap, Jonathan, Arkansas, Maiden Blush, Mammoth Black Twig, Cooper's Early White, Yellow Transparent, Red Astrakan, Lowell, Rome Beauty, Janet, Oldenburg, Early Harvest, Grimes Golden, Sweet June, Wolf River, York Imperial, Summer Queen, Romanite, Benoni. Pears:—Kieffer, Bartlett, Duchess, LeConte, Garber. Peach:—Elberta, Alexander, Champion, Crawford, Heath Cling, Salway, Amsden, Mamie Ross, Sneed, Arkansas Traveler, Early Rivers, Triumph, Hale, Old Mixon, free and cling; Indian, Piquet Late, Bell's October, Crosby, Stump, Globe, Wonderful, Snow, Family Favorite, Foster, Carman. Plums:—Wild Goose, Abundance, Burbank, Marianna, Damson Golden Beauty, Lombard, German Prune, Weaver, Green Gage, Quaker, Wilmeth, Shipper's Pride, Miner, Normand, Ohio Prolific. (2) Planting in the fall in well prepared ground so that the seed is cracked by the frost is the usual method of planting these seeds. They may be stratified in moist sand and planted in spring. (3) I do not know of any plantings of Japan walnuts or pecans there. The pecan is a native of some of the counties of Oklahoma and some varieties would probably succeed there.

W. N. Scarff, New Carlisle, O., is offering some decided bargains in his ad in this paper. Mr. Scarff handles only the best varieties and considering quality, his goods are remarkably cheap. He sells everything for the fruit grower and mails a splendid catalogue to all who write for it. If you are interested in strawberries, read his offer of three new plants free.

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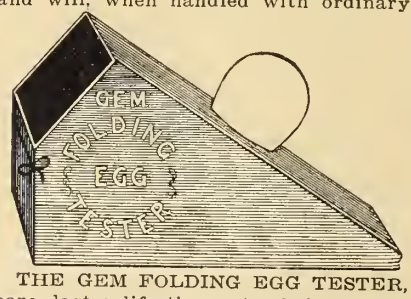
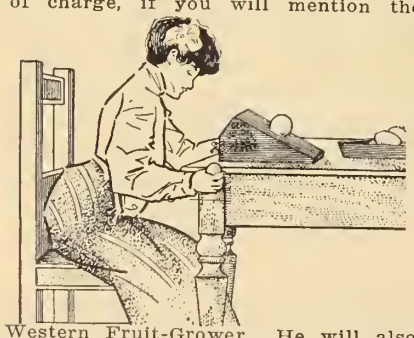


THE GEM FOLDING EGG TESTER,

care, last a life time. A whole case of eggs can be tested within five minutes, and the Tester will report the exact condition of the eggs with a promptness that never fails.

A limited number of these Testers will be GIVE7N AWAY FREE, and if you will send to GEO. H. STAHL, Quincy, Ill., he will send you one free of charge, if you will mention the



Western Fruit-Grower. He will also send you full directions for testing eggs, both for table use and hatching purposes, together with a handsome new Catalogue containing 14 colored views of Incubators and Brooders, including one showing the "Development of the Chick" from the first to the twenty-first day. Write at once, for the supply is limited.

The "Egg Basket" People.

A goodly number of our readers have in the past profited by reading poultry advertisements of Darling & Company of Chicago. The little book "Fill the Egg Basket" which has been so frequently mentioned in their advertisements has become almost a classic among poultrymen. Those who have put to the test and know the value of the new preparations formerly put out by Darling & Company will be glad to know, therefore, that they are to occupy a more extended field in the poultry supplies in the future. They have lately put out a general supply catalogue, the first they have ever issued, listing their old standby preparations and several new ones, in addition to many select poultry appliances which they do not themselves manufacture but for which they have become the selling agents. Not only poultry, but stock supplies, find a place. They announce the new Darling Stock Food, a 30 per cent protein product, which from its perfecting a few months ago began to command attention. A feature of this widening out by this firm is their Advisory Board consisting of poultry and stock feeding experts to whom they refer for correct answer free of charge, the questions upon care and feeding of poultry and stock submitted to them by their patrons. All of who have used the Darling preparations will want this general catalogue. It is a good book issued by reliable growing concern which will be found valuable to all poultry raisers and stock feeders. It may be had by writing the firm at the address given in the advertisement in another column.

Fruit Packages of All Kinds.

The following notice from a trade paper, The Barrel and Box, will be of interest to Fruit-Grower readers:

"The Pierce-Williams Co., South Haven, Mich., write us as follows in regard to their projected industry at Jonesboro, Ark.: 'We wish to correct an error in the September issue of The Barrel and Box in which the impression is given that we are to move our factory from South Haven to Texas. We are now building at Jonesboro, Ark., a fine new plant, consisting of large veneer mill, warehouses and office, for the manufacture of raw materials for use in the factory at this place. Will also manufacture some packages there for our Southern and Western trade, and expect to engage extensively in the box and shook business.'"

The Pierce-Williams Company is one of the largest firms of the kind in the country, and the fact that it will have a new factory, in addition to its old plant, will be of especial interest to fruit raisers in the West and Southwest. This firm has an advertisement in this issue of the Fruit-Grower, and should do a large business with our readers. When writing for prices, catalogue, etc., don't fail to mention the Western Fruit-Grower.

Orange Judd's Opinion of Dr. Oneal.

"The editor of Orange Judd Farmer has just received a copy of Dr. Oren Oneal's new book—24th edition—entitled "Eye Diseases Cured Without Surgery." It is printed in colors, containing new pictures of the doctor and much valuable information regarding the care of the eyes, diet, exercises, baths, etc. Dr. Oneal writes us that he will be pleased to send this book free of charge to any reader of our paper who is interested enough to write for it. A postal card will do. If you or any of your friends have any form of eye disease or trouble, the book will be interesting and a valuable aid. The doctor will also go a step further and write you a personal letter of advice, entirely free of charge, if you will write him a history of your case in your own words as you understand it. We know the doctor personally. He has been advertising in our columns for years, and we can vouch for his entire reliability. Ordinarily our guarantee would cover this point, but we wish to state for the satisfaction of any who are in doubt, that we have never had a single complaint regarding Dr. Oneal. He treats patients all over the world, and thousands of our readers have placed their cases in his hands. Of course he does not guarantee to cure all, but he always fulfills every promise, and will not take a case unless there is hope of benefiting it, and he certainly does cure when others say there is no hope. Write for the book today to Suite 926, 52 Dearborn St., Chicago."—Orange Judd Farmer.

Book for Poultry Keepers.

Anna L. Pinkerton Co., Hastings, Neb., announces that their 1904 catalougue is now ready for mailing. This is a poultry book, which tells how to raise little chicks successfully, how to secure eggs at zero and how to make money with poultry.

A Young Man's Best Judgment.

A young man often makes a mistake in deciding important questions which determine his future welfare. No question that arises in a young man's career is more important than that of his education. True, there are schools everywhere, many of them good schools, but there are few schools where young men and women are thoroughly qualified to accept positions that pay good salaries, or enter into business for themselves with the necessary qualifications for a successful business career.

We call the attention of the readers of this paper to an announcement elsewhere entitled, "Chance For A Young Man." It is worth while for any young man to read and reflect upon the few statements which are made by Professor C. T. Smith, president of the Kansas City Business College, in reply to an inquiry made by your reporter.

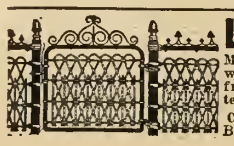
A SAMPLE BOX OF

The Best Headache Cure

ever offered for sale for 12c postpaid.

A sample Box of the **Safest** and **Surest** Corn Cure on the market for 12 cents postpaid. Agents wanted.

BALLAGH & COMPANY
NEVADA, MISSOURI

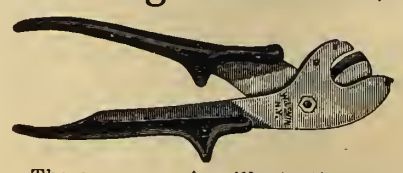


LAWN FENCE

Many designs. Cheap as wood. 32 page Catalogue free. Special Prices to Cemeteries and Churches. Address

COILED SPRING FENCE CO.
Box 413 Winchester, Ind.

Pruning Shears Free



The accompanying illustration shows the Levin Pruner, one of the strongest shears made, considering the weight. This shears comes in two sizes. No. 1 weighs 7½ ounces, and will cut a half-inch stick of dry oak. No. 2 weighs 13 ounces and will cut a three-fourths inch stick of seasoned oak. The cut is smooth and clean.

Size No. 1 will be sent postpaid for 75c
Size No. 2 will be sent postpaid for $1.

or if you want to secure a pair of the pruning shears free, we will send same on following basis:

Size No. 1 will be sent FREE for two new subscribers at 50 cents each.
Size No. 2 will be sent FREE for three new subscribers at 50 cents each.

The Fruit-Grower has sent out hundreds of pairs of these shears, with only one complaint. Order a pair today—or, better still, send some new subscriptions and get a pair free.

THE FRUIT-GROWER CO., St. Joseph, Mo.

Want to Save Your Fruit-Growers?

GET A BINDER AND KEEP EACH NUMBER THROUGHOUT THE YEAR

The Fruit-Grower has secured a handy binder in which twelve numbers of the paper can be kept for binding. The binder is large enough to hold the issues for the entire year, each month's paper being placed therein when received.

An index will be furnished with the December number every year, so that those who save their papers can have them bound, with an index for the entire volume.

This binder will be sent for

75 Cents, Postpaid

The Fruit-Grower is too valuable a paper to be destroyed. Get a binder and save every issue. A binder will last for years.

THE FRUIT-GROWER CO., St. Joseph, Mo.

Ruptured

Send for our
SINGLE $6.00 DOUBLE $8.00 RADICAL CURE TRUSS
On Free Trial

"THE ONLY PERFECT TRUSS." Totally unlike anything made. You Pay When Satisfied. WE TAKE ALL RISK.
F. BUCHSTEIN CO., 608 R 1st Ave. S., Minneapolis.

Great Crops of Strawberries

AND HOW TO GROW THEM

They Grow Big Red Berries

Physically Debeloped Plants

The Book of All Strawberry Books

IT is a treatise on Plant Physiology and explains how to develop the fruit organs in a plant. Improving plants through physical changes in buds is now recognized as correct by all advanced horticulturists. If you want to be the strawberry mogul in your community, send for this book.

FREE

R. M. KELLOGG

Three Rivers, Michigan

GET AN ORCHARD OF YOUR OWN

Part of Elberta Peach tree, photograph taken July 27, 1903. This tree stood 11 feet high and 10 feet spread. Was located in one of the family orchards on one of the places purchased by us. It has never received any attention in the way of cultivation or pruning. Was two years old spring 1903. There was no crop of Elberta peaches two miles north or two miles south of our ridge for hundreds of miles. Our ridge had a crop of peaches, apples, plums, pears and figs. This is what we call a three year old tree, having had three seasons' growth, but in months equal to thirty months from planting to picking point.

If you are not satisfied with your present location, or if you want an orchard of your own, but are unable to pay for it at one time, then we urge you to investigate the proposition of the Southern Orchard Planting Association.

Our association owns 5,000 acres of land in the best section of Arkansas, which is being planted to peaches. The orchards are handled in the most scientific way by expert fruit-growers. Purchasers pay a small sum monthly and are given a bond for deed, which is made when payments are all made.

The opportunities which our plan offers are:

1. Those who can make a monthly payment can get an orchard in a few years, and thus secure a competence.
2. During the time of payment the trees are cared for by experts. A trustee sees to it that proper attention is given the trees.
3. Non-resident investors are protected by this trustee, who is in every way responsible.
4. Carload shipments of fruit will always be secured, because of the large acreage.

Our land is in a section which seldom misses a fruit crop. Fruit arrives on market just after Texas peaches are gone, and before the fruit from Northern Ozark country is ripe. Net profits from peaches average about $100 per acre annually.

Write for illustrated circulars, showing views of our orchards already planted, together with booklet outlining our plan. The most careful investigation invited. For full information address

WATER WORKS BUILDING **Southern Orchard Planting Association** KANSAS CITY, MISSOURI

STARK BRO'S NURSERIES & ORCHARDS CO

Capital Stock $1,000,000.00—All Paid Up

Oldest Nurseries in the West

Established 1825

Largest Nurseries in the World

4,675 Acres

GENERAL OFFICES, Nurseries, Packing and Storage Houses, LOUISIANA, MO.

BRANCHES: Starkdale, Mo., Fayetteville, Ark., Huntsville, Ala., Atlantic, Iowa., Dansville, N. Y., Portland, N. Y.

For Spring 1904, we have the **largest, best assorted, handsomest** stock ever offered to the planters of the U. S.

APPLE: The largest and FINEST stock of 1-yr. and 2-yr. trees ever grown. We are headquarters for all best market sorts and **SOLE OWNERS** of **BLACK BEN DAVIS** (Trade-Mark No. 38,556) and **CHAMPION** (Trade-Mark No. 32,184), the **TWO GREATEST MONEY-MAKERS** known to-day. **DELICIOUS** (Trade-Mark) **SENATOR** (Trade-Mark) **Liveland Raspberry**, Payne Keeper, and all leading commercial sorts.

PEAR, Standard: Leading sorts, in- cluding Fame, Alamo, Ozark, Kieffer, Lincoln (true Lincoln of Ill.), Garber, Bartlett and many others. **Dwarf:** Duchess, Anjou, Howell, Fame, Bartlett, etc.—**extra fine trees.**

CHERRY: One of the surest crops that can be grown, and one that always brings good returns. First-class trees of Dyehouse, Early Richmond, Eng. Morello, Montmorency (true) Suda, Baldwin, Wragg, Ger. Ostheimer.

GRAPE: Portland, N. Y., grown vines, 1- and 2-yr., all leading sorts, including **Hicks,** which far excels Concord—a week earlier, better quality, better grower, better bearer; and **Stark-Star** (Trade Mark), "an important addition to the Grape list, filling a place occupied by no other." **We will meet all competition in quantity, quality and price.**

SMALL FRUITS: Leading sorts for all purposes: London Market, Fay, Victoria, Red Cross, Pomona Currants; Houghton, Downing, Josselyn Gooseberries; Cumberland, Cardinal, Haymaker, King, Kansas, Cuthbert, Loudon and other Raspberries; Illinois, E'y King, E'y Harvest, Kittatinny, Mersereau, Snyder and other Blackberries

BUDDED LILACS: Superb sorts, both Single and Double; colors are pure white, light and dark blue, light and dark purple, purplish red, rosy red, satiny rose, etc.

ROOT GRAFTS of Apple of all leading sorts, and Kieffer and Garber Pear. Whole-root grafts in stock; piece-root **made to order.** Special prices on large lots.

SEEDLINGS, STOCKS and CUTTINGS: We are still able to offer Apple Seedlings in limited quantities—several grades of both American grown and French; also Mahaleb cherry and French pear seedlings, Angers quince stocks, Mariana and Myrobolan plum, etc.

SHADE AND ORNAMENTAL TREES, Shrubs, Roses, etc. **Bechtel's Dbl.-flowered Wild Crab Apple** is unsurpassed for **hedges;** of **iron clad** hardiness.

STARK TREES—Orchard of Japan Plums, Tarrant Co., Tex. "Already my 5-yr. old trees have more than paid all expenses of growing the orchard, **including cost of land.** You have helped me on the road to success."—E. V. DUNN.

PLUM: An orchard of improved vari- eties properly planted, insures a good income year after year. Recognizing this fact, we have prepared for the demand and can furnish all the leading kinds by **the car load**—the finest stock and the finest sorts known, such as Gold, Shiro, Gonzales, America, Sultan, Climax, Abundance, Red June, Burbank, Wild Goose Improved, Mathews, Lombard, Damson, etc.

PEACH: More than 1,500,000 Elberta alone, and all other leading commercial sorts in proportion—Greensboro, Triumph, Mamie Ross, Carman, Alton, Champion, Crawford (Early and Late), Elberta Cling, Bequett, Mathews, Heath Cling, Krummel, etc., etc. Our peach are grown from the very best natural seed, are healthy, thrifty, **true to name.** Plant peach for **quick returns.**

Volume Fifteen February, 1904 Number Two

THE WESTERN FRUIT-GROWER

ST. JOSEPH, MISSOURI

THE NEW HAVEN NURSERIES

NEW HAVEN, MISSOURI

J. Bagby & Sons Co., *New Haven, Mo.*

Location 67 miles west of St. Louis on Main Line of Missouri Pac. Ry. 100,000 cubic feet Frost Proof Cool Storage. Established 1872—Incorporated 1892. Capital Stock and Surplus $60,000.

Fruit Trees a Specialty

WHOLESALE AND RETAIL

"Bagby-Grown" Nursery Stock. Three Years and Up.

High Grade Nursery Stock Direct to Planters

Send Us a List of Your Wants for

SPECIAL PRICES

Our nurseries are not "on paper," but comprise over 400 acres devoted exclusively to the Nursery Business. Over 170 acres covered with young growing Nursery Trees—no old, overgrown, unsalable trees are allowed to stand and thus take up acreage and breed disease. Over Two Million Fruit Trees now growing on our premises, but nothing over 2 years from bud or graft.

Special Bargains on Peach, Kieffer Pear, Apple and Japan Plum Trees

PEACH TREES

512,000 one year from bud and over 600,000 in dormant bud by actual count. Elberta, 260,000 one year from bud. Varieties true. No disease. All on land never before in peach trees.

PEAR TREES

100,000 Kieffer, the best commercial sort. Full assortment of other varieties. All grown on well branched whole roots, imported French stocks. Will cost you no more than others charge for trees grown on Japan stocks, and in our opinion are worth double.

CHERRY TREES

150,000 in stock, mostly Richmond, Montmorency, Wragg, Baldwin, English Morello, etc. Just the sizes you want.

APPLE TREES

512,000. Others may grow more apple trees, but none grow any better quality. Come and see them or order and the trees will show. 11,500 Payne's Keeper.

PLUM TREES

162,000, mostly on plum stocks. High grade. Best sorts for general planting.

Our shipments, the past season consisted of over one million fruit trees, which went to thirty-four states and territories, aggregating about sixty-five furniture carloads. Write for new Condensed Wholesale and Retail List.

WE PAY THE FREIGHT AT PRICES IN THIS LIST

Block of 50,000 Two-Year Keiffer Pear.

Actual Values in High Grade Nursery Stock

VARIETIES FOR THE MIDDLE WEST

Lee's Summit has a soil peculiarly adapted to the growing of trees and plants that have a firm texture of wood, trees and plants that stand transplanting better than those grown on inferior land.

Our varieties are all selected especially for the Middle West. We refer to our list with pride and only ask you to submit it to any authority on horticulture in the West. Our scions, buds, cuttings, etc., are all from our own test orchards, all selected so as to give you the best strain of each variety. Our seedlings, stocks, etc., are always of the best grade, no culls or low grades used. Our propagators are all skilled and experienced men, who work by the day and not by the piece. All this costs more than trees could be grown for, possibly ¼ cent per tree more, but what will it amount to the planters of the tree after it attains a bearing age, bears a third more or lives five years longer? In an orchard of 40 acres or more the difference may easily amount to hundreds of dollars in one year.

Our constant aim is to merit the continued patronage of the planter and the thousands that depend on us for all of their wants is evidence of the satisfaction we have given. We have increased our plant extensively in all departments and for the coming season we have doubled the usual amount of stock and next year we will have more.

APPLE TREES

We will offer a block of 200,000 two-year-old trees that are model trees for the Commercial Orchard. Headed just right, well balanced, good roots and having that "tree quality that has made Lee's Summit famous." In varieties we are well supplied with Gano, Ben Davis, York Imperial, Ingram, Jonathan (our choice for a commercial orchard), and a proportionate supply of M. B. Twig, Winesap, Missouri Pippin, Lansingburg, Romanite, Wealthy and the summer and other varieties for the family orchard.

PEACH TREES

An exceptionally fine block of trees one year from bud. The growth of this block was a marvel and our supply is largely of the heavy grade. Our list of varieties covers the entire peach season and enables us to give you either free-stone or cling, cream colored or yellow. The list is plenty large and especially adapted to the soil and climate of the middle west. Champion is the best all around peach we have ever tried and we give our next choice in the order named: Capt. Ede, Belle of Ga., Elberta, Stump, O. M. Free, Triumph, Greensboro and other free-stones, besides a good list of clings.

PEAR TREES

Keiffer in quantities. Keiffer is a money-maker. Also Duchess de A, Garber and a selection of other varieties for family use.

CHERRY TREES

A new departure in Cherry trees that has given satisfaction. Fully explained in the special cherry circular. Yours for the asking. Our supply of cherry trees for the spring trade is very large and we will make special inducements on large orders.

PLUM TREES

Our supply is good, grades well up to our usual standard. Varieties include the best American, Japan and European types.

STRAWBERRIES
RASPBERRIES
BLACKBERRIES
GRAPES
GOOSEBERRIES
CURRANTS, ETC.

A good stock of all of these, a good list of varieties, all selected for the soil and climate of the middle west.

IN SHADE TREES

We claim to have something a little better than any other western growers. We make a specialty of Soft Maple and Carolina Poplar, grow them as they should be grown and sell them at prices that will surprise you after you know the attention we have given them. We have all of the grades from two-inch caliper down, all large enough. Ornamental trees, ornamental shrubs, hardy bulbs, Rambler roses, vines. evergreens—in fact, a **Complete line of General Nursery Stock, all Hardy and Grown Out of Doors! Varieties Especially Adapted to the Soil and Climate of the Middle West.**

PRICES

That represent actual value, i. e., the cost of growing with a legitimate profit added. We will meet all fair competition; duplicate the price of any other reliable grower in the west for the same grades.

WHAT'S IN A NAME?

Gano is the leading commercial apple in Missouri. Our senior member introduced it to the public in 1886. Ben Davis has its place. It has made money for the apple grower and will continue to make money. **Nixoulte** is a coming yellow winter apple. We will sell a few trees along with other varieties at the same price as other varieties. We have another variety that promises to rival the Jonathan, will spare a few of them, same as Nixonite. Notice that we do not ask fancy prices for new varieties. We have just one exception to this, one apple that we are paying a royalty on, it is something extra fine, a quality that is immense, tree a good grower, etc. It is worth a dollar, but we will not charge you half that much. Special circular tells the story. Ask for it.

GOOD THINGS

We have **Two Varieties of Apricots** that originated on our own grounds. They have fruited seven years in the past ten, as hardy as any peach, beautiful growers, desirable as ornamental trees, one early and the other late. Both are worthy of colored circulars and we could have testimonials that would fill a page, all of which we would add to the cost of the tree. We offer it to you at the same price as common apricots and recommend it as being superior to anything we have ever seen. Same thing in **Plums.** We have two varieties of plums that originated in Lee's Summit, both seedlings of the Gage type, which we offer as Green Gage and Purple Gage, at the same price as other plums. In Currants too, we have the Crandall, not a new sort, but rather a desirable novelty. The plants are immense growers, very prolific and the fruit is black; it makes a splendid currant jelly. And in Rambler Roses we have a good stock of Dorothy Perkins, a comparatively new variety that rivals the Crimson Rambler.

Our office, headquarters, packing-grounds and main nursery is right in the city of Lee's Summit, with all of the growing trees convenient. Only an hour's ride from Kansas City. Come and see our plant; let's talk the matter over and we will show you the stock, answer your questions and show you bearing orchards that back up our claims.

As soon as the weather will permit we will have a complete assortment of stock on our packing-grounds and can ship on short notice, or you can come and see the stock before you buy. Visit us. Write to us. **We want Reliable Local Agents in Missouri, Illinois and Kansas.**

M. Butterfield & Son, Lee's Summit, Mo.

Great Crops of Strawberries

AND HOW TO GROW THEM

They Grow Big Red Berries

Physically Developed Plants

The Book of All Strawberry Books

IT is a treatise on Plant Physiology and explains how to develop the fruit organs in a plant. Improving plants through physical changes in buds is now recognized as correct by all advanced horticulturists. If you want to be the strawberry mogul in your community, send for this book.

FREE

R. M. KELLOGG

Three Rivers, Michigan

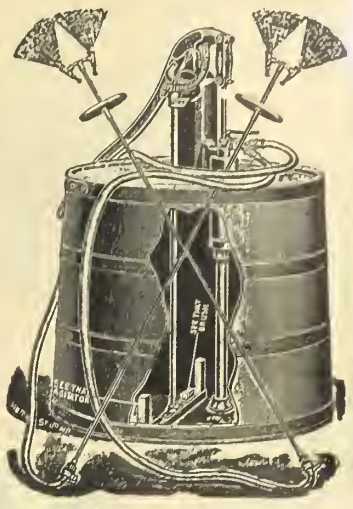
SPRAY PUMPS

All Sizes for All Sorts of Orchards, Vineyards, Etc.

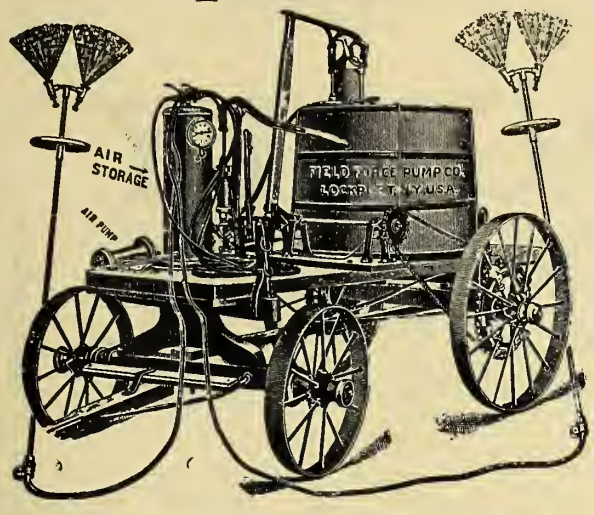
Every orchardist needs not only to spray his fruit, but in order to spray his trees most effectively he needs the very best pump made. The

"Empire King Pumps"

Mounted on 50-Gallon Oak Barrel with One Lead Complete.



Mounted on 100-Gallon Cypress Tank with Two Leads Complete.



The Greatest Power Sprayer Now In Use, with Two Leads Complete.

Are the Best

for the following reasons:

First. They have the greatest power. Great power is necessary to produce the fine mist so necessary for good spraying. *Second.* They are well made and will last longest. *Third.* They are so constructed that the agitation of the spray mixture is most perfect. This is an important point, for thorough agitation is absolutely necessary, because of the fact that the chemicals will settle to the bottom of the tank unless kept continually stirred. *Fourth.* They are easy to operate. The pump which is easy to operate, and yet which will not agitate the mixture is worthless; the Empire King line are easily operated, while thoroughly mixing the spraying chemicals.

The Orchard Monarch

The Orchard Monarch is the pump for commercial orchardists. When part of an orchard needs spraying, all the trees need spraying, and the work must be done in a hurry and yet must be done properly. No time to fool with small outfits. Get an Orchard Monarch and do the work right. The Orchard Monarch is one of the most powerful sprayers in use. It consists of a 150-gallon tank, mounted on a truck with low wheels and wide tires. The power is furnished by a sprocket wheel on the axle of the wagon, and a large air chamber will store enough air to spray a large tree even after the wagon stops. In case of an emergency a hand pump can be used, but this will not be necessary except in case of an accident. Two leads of hose are used, allowing two rows of trees to be sprayed at once. This outfit is a time and money saver, for one can get over a large orchard in a short time, and yet cover every tree with the finest mist.

Pumps and Appliances of All Kinds

For all kinds of work: Large pumps for large orchards. Small pumps for small orchards and vineyards.

Send for illustrated catalogue describing the Empire King line of pumps. Also quotes prices of chemicals for spraying, etc. Tell us the size and age of your orchard, and we will recommend style of pump best suited to your needs. Write to either address. Send all orders and inquiries from Missouri, Kansas, Iowa and Nebraska to St. Joseph address, and save time and freight charges. Get your order in early, before the spring rush. Last spring there was delay on part of railroads, and many orchards could not be sprayed when they most needed it. Send orders early this year, before pumps are needed.

FIELD FORCE PUMP CO., Manufacturers, Elmira, N. Y.

Missouri Valley Seed Company

General Western Distributors, ST. JOSEPH, MO.

Epitomist Experiment Station

A New Organization for the Benefit and Promotion of Farm Industry

WE WANT YOU TO CO-OPERATE— YOU NEED OUR HELP.

The intelligent farmer, the man who makes a business of farming, is constantly looking for better methods—methods which will yield him greater profit with less labor and waste. He wants increased yields of crops, improved quality of live stock, a higher quality of fruit, grain and all farm products. No one today sneers at science in agriculture. He only insists that science shall be practical. This is the purpose of the Epitomist Experiment Station: to reduce agricultural science to practical, work-a-day basis, to convert it from a theory to an actual economical fact.

The benefits of the new organization are new methods, new ideas, new blood, new seeds, new interests, co-operation, big profits, instruction in scientific farming, perfectly equipped bureau of information, a life subscription to the Agricultural Epitomist, the only farm journal edited and printed on the farm.

SEND FOR THIRTY-TWO PAGE BOOK

beautifully illustrated and describing in detail this modern organization conducted in the farmers' interests, of special value to nursery and fruit growing interests. Every intelligent and progressive farmer will be interested and profited by it. Farming and kindred interests throughout the land are invited to send for it and make investigation. Copy mailed free.

ADDRESS

EPITOMIST EXPERIMENT STATION

Correspondence Dept. 51 *SPENCER, INDIANA*

Do Not Carry All Your Eggs in One Basket

You cannot afford to risk all your capital and labor in one crop. If you grow fruit, you will likely have other crops also. But why not adopt a better plan—why not have an interest in fruit crops in different locations? Then, if one fails, the other will be apt to strike.

This is the opportunity which the Southern Orchard Planting Association offers. Our plan is to sell stock in a wholesale peach orchard, in one of the best peach sections in the world. The trees will be planted and cared for, the crop harvested and sold in carlot shipments, and the profits apportioned.

Everything will be done on a wholesale scale, and by the most experienced orchardists. Our plan has been tried with other crops in other sections, and has proved an unqualified success. Bonded trustee guards your interest and looks after the fulfillment of every contract.

Remember, our association has no land for sale, nor can we locate homeseekers. Our company is simply an orchard enterprise, in which investors are to be interested, just as they would invest in any other business enterprise.

What Inbestment is Better than Well Managed Orchards?

Can you not see the wisdom, therefore, of having an interest in a fruit crop from this favored section? Look at the most successful growers, such as J. H. Hale, Roland Morrill, etc., with orchards in different parts of the country. Are they not wise? Our proposition offers this opportunity for everyone who has even as much as $5 to $10 a month to invest.

Our orchard planting is in a part of Arkansas where peaches seldom fail. Printed matter, with illustrations of young orchards, etc., together with plan of the enterprise, sent free upon application. Investigate this proposition by sending for this literature.

Southern Orchard Planting Association

Waterworks Building KANSAS CITY, MO.

TRUTH IS MIGHTY AND WILL PREVAIL

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The Western Fruit-Grower
An Illustrated Monthly Magazine For Progressive American Farmers
Volume Fifteen ST. JOSEPH, MISSOURI, FEBRUARY, 1904 Number Two

Orcharding in Missouri

By Dr. J. C. Whitten

(Continued from January Issue.)

Selecting Trees.

The age of trees to be selected for planting depends upon a great variety of conditions. A good many prefer large one-year old trees. These may be shaped to suit the grower. He can determine the height at which they are to be headed and may also form them so as to secure a straight, central trunk, or leader, or may cut off the stem at the point of heading and secure a number of spreading main limbs without a leader. Large one-year olds will hardly average a year behind two-year olds in coming into bearing, providing the former are given good care and cultivation so they are pushed as rapidly as possible from the time they are planted. They certainly are more amenable to special shaping and to general treatment providing the grower has some particular point to maintain, that is outside the ordinary.

Three-fourths of the commercial orchardists in this state prefer two-year-old apple trees for setting. They are already shaped in the nursery, having their tops well branched. They are old enough so they have good root systems and well formed tops, but are not so old as to suffer much from being dug, shipped and handled. They demand less care in planting and in cultivation the first year than do one-year-olds.

A few growers prefer three-year-old trees. These are mostly men who are planting comparatively small areas and who can take special care in moving and setting their trees. If moved with good root systems, so the limbs will not need to be cut back too short, they may bear on an average somewhat earlier than two-year-olds. Unless they can be given special care they are more liable to be broken than are the smaller trees. A broken limb or root on a three-year-old tree is a more serious defect to overcome than it is on a two-year-old tree.

Recently a New England planter has recommended beginning with two-year-old trees, transplanting them several times, so as to give more room from time to time, and finally putting them in the orchard when they are six or eight years old. This is sometimes done in European countries where land and trees are high and where labor is cheap. It keeps the trees for a longer time on a small area, where they may be more cheaply cultivated and fertilized than they could be in the permanent orchard. In a country where trees do not come into bearing until they are twelve or fourteen years old this practice may be sometimes profitable. It causes such trees to come into bearing earlier. In the west where our trees come into bearing early, it is not to be recommended for the commercial orchardist.

In Missouri, well-grown two-year-old trees are usually best. They need not necessarily be the largest trees. They should be headed low in the nursery and should have a straight, central trunk, or leader, without forks. Some varieties like Minkler are naturally straggling and unsymmetrical. Allowance should be made for this fact in buying. Some varieties are naturally symmetrical, some are natural straggling; some are rapid growers and some are slow growers. One should seek to get trees that are typical of their kind, whether they are large or small, symmetrical or unsymmetrical.

It is best not to plant diseased trees. This does not mean that if a tree shows that a wooly aphis has been on it the whole lot should be discarded, nor does it mean that if a crown gall is found, the entire shipment should be condemned. Such things occur in all nurseries and to condemn all trees in such cases would mean not to plant trees at all. If the trees are generally vigorous and healthy they are all right, but if any considerable number of them appear to be weak, damaged and diseased, none but the better ones should be planted.

Varieties.

Is it superfluous to again mention varieties? So long as people keep on asking what sorts to plant it seems pertinent to discuss the matter. For the commercial orchard in Missouri this is an important matter. No one can tell a planter what varieties to use. Some men make more money out of one sort and some find others more profitable. Some advice may be given, however, that will enable the prospective planter to arrive at proper conclusions.

The varieties depend upon the location, the purpose for which they are to be grown, the care the grower is going to bestow and upon other factors. Generally speaking the Ben Davis and Gano come in for a large share of patronage. These are cosmopolitan varieties that thrive well all over the state. They succeed better under just ordinary care than do most others. They are about the best producers, one year with another, in most soils of this state and they are among the best shippers and keepers under ordinary conditions. For the average grower they are still worthy of being planted quite largely. They stand abuse in treatment, on the part of the cultivator, as well as they do in language on the part of the consuming public. The man who wants to produce apples in large quantity and sell in large quantity, most every year, right in the orchard, will do well to plant a good portion of his orchard to these sorts. This is particularly true if he is farming by proxy and leaving the care and marketing of his fruit to someone else.

The Jonathan, York and Grimes are apples of the finest quality and they produce fairly well, generally over the state. Almost any orchardist should plant one or more of these varieties. They are especially adapted to the use of the grower who expects to catch a high priced market for his fruit. The man who will give the best of care to the management of his orchard, put the finest grades in cold storage and sell in late winter or early spring, when the price is up, cannot deal in better varieties than these. They bring the highest price on the market and under good care and handling will yield well enough to please any grower. If grown and handled without any care they will not prove so profitable as Ben Davis or Gano, except in special soils and locations to which they are especially adapted.

If one wishes to grow especially long keepers he may plant, in addition to Ben Davis and Gano, such other sorts as Ingram, Clayton and Winesap. Each of these is commercially profitable in most parts of the state and they are well adapted to certain special soils and locations.

The slope and altitude should be considered in determining whether or not to plant any of the varieties that are not cosmopolitan in their adaptability. For example Winesap and Mammoth Black Twig usually thrive best on northern slopes. The Rome Beauty and York do well on warm southern slopes. The Ingram and Rome Beauty are among the best sorts to plant on moderately low land, since they blossom late and their flowers are seldom injured by late frosts.

There are many new varieties that are coming into prominence in this state. Some of these promise to be especially adapted to our local conditions. This evolution of new and improved sorts is slowly but constantly changing our list of commercial varieties. It is of the highest importance that one study the varieties that are already thriving in his neighborhood, under conditions which are similar to his own. More information concerning what sorts to plant may be gained in this way than from any printed list.

Planting.

The time of planting depends upon the soil, location and the weather conditions. Fall planting has the advantages of getting the work out of the way before the busy season, and of giving the trees time to make some root growth before their buds start in the spring. Autumn planted trees usually make considerable root growth and become well established in the soil before the ground freezes hard. This enables them to make better growth the following season. On the other hand fall planted trees are more liable to dry out and to suffer injury if the soil is dry and the winter severe than are trees that remain undisturbed in the nursery. If the soil heaves badly from frost, soon after the trees are planted they are liable to be loosened in the soil and to be injured during winter.

If the soil is not subject to heaving by the frost and if the autumn is moist, fall setting is to be recommended. It is not sufficient that the immediate plot to be planted have a moist, workable soil, but that the whole section of country be moist. Some planters suppose that if they water trees that are planted in a dry autumn that is sufficient. This is a mistake. If the section of country is suffering from drought the atmosphere will be dry and the trees will soon dry out, even if they are watered at the roots. Fall planting is not to be recommended unless weather conditions for the whole section of country are favorable. Since we are liable to have dry autumn weather in the central west, spring planting is often safer. This is especially true in the northwest, where the winters are somewhat severe.

The method of planting the individual tree is a matter of much importance. This does not mean that one should waste a great amount of time at such pottering as spreading out all roots in their natural position, firming the earth around each rootlet and doing all in his power to wear the life out of all parts of the tree before he gets it into the ground. On the contrary, the aim should be to get the tree into the ground as quickly, and with as little handling as is compatible with good work. An expeditious, business-like method of setting as many trees in a day as can be done well will always result in a larger per cent of the trees living than when an excessively painstaking process of wasting time with each tree is practiced.

To begin with, every tree should be gotten into the earth as soon as possible after it is uncovered. The roots should not be exposed to the drying influence of the air a second longer than is necessary. It is true that a tree may endure a great deal of exposure of its roots to the air and still grow, under certain conditions. It is also true that it begins to dry out as soon as its roots are exposed unless the atmosphere is saturated with water. Since we do not usually plant trees during a rainstorm, it is safe to say that exposure of the roots always injures the trees.

In some experiments along this line we found that trees that were taken out of the ground and planted as quickly as possible, near by, grew about as well as similar trees that were left to grow without transplanting. Those that had their roots exposed to the air for fifteen minutes made a less satisfactory growth. Those which were exposed for longer periods made correspondingly poorer growth, until trees that were exposed for one and one-half hours failed to grow at all. The weather, during the above planting, was a fairly cool spring day, with moderately bright sunlight but no drying wind. It should be borne in mind that where trees are dug from the nursery, packed, shipped, heeled in the ground and again taken out to set in the orchard, they are usually handled more than is good for them, even if as little exposure as possible is given at each time of handling. In the judgment of the writer more trees make unsatisfactory growth on account of drying out in handling than from any other single cause except insufficient cultivation

We often hear it recommended to dig very large, deep holes, fill them with miscellaneous materials and then plant the trees. If a tree is to be planted on the lawn, where grass grows, it is best to make the hole large enough to kill the grass roots for a considerable space about the tree. In planting the commercial orchard, however, where the entire area is to be tilled, it is only necessary to make the holes large enough to accommodate the spread of the roots, in setting, providing the land has been properly prepared. It is cheaper to prepare the land by means of plow and harrow than it is to do it by digging deep holes with a spade.

When the tree is set it should be held in the hole so its largest branches will extend toward the south, so as to shade the trunk from the hot sun. It should be set as deep as it stood in the nursery, or in a very light soil it may be set one inch deeper. The dry soil on top should be brushed away and only moist, fine soil placed in contact with the roots. This soil should be shaken from the shovel, instead of dropping it into the hole in masses. The tree should be shaken up and down as the first soil goes in, so the roots will each be surrounded with soil instead of being mashed down into one layer. If the soil is put in in clods the roots will be pressed together and no soil will get between them. The soil around the roots of the tree should be tramped firmly from the bottom of the hole to the top. The last inch of soil on top should be left loose and fine so it will not bake about the tree. Each tree should stand straight after it is planted and the rows should be straight. It is sometimes recommended to set trees so they will lean toward the afternoon sun—so the branches will shade the trunk. This results in getting upright heads on inclined trunks, which is undesirable.

(To be Continued.)

Where Is the Peach Crop?

From various sections come reports of injury to the peach crop. Throughout the East the crop is very severely injured. In New England the fruit buds have not only been killed, but the trees have been injured also. In Missouri, Illinois, Kansas and states in that latitude, there has unquestionably been great damage,in the northern portions of the states, at least. Contrary to the belief of many, however, this injury was not caused entirely by the cold weather the latter part of January, for in North Missouri a good percentage of peach buds were killed on the night of January 2, when the temperature made a sudden drop. Next month there will be more complete reports as to the injury. Other fruits in the Middle West are in good condition, and prospects continue good for a crop, according to reports received in private correspondence.

I have had many trees of this royal apple, but the variety has been short-lived. I now have them in fine condition, top-grafted. The trees to be worked over should be three or four years old, planted in the orchard. I grafted mine on a Hick's London Sweet, a fine winter sweet apple which hangs tight to the limbs until late fall or early winter. I now find that my Grimes do not drop nearly so badly as when I used to grow them on Grimes stock. By top-grafting the Grimes some of its bad faults can be overcome.

J. W. GRAY.

Atwood, Ill.

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If your address tag shows the date of "March, 1904," or any date previous to that, it signifies that your subscription has expired and you should renew at once.

This month we shall send notices to all names on our list that were not renewed by February 15th. The envelope in which the circular will be mailed will show the date of expiration as it appears on our books.

If the date is not correct, please notify us at once, so that we may make the correction. If you are not prepared to remit, we shall be glad to send the paper until you are ready. If you do not want the paper continued, notify us by postal.

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Practical Experience With Lime, Salt and Sulphur Wash

The article in the January number, by Prof. Keffer, concerning the treatment of trees infested with San Jose scale with the lime, salt and sulphur mixture, attracted much attention. We present this month the experience of a practical orchardist, in a commercial orchard. This report is from the stenographer's notes of the remarks by Mr. A. N. Brown of Wyoming, Del., before the late meeting of the Maryland Horticultural Society. Mr. Brown said that he had the second worst infected orchard on the peninsula; the worst one was just across the road from his trees. Mr. Brown had experimented in the use of oils somewhat, but was afraid of them. The neighbor used crude petroleum and killed the entire tops of trees, while trees sprayed with lime, salt and sulphur were unhurt. Mr. Brown had had some difficulty with the mixture as made according to the published formula, because there was more or less sediment left in the barrel. Accordingly he experimented a little, and now makes the mixture as follows:

"First, I take 20 lbs. sulphur, (flour of sulphur) and 2 gallons of boiling water and make a sulphur paste by adding a little of the water at a time to the sulphur, stirring it well during the process, by the time you have the water all stirred into the mixture, the sulphur is not all dissolved because this cannot be done, but I have broken up the globules of sulphur into most minute parts, so that it can be taken up and perfectly distributed in the lime. This fact is indicated by the brusting of these globules of sulphur showing that I am making them smaller.

"Second, I take a common sugar barrel, put two wire hoops around it, put into it 40 lbs. of the best stone lime obtainable, pour on it 12 gallons of boiling water, immediately add the sulphur previously prepared, cover the barrel with a burlap sack and let boil for 20 minutes. It is essential that you work rapidly as any interruption of the slacking process may destroy the effectiveness of the wash. I do not stir during the boiling process, only with an ordinary garden hoe occasionally raise the lime from the bottom so that it will not settle and burn before it is thoroughly slacked. After boiling ceases I add 46 gallons of water (warm preferred) and finally the 15 pounds of coarse salt, stir well, strain into the spray tank through a strainer having thirty meshes to the inch, and apply while fresh and warm. This wash is more effectual if applied when made than if left stand. This wash is adhesive. I have no trouble in that direction, as the wash applied last February is now plainly visible. It is stated the salt adds no value to the wash, but I shall be very loath to leave it out. I may add some blue stone hereafter, about 1 pound to every 20 gallons, as I believe it will add to the adhesiveness of the wash and will strengthen its value as a fungicide. I do not believe that caustic soda added is any improvement, at least experiments along this line have not shown any beneficial results. As I have already stated, I have killed the scale and other insects harboring upon the surface of the trees as well as the various forms of fungi."

A member: "Do you use hot water only?"

Mr. Brown: "I use 2 gallons boiling water to make my sulphur paste, 12 gallons to slack my lime, then fill to the required 60 gallons by adding 46 gallons of cold water, although if slightly warmed it would be preferable. My experience is that best results follow when this wash is made just when you wish to use it and used as soon as made. While at Geneva, N. Y., last week, Prof. Parrott, of the Geneva Station, stated that the addition of caustic soda to the lime, salt and sulphur wash was no direct benefit, but that the soda of itself 10 pounds to 40 gallons of water would kill the scale.

A member: "Do you have to strain it or do you make it right in the barrel?"

Mr. Brown: "I make it in barrels and strain into the spray tank from the barrel."

A member "You want an agitator to work all the time do you not?"

Mr. Brown: "I use a 'Friend' pump which is not supplied with an agitator, the boy driving the team in the orchard does all the stirring required. This pump costs more than others, but has more power and is more easily operated. A boy does the pumping, with two discharge hoses and 4 or 6 nozzles. In my method of mixing the material does not separate as readily as when made by the California method. In conversing with J. H. Hale some time since he told me that he had sprayed 60,000 peach trees in his Georgia orchards with oil with success; he ran six pumps, but kept an expert with the pumps and tested each one of them every 15 minutes to maintain the solution of proper proortions. His neighbors not exercising these precautions, lost their trees by the thousands. In Mr. Hale's Connecticut orchards he used the lime, salt and sulphur wash and the oil, and was so pleased with the results of the lime, salt and sulphur wash that in the future he will use nothing else. He purchased 3 carloads of sulphur last week for his spraying purposes this spring.

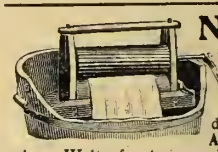
"I have a neighbor who last spring had the finest six year old peach orchard I ever looked at, there was some scale in it. He procured a pump, applied oil 20 per cent and he has badly injured the orchard. He tells me that there are places in that orchard where he has lost two dozen trees in a single block. The danger of using the oil has left a sad impress with him. No one doubts Mr. Hale's success as a fruit-grower. He says the greatest blessing he has ever received as a horticulturist was the San Jose Scale, because it taught him the use of the lime, salt and sulphur wash, which was a great fungicide as well as a perfect insecticide. My Elberta peaches the past season from the sprayed trees were one week later in ripening than any in the Wyoming peach section, because of the vigorous growth and heavy foliage caused by the beneficial effect of this wash."

A member: "What is the cost of your spraying outfit?"

Mr. Brown: "My outfit cost about $38, myself and four sons do the mixing of the wash and apply it. We have but one aim, and that is thoroughness. We cover about 1,000 seven year old peach trees daily. There was an exhibit of almost every style of spraying outfit manufactured in the United States at the late Fruit-Growers' Meeting at Geneva, N. Y., and as we are looking for power sprayers, I examined them with considerable care. I find four methods by which to apply power to our sprayers. The gasoline or steam engine, of which the 'Fairbanks' seems the most complete. The traction method of producing air pressure, 'The Compressed Air Sprayers,' and the 'Niagara Gas Sprayer,' the two latter doing away with the use of pumps; in the Niagara Gas Sprayer the carbonite of soda is the source of power. This is the cheapest and from experiments has proven eminently successful. It is worthy of trial before investing in the more costly devices."

A member: "How many trees will that one barrel of 60 gallons cover?"

Mr. Brown: "That depends entirely upon the size of the tree. We used in one orchard of 5 year old peach trees of large growth, 1¾ gallons per tree. Our material cost us less than two cents per gallon. The caustic soda



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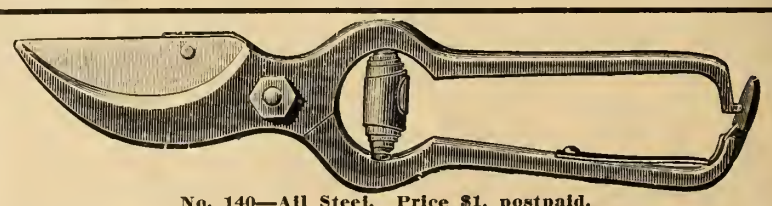

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if used in connection with the lime, salt and sulphur wash will increase the cost of the mixture about 1 cent per gallon. I notice most of our scientific men in conducting their experiments are using the lime and sulphur in equal quantities. This, I am satisfied, is a great mistake, and doubtless accounts for the varying successes with this material. My experience is that where used in equal quantities the wash is thin, and will not "set" when applied to the tree as where it is made according to the original formula. I can best illustrate this by calling your attention to the effect produced in the use of a poorly mixed paint in comparison with that which is mixed perfectly. The former will never stay where it is put when applied to the surface where wanted, while the latter always does and makes a lasting and effective covering. By using 40 pounds of lime, 20 pounds of sulphur to 60 gallons of water, I get a composition when properly prepared that stays just where I put it, does just what I want it to do and just what I put it on for. When this wash is properly made and strained you will have no trouble whatever with the nozzle clogging. I use a Seneca nozzle, which I prefer for this work to the Vermorel. The Gould people have a new nozzle which they claim surpasses anything on the market."

A member: "What do you strain this wash through?"

Mr. Brown: "I advise the use of a galvanized iron strainer, running about 30 to the inch in mesh. The lime, salt and sulphur will destroy a copper strainer in a very little while."

A member: "Do you get heat enough in your method of cooking?"

Mr. Brown: "Yes. You cannot begin to generate the intensity of heat by artificial means that you get by the slacking of good lime with boiling water. The difference is about 90 degrees greater with the slacking lime."

A member: "Will lime, sulphur and salt prevent the leaf curl of the plant?"

Mr. Brown: "I have never been troubled with leaf curl, but in New York and western Maryland peach districts I am informed by persons who have used it, that it will prevent leaf curl. I wish to add one more word and that is, that San Jose scale has no terrors for me, and orchardists need fear it no more than other insects which prey upon our trees. We need only use the lime, sulphur and salt wash once a year, making the mixture perfectly and applying it thoroughly. This is my positive experience."

Vermont Horticulturalists Meet at the University of Vermont.

The Vermont State Horticultural Society held its annual winter meeting conjointly with the State Board of Agriculture and the newly organized Forestry Association of Vermont, January 19-20.

The Tuesday sessions were devoted to the forestry and agricultural interests, while those on Wednesday were given over to horticultural topics.

A small but very attractive fruit display was made by Messrs. Kinney of South Hero, Macomber and Cordon of Grand Isle, and Putnam of Cambridge. The last three named gentlemen made plate exhibits of a number of varieties of apples. The exhibit by Mr. T. L. Kinney was unique, consisting of several boxes of nicely selected and packed fruit of Northern Spy, Spitzenburgh, Baldwin and Greening, besides a barrel each of Northern Spy and Greenings. These apples were all No. 1 fancy and proved a very attractive feature of the meeting. The box package certainly enables the grower or seller to display his fruit to the best advantage.

The horticultural session was opened Wednesday afternoon with the annual address of the president, Mr. G. H. Terrill of Morrisville, Vt., who said in part that success in fruit-growing was dependent in a large measure upon the love one had for the work and the care bestowed upon the growing trees. The orchardist must be well informed in order to know when and how to do things. Every fruit-grower must study his own conditions and evolve a system of management suited to his needs. He should study the markets, find out what they want and then endeavor to meet its requirements. Too many fruit-growers through lack of information are at the mercy of the buyer and do not reap the reward to which they are entitled. There are great possibilities in fruit culture in Vermont. New orchards should be set out and old ones made more productive by better care. Vermont apples will in the near future be shipped to foreign countries in great quantities, and we should be preparing for it.

The speaker laid considerable emphasis upon the fact that the influence of the society could be greatly increased by an appropriation from the state funds, to provide for the publication of its proceedings and securing good speakers.

The report of the secretary-treasurer who was unable to be present was then read by Professor Stuart. Committees on resolutions and on exhibits were then appointed.

The committee appointed to draft a constitution and by-laws for the society presented a constitution which was adopted as read.

The Boston meeting of the American Pomological Society was briefly reported by Professor Stuart.

"Orchard Management" was discussed by Professor John Craig of Cornell University, who dealt with it from the standpoint of the soil, the tree and the fruit. From the standpoint of the soil good drainage is the first desiderata, tillage and fertilization are also important. The amount of tillage and fertilization requisite is a problem that each one must work out to suit his own particular conditions. Red clover was strongly recommended for a cover crop to protect and also to fertilize the soil.

On the subject of pruning the speaker emphasized the point that there was a difference between pruning and trimming which is so often practiced. Prune when tree is dormant, preferably in the early spring. Remove only such branches as are necessary to admit light to the tree top, also such as interlock with each other. Pruning properly done serves to induce a more vigorous growth of tree.

In response to a question by the president regarding the relative value of dust and liquid spraying of trees, Professor Craig said that for the same number of applications dry Bordeaux was about half as effective as liquid. If, however, twice the number of dry Bordeaux applications were made it was equally as effective. Upon rough land, especially for orchards on hillsides, the dust spray can be applied with less expense and effort.

Professor Munson of Orono, Maine, spoke briefly on "Worn-out Farms." The speaker thought there were many farms in New England now given over to the raising of crops for which the soil was in no way adapted. Some practical suggestions were made as to the best method of determining the requirements of worn-out lands.

The first speaker of the evening session was the Rev. C. W. Perry of Chester Depot, whose subject was "We and Our Partners." The speaker emphasized the fact that we were prone to think that we grew the plant, and raised the fruit and so on, without ever taking into consideration who our partners were. The vital energy in the seed, its mechanism and chemistry were factors often lost sight of, while the sunshine, the wind and the bee were quite as frequently forgotten.

"The Improvement of Cultivated Plants" was briefly discussed by Professor William Stuart of the University of Vermont. The various methods by which plants are improved were considered under two heads, viz: by Hybridization and by Natural Variation. The improvement of our native fruits was thought to be the greatest pomological acquisition of the nineteenth century. A brief account was given of some experiments with seedling carnations, relative to potency of pollen parent in transmitting color to the flower. A few slides were used to illustrate some phases of fruit and flower development.

"Varieties of Apples" was discussed by Professor Craig, who said that the grower of apples should find out what varieties he can grow successfully, and also what the market demands. Professor Craig paid a high tribute to the fruit on exhibit, and said that wherever Northern Spys, Baldwins, Spitzenburghs and R. I. Greenings could be grown to such perfection as those exhibited there was no need of considering other varieties. The speaker placed considerable emphasis on the advisability of adopting a suitable package. Apples wrapped in paper and packed in boxes commanded a much better price than fruit packed in barrels.

Professor Munson traced the development of the scientific spirit in education from the early ages to the present time, which proved very interesting.

The committee on resolutions reported as follows: Resolved, that the Vermont State Horticultural Society desires to express its cordial appreciation of the efforts made by the residents of Burlington, and especially by the officers of the University to render the meeting both pleasant and profitable. The Society extends its thanks to the State Board of Agriculture for its assistance in securing speakers. They heartily welcome the new Association of Forestry to the fellowship with the older societies of the state in their mutual efforts to secure the prosperity of the state and the happiness of the people.

The society desires to place on record the emphatic endorsement of the movement to secure from the legislature of the state a sufficient appropriation to erect on University Hill an Agricultural Building, which shall be adequate to the needs of the department, an ornament to the city and worthy of the great industry whose interests are to be promoted.

The thanks of the society are further extended to the able speakers by whose efforts the members have been entertained and instructed during the session.

With due modesty the society calls the attention of the legislature to the obvious fact that it represents one of the most important and rapidly growing industries of the state, and that a reasonable appropriation to the society could be wisely granted and expended to the great benefit of the horticultural interests of the state.

Finally, but by no means least, we wish to extend our appreciation of the Glee and Banjo Clubs of the University and to Mr. Heath for their very pleasant entertainment.

Following the adoption of these resolutions the election of officers took place, which resulted as follows:

President, C. H. Terrill, Morrisville, Vermont; secretary and treasurer, William Stuart, Burlington, Vermont; auditor, Luther Putnam, Cambridge, Vermont.

After the election of officers the meeting was adjourned.

WILLIAM STUART, Sec'y.
Burlington, Vermont.

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Volume 15 ST. JOSEPH, MO., FEBRUARY 15, 1904 Number 2

A Fruit-Grower subscriber called our attention the other day to one thing which is often overlooked in the selection of a location for an orchard, and that is the railroad facilities afforded. "The general attitude of the different roads toward the fruit industry varies greatly," this gentleman said, "as one will find out when he has dealings with the different lines. This is one thing which has tended to retard the development of the fruit industry north of the Missouri River, in Missouri. In the southern part of the state, the Missouri Pacific, the Frisco and the M., K. & T. roads traverse most of the orchard section, and all are very friendly to the fruit-growers. North of the river the Wabash is friendly, but does not cover as much of the territory as the growers would like. Most of Missouri north of the Missouri River is dominated by the Burlington system, and it has persistently refused to encourage the growers in any way. In making shipments the growers are subjected to all sorts of inconveniences, as though their business were not wanted, and the road will never make a reduced rate for a horticultural meeting. The Burlington road is holding back the horticultural development of North Missouri, and there is a feeling among many of the growers that some organized effort on their part should be made to counteract this." The members of the Platte Purchase Fruit-Growers' Association have discussed the subject informally a number of times. It is strange that any railroad in Missouri, which has such wonderful horticultural possibilities, should be so indifferent toward this industry, which pays such a high freight rate and which has a tendency to reduce the size and increase the number of farms. But the Burlington Missouri lines do not seem to appreciate the fruit farmer or his business.

Want to pack apples in boxes next fall, do you? Did you ever stop to consider that it takes an expert to pack a box of apples? Well, it does. Think, for instance, what will happen if the apples are not graded as to size, so that a certain number of layers, or tiers, can be placed in a box of certain depth. It is no easy matter to do this work, and in the Western states, where boxes are used so extensively, it is said that expert packers are employed, who receive $2.50 per day. Packing fifty boxes a day makes the cost per box 5 cents. By the way, at the last meeting of the West Virginia Horticultural Society, premiums were awarded for the best packed barrel of apples. Why is this not a good plan for all the meetings? Why show fancy plates of fruit any more than well-packed boxes or barrels? It is not enough to grow good fruit: It is quite as important to get the fruit to marked in such condition that it will bring good prices.

Chief F. W. Taylor of the Department of Horticulture of the St. Louis World's Fair calls attention to several features of the horticultural exhibit which will interest our readers. One is a collective fruit exhibit which will be maintained by the Department of Horticulture, which will present in one space different varieties of fruits grown in widely different localities. This is done in order to afford an opportunity for those interested in studying varieties to compare specimens of the same variety from all sections of the country, and to note its variation as to size, color, shape, texture of flesh and flavor. Another feature will be the exhibit of horticultural machinery of all kinds which will be made in the Horticultural building. Heretofore the horticultural machinery exhibit has been insignificant, and has been made in connection with the agricultural machinery exhibit. The interest in horticulture has increased to such an extent, however, that horticultural implements, including different machines manufactured for orchard cultivation, different patterns of spray pumps, etc., will have space in the horticultural building. This will be appreciated by all who are interested in this department. If the different styles of fruit packages are also shown it will add still greater interest, we believe, and this could be done with little extra trouble. On the whole, it is safe to say that the horticultural features of the exposition will be one of the attractions of the fair. We hope it will be possible for every member of "The Fruit-Grower Family" to attend the exposition. Make your plans to go.

The Fruit-Grower had not intended to use much space in publishing the letters received from our readers, saying kind words of the January number. We may be pardoned, however, for quoting what two old friends said. When the matter of starting the publication of the Fruit-Grower was under consideration, the writer of this called on Mr. N. F. Murray, who was then in St. Joseph engaged in farmers' institute work. Mr. Murray said that if we were willing to work hard and wait a number of years for returns, the Fruit-Grower could be made a success. The other letter is from Mr. B. F. Smith, Lawrence, Kan., who used to publish a fruit paper — Smith's Fruit-Grower. This was the first fruit paper the writer ever saw, and helped to implant the desire to some time have a fruit paper which should represent the best there is in horticulture. This was almost twenty years ago. Now, see what these gentlemen, who, directly and indirectly, helped the Fruit-Grower at the start, and who have read every issue from the first, say of the January number:

"I think the January number the finest and best horticultural paper that ever came to my desk. This one number is worth three times a year's subscription. I am sure no one would be content to be without the paper, for the sum of 50 cents, if they could once see and read the valuable information this number contains. I am proud of the paper, and now have the evidence that I made no mistake when I urged you to go into the enterprise. The Fruit-Grower is a paper the whole West should be proud of . Your circulation should be doubled, and therefore I send two new subscribers with my renewal, and hope others will do likewise."—N. F. Murray, Oregon, Mo.

Here is what Mr. Smith says: "The January issue is at hand, and I am astonished at its magnitude. It is the finest fruit journal published in America, or I might say in the world, for no other country has such a grand army of fruit-growers. I have been a student of fruit and farm papers for over forty years, so that I know what I am talking about when I say the Fruit-Grower is the best and most practical fruit journal in the world. My earnest desire is that your paper shall live as long as time lasts and as long as fruits are grown."

The Fruit-Grower has often made the statement that in every community the best class of farmers will be found to be those who grow fruit. This does not mean that he grows fruit exclusively, for in most cases fruit culture will be but a part of the general farming operations. This refers, of course, to the sections where fruit can be grown profitably. A New York farmer referring to a farmers' institute in the fruit district, says there was represented there more wealth that was actually taken from the ground than in any like audience in the United States. Continuing, he said: "This may seem a strong statement, but will be more easily credited when I say there were doubtless over 100 men present whose apple crop alone this year had sold from $1,000 to $3,000, a score at least whose fruit had sold for from $3,000 to $10,000, and many of these I could mention by name if it were proper to do so. Fruit does not constitute all of their revenue. They raise large crops of wheat, beans, potatoes, hay and cabbage (although this year the more a man had of the latter the worse off he was), sheep and cows to a limited extent. This profitable fruit business has been brought about in a dozen years by intelligent effort controlling conditions; the thing man was placed on earth for, i. e., to have dominion."

A recent bulletin issued by the Ontario Department of Agriculture, quoting from reports from farmers as to the crops for the year 1903, is a most interesting document, in that it probably reflects conditions among farmers everywhere, to a certain extent. The reports from the farmers as to labor conditions are particularly interesting, and show that in Ontario, as elsewhere, the question of labor is getting to be a very serious affair. These reports show it is not so much a question of wages, for competent help is not to be had at any price. In view of the scarcity of labor, many farmers are seeding their farms down to grass, intending to raise more live stock and less grain, thereby hoping to be able to get along with less hired help. All the reports show that the best farmers are using more and better machinery, saving labor in this way. One suggestion, which is made by a great many of the correspondents, is that farmers provide good tenant houses and employ their help by the year, and thus they will be likely to secure a better class of farm laborers. Running all through the reports is the thought that steps must be taken to keep the boys and girls on the farm. They must be educated to think—as is certainly the case—that the greatest happiness and the highest development in every way is possible on the farm. One correspondent says: "Train the boys to work. Try to arouse an interest in farm work and in nature. Do not educate away from the farm. Make them feel that farm and country life is healthier and more pleasant than city life. Do not work too long hours, so as to let the boys think that farm life is a drudgery. Get the girls to do the housework, and attend to the calves and pigs. Educate by all means so that after doing the necessary work they may sit down to the piano. The two are not incompatible." This question is a most vital one, and is one which is deserving of the best thought of everyone who is interested in farm life. What is the best plan to secure and keep good help on the farm? We might add, for the comfort of farmers, that it is as hard to secure competent help in other lines. The Fruit-Grower has been unable to secure good printers and pressmen during the present winter.

Jacob Faith of Vernon County, Mo., writes: "What can or should be done with a lad who rides up in a hurry, asks for some blackberry wine, saying that his father sent him for it on account of sickness, and yet who used the wine for himself and his chums? I know Major Holsinger will say not to make blackberry wine, yet many temperate persons have found it a most excellent medicine. I am a temperate man, and we makes the wine for only medicinal purposes." We would say there is something wrong with the boy. Perhaps if Mr. Faith wishes to continue to make the blackberry wine to use in cases of sickness, it will be well for him to require a physician's prescription, or at least an order from the boy's parents before the wine is delivered. But as to what shall be done with the boy, who shall say? It is a problem to know what to do with lots of boys. His parents are the ones to look after him, however, and Mr. Faith should profit by his experience and deliver no more wine until he knows absolutely that it will be used in cases of sickness.

A recent publication showing the miles of new railway built during the past year calls attention to the fact that most of the new mileage is in the Southwestern states—Oklahoma, Texas, Indian Territory, Arkansas and Missouri. These roads are increasing the facilities for getting grain to gulf ports, and the exports of grain from these ports show a constant increase. Of the wheat exported last year from Boston, New York, Philadelphia, Baltimore, Norfolk, Newport News, New Orleans and Galveston, over 63 per cent passed through New Orleans and Galveston. This means much to the farmers of the Middle West. It means better facilities for getting their products to the seaboard for export, and it means also the building up of great cities in this part of the country, which will greatly increase the markets for fruits and other perishable produce. The increase in prices of land is in part accounted for, we believe, by the fact that the farmers of the Middle West are receiving some of the advantages to which they have long been entitled.

Here is a real joke on the Fruit-Grower and on the Kansas State Horticultural Society. It will be remembered that in our last issue we told about the resolutions which were passed by this society expressing its regret at the death of R. DeGarmo of Oswego, Kan. The Fruit-Grower took occasion to tell what a good friend Mr. DeGarmo has been to this paper, and how sorry we were to learn of his death. Well, we had a letter from Mr. DeGarmo the other day, and he says he isn't dead, or anywhere near dead; that he is in good health, and while he respects the Fruit-Frower and the Kansas Society, he doesn't feel called upon to die just because we said he was deceased. That's a pretty howdy-do. We have apologized to Mr. DeGarmo, saying that we would tell our readers that he isn't dead and that he isn't a good fellow, either. But, seriously, Mr. DeGarmo explains how the mistake occurred, for a number of the members of the Oswego Society had died, and when Mr. DeGarmo did not attend the last meeting the committee took it for granted that he, too, was dead. We are truly glad he is still with us, and trust he will live many years more. But he had better go to the meeting of the state society next time, or there is no telling what will happen to him.

How many of the readers of The Fruit-Grower carefully read the article on page 6 of the January issue, entitled "Cheapening the Value of Nursery Trees?" This subject is worthy of the consideration of every tree planter, for all are interested in getting good trees. The point which Mr. Kirkpatrick makes, that fruit-growers, in demanding trees at a low price, are apt to cheapen the quality of the trees, is a good one. Other nurserymen have time and again called attention to the fact that while growers are anxious to get full price for their products—as is perfectly proper—they are too often trying to get the price of trees reduced to the lowest notch, and will buy where the trees are cheap in price, no matter what the quality. If we want trees which are reliable, we must be willing to pay a fair price for the kind we want. Don't forget this fact when you go to order trees. What does the first cost of the trees amount to, in the life of an orchard? Planting even 100 trees per acre, a few cents difference in the cost of the trees will not amount to much, and yet it may mean the difference between getting good, well-grown trees and those which are faulty in some way. Don't expect to get XXX trees at X prices.

Next month every orchardist ought to get things in shape for spraying, and to help in this work the Fruit-Grower will have some special matter on the subject of spraying. A vigorous warfare will be waged against all orchard pests this year, and the up-to-date grower will try to obtain all the help possible. Don't fail to read the March issue of the Fruit-Grower, for there will be some articles of great value along this line.

The Oregon Board of Horticuture made a shipment of different varieties of apples to China as an experiment. The apples were wrapped in paper and packed in boxes. Losses from the different varieties were as follows: Ben Davis, 2 per cent; Spitzenburg, 10 per cent; Shannon Pippin, 25 per cent; Jonathan, 50 per cent. And yet some people wonder why the Ben Davis maintains its place as a popular commercial variety.

In response to our request, a number of Fruit-Grower readers have written us in regard to the size type we have been using. And practically all of them say it is too small, so we suppose we will have to use a larger type. This will be done just as soon as possible, within the next two or three months, at farthest, for we want our columns to be read by every subscriber, young or old.

The United States Department of Agriculture has bred two distinct new fruits—the citrange and the tangelo. The former is a cross of a common cultivated orange and the hardy trifoliate; the fruit has a thin skin, is very juicy and nearly seedless; flavor sour, resembling lemons more than oranges. The tangelo is a cross between the tangerine orange and the grape fruit, or pomelo. Both these fruits are much hardier than the common orange, and can be grown perhaps 200 miles farther north. Dr. Webber, of the department, believes that from these two bybrids, with others which shall follow, a new race of fruits can be produced, and that in time we may have perfectly hardy edible oranges.

Notes by the Way

A company has been formed which will erect a large hotel in Southern Missouri, near some of the springs for which that section is famous. A feature of the hotel will be the fact that it will be built of logs. This ought to be a drawing card, and doubtless will be. But it is doubtful if this modern log hotel will have half the charm which some of the old log houses in Missouri had in an early day. Log houses seem to have gone out of date, but Missourians can recall many of these houses which at one time seemed to them to be the best places on earth.

Can you not remember the one log house which you used to look upon as the best place in the world? Perhaps your grandmother lived there—as did mine—and your father had been born in it. There was the fireplace in the end, and if the house were a large one there may have been a fireplace in each end. Took lots of wood to keep the fires going, but wood was not worth $5 a cord then—it was plentiful, about the most plentiful thing about the place. Above was the "loft,' and adjoining was the addition which was built after the original house had been found too small. Perhaps the kitchen was detached, with a connecting corridor with the main house. This kitchen had another fireplace, used in the earlier days before the advent of stoves.

In the "loft" was the "boys' " room, with its four-poster bedsteads, supplied with cords insted of slats. Ever

see one of them? And then the great thick feather beds, which were common before feathers became so scarce and so high. Not sanitary, you say! But no one knew this then, so they were as well off.

Hanging to the rafters was the winter supply of nuts and popcorn—the corn in strings and the nuts in sacks, or perhaps in an old pair of trousers, with the legs tied tightly at the bottom; into these the nuts were poured, and, suspended from the top by strings, like suspenders, the package looked for all the world like the lower limbs of a man hanging from the rafters, so that as a boy you were rather afraid of them in the dim light of early morning.

There was another thing about these old-time houses which one seldom sees now: The flower beds were in the vegetable garden, about the border of the lettuce bed or radish bed—all these vegetables were planted in "beds" by our grandmothers, although we all know they can be more easily tended if planted in long rows. Next the paling fence—made of home-made palings—were planted the hollyhocks, and no flower ever looked so pretty as they did to us then. Not the double sorts which are now so mucn planted, but the old-fashioned single ones, which are, after all, much the prettier. Then there were pinks—China pinks and "ragged robins"—sweet Williams, and just by the gate were the four-o'clocks. The vegetables and flowers were grown in the same inclosure, and all were tended by the same hands.

Just back of the garden was the broom-corn patch—for on this old-time farm the family made their own brooms. Great, heavy things they were, but they were most effective in keeping the house clean as a pin. The barn came next, and it was built of logs, too. Perhaps you remember when they had the "log-raising" when the new barn was built. It was a great day, and the whole neighborhood turned out to help in the work. The orchard adjoined the stable yard. Not a large orchard, perhaps, with only a few varieties, such as Rambo, Milam, Janet (we called them Genitons then, before we knew better), Winesap, Early Harvest; and then there was likely a tree called "cider apples." Just why we could not say, for no cider was made of them. But they were not good for anything else, so they were called "cider apples," on the theory that they ought to be good for something.

The cherries were of the Morello type, on roots which sprouted terribly; the plums were mostly blue damsons, and the peaches were apt to include a good percentage of the blood clings—Indian peaches, as we knew them. The blackberries and raspberries grew wild, and in many places the strawberries and gooseberries were provided in the same labor-saving fashion. No fruits were sold. The neighbors were welcome to share the supply as long as it lasted, and there was almost a community of interest.

This was not so very long ago. But these old-time homes are getting scarce. Times have changed wonderfully—and in some respects not for the better. There was a contentment and a peace, a simplicity and a family spirit about these old places which should not be allowed to pass away.

Ah, me, this new log hotel may be all right. But it will not equal some of the old-timers unless it brings back some of the attractions of the log houses which you remember, and which I remember.

"Have you ever noticed that old men are the ones who plant apple orchards, as a rule?"

This question was asked the Fruit-Grower not long ago. Yes, we had noticed it. And so have you. Can you not recall that most of the orchards are planted by those who are past middle life? If you have not, then think of the orchards in your commounity and see if this is not so.

Wny is it? Various reasons are suggested. One says that the older men are the ones who have the experience needed, and therefore they are the ones who plant. But we believe the real reason is that the older men are the ones who will have patience to wait a few years for the returns from the orchard. The younger fellows are too impatient, and will not wait.

There is a reason for this. Time does not seem so long to the older men as it does to those of more youthful years. Eight years to wait for a crop! It seems an age to the one with the fire of youth in his veins, and yet it seems but a few days to the one on the downward grade. Eight years is not long to one for whom time passes rapidly. It seems but yesterday since that young man, your son, who is so impatient, was but a boy; indeed, it was but yesterday. How well you remember him as he used to plead to be placed on the horse's back when you led him down to the spring for water. Then but a day it seems since he started to school and was perplexed with the mystery of why 2 and 2 make 4. Perhaps you remember the day you took him to school for the first time—of course you remember it. For you yourself had attended the same school, and when you took your boy there for the first time it seemed as if the cycle was complete. But now he has finished the school, and it seems an age to him since he started; but to you it was as yesterday.

No, the young man doesn't want to plant an orchard. Too slow getting returns, he says. Too long to wait; apple business be overdone by the time the trees begin bearing; life is too short to wait. Have you not heard this sort of thing? And always from the younger men? The older ones do not talk that way—they know that time moves so rapidly that the trees will soon begin to bear. And they know, too, that the apple business will not be overdone, for they have heard these claims since they were boys.

And so the father—the older man—plants the apple orchard.

Don't blame the young man for being impatient and in a hurry. Time doesn't move so rapidly for him as it does for you. Can you not remember when it seemed as if the time would never pass? Can you not remember how long a time it seemed, when you were a boy, between the day when the circus bills were posted and the day when the circus finally arrived? This used to be our idea of an age—this interval between the promise of the circus and its arrival several weeks later. Can you not remember this long stretch of time, which seemed to drag, oh! so slowly? And yet, now that you have grown older, and time passes swiftly, it seems that the paste is hardly dry with which the circus bills are posted until you hear the mad screech of the steam calliope at the end of the circus parade. Time passes swiftly now.

And so, when it is considered that the apple trees will not bear for perhaps eight years. the younger man cannot wait, and the older ones plant the orchards.

At least. this is our theory.

J. M. I.

THE "FAMILY CIRCLE"

This is a new department which we shall use occasionally to publish some things we want to say to Fruit-Grower readers. The title, "Our Family Circle," does not mean that this is a "home department," or anything of that sort. It is simply a means of communication between the members of "The Fruit-Grower Family"—and you know the "Family" includes all our readers.

This feature is made necessary by the fact that our readers have been so very helpful in building up the Fruit-Grower. Our older subscribers will remember how, in the early days of the Fruit-Grower, we promised that if they would help us get our circulation to 20,000 copies per month, we would greatly improve the Fruit-Grower. This mark was reached, and the paper showed a constant improvement. Then we set out to reach 30,000, and now this mark has been reached, and the Fruit-Grower is better than ever before. All this has been done with the help and co-operation of our readers—they are partners with us, and the only partners we have; they are the members of "The Family."

Now, we are making for the 50,000 mark. Shall we not have the help of every member of "The Family?" On our part we will promise to continually improve the paper, for, good as it is, it is not all that we hope to make it, with the co-operation of our readers. Can we count on your help?

How can you help? Well, we will tell you: By recommending the Fruit-Grower to your neighbors and trying to get them to subscribe. Get up a club of new subscribers to send with your renewal.

Remember, that while our regular subscription price is 50 cents a year, we accept a club of five new subscribers, where they are sent in at one time, at rate of five for $1. More than five can be sent at this same ratio, of course. Not only this, but where this club is raised by one of our subscribers, we will accept four new subscriptions and one renewal for $1, thus allowing subscribers to include their own renewal as one of the list of five.

Now, how's that? Is that not a proposition which will permit every member of "The Family" to help? You are going to renew your subscription anyway. Why not get a club to send with your own renewal? And do this today.

One question we are often asked, in connection with this proposition, is: How can you afford to make this offer?

Well, we can't afford it, if we counted the first year's subscription only. But we expect to get renewals the second year at our regular rate. You will see, thereore, why we are so anxious that all our old subscribers renew their subscriptions now. Do it today.

The expenses of the Fruit-Grower are very heavy at this time, and we must urge our readers whose subscriptions have expired to renew promptly. Why, do you know that the actual cost of the white paper for the January number was almost 3 cents per copy; the postage was half a cent more. And to add to this is the cost of the various special articles, the cuts, the type-setting, presswork, folding, stitching, etc., besides the clerical work in the subscription department, editorial and advertising departments.

The date after your address on the wrapper in which your Fruit-Grower is received shows just when your subscription expires. If the date after your name is "Dec. '03," it means that your subscription expired in December, 1903, and your renewal should be sent at once.

We have done our part in trying to make the Fruit-Grower the best paper of the kind in America. Shall we not expect our readers to show their appreciation of this? Send your renewal and a club of new subscribers today.

Now, just a word about the January number. It was delayed on account of our press failities being overtaxed. The presses were started early in the month, but only eight pages could be printed at a time, and the cover pages, with two colors of ink, had to be run through the press twice, so that the task of printing the paper was a large one. But was the paper not worth waiting for? A great many of our subscribers became impatient and wrote to know the cause of the delay. In fact, the letters just poured in, asking for copies of the January number.

Within a day or two after the January number was mailed, congratulatory letters began to come in. The first papers sent out were to advertisers, and one of the first letters received was from the W. Smith Grubber Co., LaCrosse, Wis., who wrote:

"This one number is worth more than the annual subscription price to every farmer. It is art; it is educational."

Other advertisers wrote along the same line, many being even more emphatic in their praise.

And then the subscribers—the members of "The Family"—began to write. It seemed as if a great many of them sat down as soon as they received the January number, and wrote us to express their approval. In mailing the Fruit-Grower the papers for the different states are mailed in alphabetical order, Alabama, Arkansas, Arizona, etc. going out first, and so on. The first letters from subscribers came from Arkansas—they were the first who received the paper, you see. One of the first—perhaps the very first—of this class of letters received was from T. B. Miller, Springdale, Ark., who said, among other things:

"You have made what I am almost ready to call marvelous strides in the last two or three years. You go by leaps and bounds. I read with great pleasure the history of your paper, and as I thought about you all, I resolved to send a club of five subscribers—and here it is."

Mr. Miller wrote a lot more, but we might be accused of vanity if we printed all he said.

Then the other states began to come in. Illinois members of "The Family" were next, at least in regard to the number of letters which were received. T. J. Kerr, Ipava, Ill., at once wrote for some samples, and said:

"I must say the January number is the finest paper I ever saw. The wonder is how you can furnish it so cheaply. I want to get up another club." And he sends for some samples, and has gone to work.

Then the members in the "K" states arrived. Dr. P. Ligon, Robards, Ky., sends for some samples to use in getting up a club, and adds: "The January number is certainly full of good things for fruit-growers—and to say it is full means a great deal, for it is a large number. I do not see how any one interested in fruit growing can do without the Fruit-Grower." And we shall soon receive a club from Dr. Ligon.

And so it has gone, all through the list. Everyone writes for a paper or two to use in getting up a club. It has been interesting to note how the arrival of the letters has been timed with the sending out of the papers. Our foreign subscribers will come in later, our one subscriber in the heart of India being perhaps the last one to hear from. But we confidently expect to hear from him, for he is most appreciative. He has no opportunity to get up a club from among his neighbors, of course, but what do you suppose he does to show his appreciation? Why, he sends $1—in English money, of course—and renews his subscription for another year, for our foreign subscription rate is $1 a year. He is now paid up for the next two years.

All these letters have been a great help to us. It has encouraged us to undertake still greater things. We began to acknowledge these letters personally, but finally they became so numerous we could personally answer only a few of them. Those who have sent us these letters of congratulation, however, will know by this that we appreciate them, from the depths of our heart.

And now, just a few more words about the January number. We printed several thousand extra copies—the actual run was 35,500 copies—to provide sample copies for members of "The Family" who will use them in getting new subscriptions. Tnose who can use a few copies should send for them at once. We must urge, however, that they ask for as few copies as will accomplish their purpose, for the January number is in demand. We are saving 1,000 copies for new subscribers, so that the first 1,000 new subscribers whose subscriptions are received can have their subscriptions started with the January number, and therefore it will not be necessary for club-raisers to give away their sample copies—simply send these subscriptions in early, and we will then send the January number to the new subscribers.

Now, shall we not have about 10,000 of our readers at work for the next month trying to get up clubs for us? Remember that we have no traveling agents—we rely on "The Family" for this work. Is it asking too much? Does the Fruit-Grower not deserve it? We think it does, and therefore we urge every reader to get up a club of new subscribers—and if your subscription has expired, send your own renewal.

And do it at once, if you want copies of the January number.

As a final word, we urge you to see that all names are plainly written and properly spelled; see that your letter is correctly addressed to us, securely sealed, and we will risk getting it.

January was a great month for us. Shall we not make the one to come even greater? Yours very truly,

THE FRUIT-GROWER CO.

New Fruits and Old Ones

A paper read by Orlando Harrison, of Berlin, Md., before the Maryland State Horticultural Society:

Nomenclature should be the household name to every fruit grower, and new fruits should demand the attention of the most skeptical grower. We should have a public education and there is nothing better than the individual planting the tree or plant and experimenting with it yourself. There have been many truthful descriptions sent out of new fruits, as to their value, where originated, and from that description, caused many to be tested while in some instances a success and in others a failure followed.

We should encourage the introduction of new fruits. For instance, take the peach: According to records in 1840 Troth's Early first came in prominence and now to take the place of that peach we have many valuable varieties of the Chinese strain that are larger, healthier and more vigorous trees, that suit the climate and will make the grower money where some varieties planted twenty years ago will not pay expenses.

The successful fruit grower is giving the selection of varieties more attention from year to year. Among the new peaches that have attracted the attention in the state, that have been fully tested and not yet planted extensively, is the one Mr. Allen asked the fruit-growers of the state to sample last summer at his place, "The Ray." The trees are now six years

ORLANDO HARRISON.

old and the parent tree is sixteen years old and has never failed to give a crop of fruit. At the field meeting many of the representative fruit-growers of Delaware and Maryland were there as well as from other states. While the cantaloupes disappeared when placed before the guests, the topic of comment was the peach orchard loaded with fine, luscious fruit that was paying the grower so handsome a price.

The orchard being only six years old, has paid the grower one dollar per tree clear of all expenses, except the growing and the hauling, which was but little, each year since the trees were planted. The marked success he had with the orchard led him to have us bud five thousand trees for his exclusive use from original stock.

Being very much interested in peaches since the meeting, I wrote each one who attended for an expression of their opinion of the peach and sixty have replied, giving testimony that it should be introduced. One wants to sample again, another says we have enough white peaches, another says yellow peaches have been planted too freely and more white should be planted, and one says it is not the peach he is looking for. Yet about 98 per cent who saw the orchard and sampled the fruit sum it up by saying: "It has many qualities, size, shape, it is firm, fine appearance, worthy of place, fruited when others failed and a money maker classed with the Ben Davis apple for profit, that it makes words unnecessary, having all requirements."

The last touching clause from one is judicious cultivation, intelligent fertilization and careful management goes a long ways toward success of a peach orchard.

Now, I ask do we want to try this new fruit.. It is true that too many plant too many varieties, yet few plant too few to handle them economically. Look for a moment at the advantage of varieties that suit the different localities in the mountainous regions of Washington County. The Salway has been and is today one of their best peaches, while on the eastern shore of Maryland we do not attempt to grow them.

To name twelve varieties for the eastern shore, most of the up-to-date planters include the following varieties: Greensboro, Carman, Mt. Rose, Elberta, Reeve's Favorite, Old Mixon, Belle of Georgia, Fitzgerald, Moore's Favorite, Fox Seedling, Chair's Choice and Crawford Late. For the mountainous districts they use most of the above varieties with Smock, Gray's Holdon, Wonderful, Engles Mammoth, Pickett's Late, Lerey's Late, Crosby, Salway and Bilyeau's Late October. Now, have we yet room for new ones?

Apples.

Apples are attracting the attention of the fruit-grower as well as the farmer more than at any other time in the past history, as the appie has become a necessity. Only a few weeks ago I had the pleasure and honor of visiting Judge Fred Wellhouse of Kansas at his home, a man of seventy-five years of age, full of enthusiasm on apples. He has now planted 1635 acres, and is recognized as the apple king of the world, has made a financiai success and from the earnest advice he gave on apple growing made me feel that it was a great pleasure to be an apple grower. He impressed on me the necessity of system, keeping accurate accounts of what is expended and insists that the man who plants apple trees, cultivates well the first five years and has push and vim and makes his orchard self-supporting for the first five years, cannot help but succeeed.

Mr. Wellhouse succeeds best with the following varieties named in order as to their value: Jonathan, Missouri Pippin, Ben Davis, Winesap, Gano, York Imperial, Maiden's Blush and Cooper's Early. The two last named varieties have been dropped from his list in his last plantings. He has marketed his crop as low as 5½c per bushel while it has cost as much as 10c per bushel to pick and barrel them.

His largest crop was in 1890, equaling 79,170 bushels from thirty-five acres. He prefers the high hilis of the best soil for best success and such land costs him $50.00 per acre. He has made a reputation as a successful apple grower and is proud of his profession which has helped toward success.

Now, the fruit-grower asks for an apple as productive as the Ben Davis with quality of the Winesap or Grimes' Golden. Who is the one to find that desired new fruit? Our trees come in bearing at the age from seven to ten years from planting, some a little earlier. They yield more per tree and live much longer than the western trees.

There have been many new varieties of pears introduced for quality, probably none surpass the Bartiett, Seckel, Lawson and for productiveness nothing yet equais the Kieffer, although the past season was almost a blank one for this variety. It seems to be less subject to disease and insects than others.

In the pear we need that new fruit as productive as the Keiffer with the quality of the Bartlett. May we have it?

Plums.

Many have made fabulous prices on the plum. On our peninsula the last season, the new variety attracting some special attention is the Climax. The most profitable one of the extra early varieties planted to any great extent is Red June and it is a favorite. The other varieties planted principally are the Abundance, Burbank and Wickson, Ogon, Satsuma, Wiid Goose, Willard, Normand and Shropshire Damson are planted in less quantity. Some trees of Red June and Abundance at four years old netted $4 per tree. What seems to be needed in the new varieties of plums is one that will not rot so easily. Plums are easily grown, but rather difficult to depend on until the money is in bank.

Cherries.

But few venture to plant a cherry orchard of any size, while in Ohio one of our customers told me his ten-acre Montmorency cherry orchard had been the past two years a paying investment. It had paid the expenses on one hundred acres of land, both the purchase price and expense of cultivation to date. He regarded the Montmorency the best one for the canning people, yet the Early Richmond and Dyehouse are good ones. Some have found sour cherries to be profitable in this state, but there is still room for improvement and new varieties.

Strawberries.

This is one fruit no family should be without. There has probably been more disappointment from the introduction of new varieties than any other nursery stock, because they are such a rapid increase and the fever of the color thrown before the purchaser is not forgotten until he fruits them and determines whether he needs them or not. New varieties of strawberries introduced have caused the season to be extended for several weeks, when about about twenty years ago but few grew, except the Wilson. The two staple varieties planted today are the Excelsior, very sour, but firm and early, and the late one of older varieties, the Gandy, usually planted on low, well-drained soil.

Our Delaware friends say the Climax is the up-to-date berry for profit. Other standard varieties are grown such as: Bubach, Clyde, Haverland, Michels Early, Nick Ohmer, Parsons, Sharpless and Tennessee Prolific. In Arkansas they write us that Early Hathaway and Hubach are the coming early ones, but there are as many

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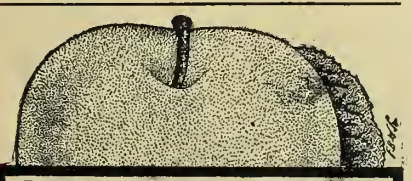

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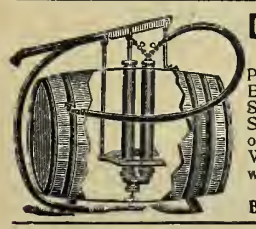

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others yet to be tested. There is a demand for a new berry as productive as the Tennessee and with better shipping qualities.

Asparagus.

This vegetable is grown by few and varieties seem to be less regarded than most any other plant or tree grown. On our soils we find Palmetto to be a very good grower, yet the Giant Argenteuil is the most vigorous grower of all the varieties. In asparagus we could do with the varieties we now grow, yet if we expect to make progress we hope for a new variety to be an improvement over the old ones.

Grapes.

Concord, Moore's Early, have yielded well the past season. I was in a vineyard during the summer when they were being picked and the most successful grower, said to me that the Moore's Early was the best of all the varieties for the money end of the business. He had a heavy crop and was handling them in a most satisfactory way to himself, that is to say he was selling them direct at the boat-landing.

While the old varieties are doing remarkably well, there is plenty of room for new varieties that are more productive and of better quality.

Summing up the situation on nomenclature and new fruits in Maryland, we have the ideal soil in close proximity to the best markets of the world, then let us plant new fruits as well as the old tested varieties and take advantage of our opportunities in Maryland.

Successful Fruit-Growers' Association.

The Fruit-Grower has referred several times to the Fruit-Growers' Association of Grand Junction, Colo., and will be interested in some facts concerning its business for 1903. Last year the organization shipped 537 cars of fruit, and handled a total of 682 cars of fruits and merchandise for the members, counting incoming and outgoing shipments. The season was the most satisfactory the organization has ever had. Prices were good, on account of the short fruit crop generally throughout the Middle West. Peaches averaged 59 cents per box for the season. Apples averaged 79 cents per box, and those shipped in half boxes averaged 45 cents; grapes, 24 cents a basket; strawberries, $2.05 per crate; cherries, $2.36 per crate. A part of the report of the general manager will be interesting to fruit-growers everywhere, for the points he makes can be applied generally. He said:

Now, just one word to the growers: large fruit sells readily while small fruit, either peaches, prunes or apples, are a drug on the market and have to be consigned even though the markets are in the very best condition. I wish to urge on you the necessity of growing large fruit. Our peaches of last season proved very satisfactory, but our pears were about as unsatisfactory as any crop we have ever handled. I contracted several cars at good prices, but when the shipments arrived they were merely turned down on account of the quality. Of course I do not consider the grower to blame for this, as we are all aware our crop of Bartlett pears was the poorest in quality we have ever had in this valley.

For apples we have received very satisfactory prices for the fancy stock and I believe will always be able to dispose of good stock at a fair price. On the No. 2 apples, as the conditions were this season, we succeeded in getting fair princes, but had there been a crop of apples either in Arkansas or Missouri or any of the middle states, we would not have been aole to have shipped them and get freight. I find the hardest proposition is the small apples. A large red wormy apple will sell in markets where they would not have the small sound apples at any price. I hope you will bear this in mind when it comes time to thin your fruit.

Brother Wampler and Ben Davis Apple.

The Fruit-Grower made a slight mistake in the January number, in referring to B. F. Wampler as the gentleman who sent the editor some very fine Kieffer pears a year or so ago—it was another Wampler, a brother, we believe. But the point was just as well taken, for B. F. Wampler has a large Kieffer orchard, so we cannot see how he can condemn Ben Davis apples, nothwithstanding they are good cooked, and at the same time grow a variety of pears which he will hardly recommend except for canning or preserving.

And the joke is still on Brother Wampler, for another subscriber named Wampler living near him writes and says that while B. F. did not have a peck of Ben Davis apples, he had none of any other kind, and he had no Kieffer pears, either. This subscriber would like to know how those persons who growd Morello cherries, Elberta peaches and Kieffer pears, can find the nerve to condemn Ben Davis apples. He would like to see the kind of man who can condemn old Ben because it is not the best variety to eat out of hand, and still grow Morello cherries. Certainly little of this fruit is eaten in this way. How about this, Brother Wampler?

I. E. Hodges, Dix, Ill., writes along this same line, and says that the apple crop in his section was very short last year and those who could get Ben Davis apples have eaten them with a relish. And so it goes. No one is compelled to plant Ben Davis apples, or to eat them. But we ought not to be too severe on those who think it the part of wisdom to plant this variety. We do not want Ben Davis altogether, but who shall say that another apple is now on the market which will take its place as a commercial variety in the southern part of the apple belt?

Cutlery for Fruit-Growers.

Elsewhere in this issue will be found the advertisement of the Maher & Grosh Cutlery Co., Toledo, Ohio. This firm advertises pruning shears, pruning knives, budding knives, etc., selling direct to the users, rather than through merchants. This is one of the best firms in this line of business in America. The firm was rather reluctant to advertise in the Fruit-Grower at first, because of the fact that other fruit papers had not paid as advertising mediums. But we assured them that the readers of the Western Fruit-Grower were different—they really need these articles, and we knew such goods as Maher & Grosh manufacture will be appreciated by our readers. We urge every reader, therefore, to look for this advertisement, and then write in regard to the articles advertised. They are all right.

Missouri Valley Seed Co., St. Joseph, Mo., general Western distributors for Bowker's Disparene. See ad on page 18.

Missouri Valley Seed Co., St. Joseph, Mo., general Western distributors for Clark's Cutaway Harrows. See page 20.

OUR FREE PAINT SAMPLE OFFER

Cut this ad. out and mail to us, and we will send you FREE by return mail, postpaid, our Big New Paint Color Sample Book. This free book contains samples showing the exact color of every shade of ready mixed House, Barn, Graphite-Creosote, Floor, Roof, Mineral, Enamel and Buggy Paint, also everything in paint and painters' supplies, including oils, lead, varnishes, dry colors, stains, brushes, sundries, etc. The free book contains a big fund of information on how to paint, how to select colors, kind of paint to use for different work, just how much paint is required to cover a given space, makes everything so plain that anyone without previous experience can do almost any job of painting. The free book shows a number of buildings in colors, intended to aid you in selecting colors for body, trimming, inside, etc.

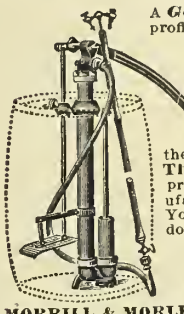
50c PER GALLON for highest grade Scroco Weather-proof MINERAL, BARN, ROOF and FENCE PAINT.

85c PER GALLON for highest grade ready mixed house paint, our Scroco, our own special ready mixed paint for houses, for wood, brick, stone or iron surfaces, for finest inside finish or coarsest outside work, is sold under our binding guarantee as the best paint made, will cover double the surface, last twice as long, at one-half the cost of other paint, never cracks, peels or blisters, guaranteed for five years, and will look better at the end of five years than other paint will after one year. Testimonials from painters everywhere and color samples of Scroco in our free color sample book. IF YOU WANT TO PAINT YOUR HOUSE, BARN OR OTHER BUILDINGS, don't fail to get this FREE PAINT SAMPLE BOOK and SAVE ONE-HALF ON THE PAINT YOU NEED.

Address, SEARS, ROEBUCK & CO., CHICAGO, ILLINOIS.

Get the Best

A *Good* Spray Pump earns big profits and lasts for years.



THE ECLIPSE

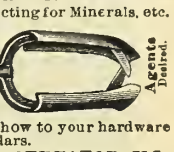
is a good pump. As practical fruit growers we were using the common sprayers in our own orchards—found their defects and then invented **The Eclipse.** Its success practically forced us into manufacturing on a large scale. You take no chances. We have done all the experimenting.

Large fully illustrated Catalogue and Treatise on Spraying—FREE.

MORRILL & MORLEY, Benton Harbor, Mich.

IWANS' BEST IN THE WORLD Post Hole & Well AUGER

For Post Holes, Wells, Prospecting for Minerals, etc. A man can do thrice the work with an "Iwan" than with any other. Used by U. S. Gov't.


Agents Desired.

Highest award, World's Fair, 1903. 4 to 10 inch $2.50; 12 inch, $6.00. Sample at special price to introduce. Show to your hardware dealer or write for particulars.

IWAN BROS., BOX. T STREATOR, ILL.

Wallace Power Sprayer

Compressed air does the work. Automatic in operation. Most economical of power and of liquid, easiest handled, does most effective work. Read the report from the State Agricultural College of Iowa sent us under date of November 2, 1903.

Covers All Sized Trees

Gentlemen:—In using your sprayer one man drove and handled one extension rod, while the other looked after the machine and handled the other rod. In spraying on both sides of the wagon and between the two rows of trees twenty-five years old, thirty-five feet apart, with ten to fifteen year old trees between, enough power was developed to spray perfectly every tree as it was reached.

"A. T. ERWIN, Acting Professor."

Under above conditions 2 men sprayed 12 acres a day.

Fitted to Any Wagon

or any size or shape of supply tank. Maintains pressure from 100 lbs up according to conditions. Constant driving not necessary. Furnished mounted complete, or not mounted but with attachments to fit any wagon requested. Either with or without mechanical agitators as desired. Free booklet describes in detail. Ask for booklet C.

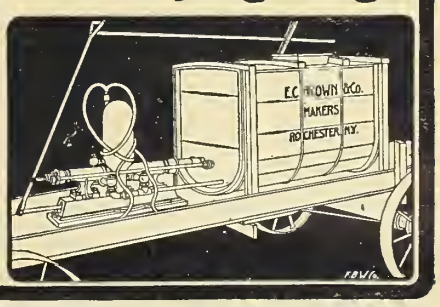
WALLACE MACHINERY COMPANY, CHAMPAIGN, ILL.

Orchard and Park Spraying Rig.

Nothing short of the strictly power outfits approaches the efficiency of this hand power sprayer. Operating the "Hydraplex" pump is like play. A boy easily

KEEPS A DOZEN NOZZLES GOING,

spraying 200 trees an hour. Brass working parts avoid corrosion. Valves and packing all exposed. Delivers spray as fog or mist and works at **Highest Pressure.** Sold separately or with our cypress 150 gallon tank, dirt proof, with outside strainer and mechanical agitator. May be used with any tank or barrel. **The only hand power sprayer for large operations.** We manufacture the largest line in America of high grade and power sprayers. Ask for free catalog of all Sprayers and Appliances.



E. C. BROWN & CO., 282 STATE STREET, ROCHESTER, N. Y.

A Methodist Preacher or Any Other Preacher Can Spray

Why? with Our *Separator Attachment.* Because we Guarantee Nozzles will Never Clog.

No Matter What Mixtures he uses. Kind or Style of Pump he uses. Kind or how many Nozzles he uses

FOR CATALOGUE, SEND TO

PIERCE LOOP SPRAYER CO., North East, Pennsylvania

35 Cents for Perfection Hand Sprayer. With 10 ft. extension for fruit trees, 75c. Our large complete catalog shows all styles spray pumps, from 25 cts. up.

70c. Buys our Universal Bucket Pump with 4 nozzles for spraying, sprinkling, etc. Handiest general purpose pump made.

$1.35 for automatic compressed air two gallon spray pump. Four gallon size $2.65. With solid brass tank $4.45. Extension pipes for trees extra.

17c for these Pruning Shears with best steel blades.

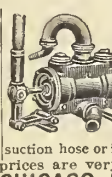
47c for Buckeye Pruning Shears with 22 inch handles.

42c buys this big strong Pruning Knife with hand forged blade.

4-Blade Budding, Pruning and Grafting Knife, 98c.

$4.50 for this bbl. Spray Pump with brass cylinder, suction pipe, hose and nozzle. 8 ft extension pipe 75c.

$1.95 for this **Solid Brass** bucket spray pump, with hose and nozzle. Sprays fine or coarse. Others ask $3.



$4.95 buys this double acting Tank Pump complete. Cap. 2 bbls. minute. Suitable for rubber suction hose or iron pipe.

CUT THIS AD OUT and send to us and we will send you our 576 page catalogue of everything used on farm and nursery. Our prices are very low. Postage on book is 14 cents; send 7c to help pay it.

MARVIN SMITH COMPANY. CHICAGO. ILLINOIS.

A Model Small Strawberry Patch

On the outskirts of the town of Columbia, in Central Missouri, there is a strawberry patch which deserves to go on record as a model plantation for its size. It covers barely three-fourths of an acre, and is the property of a market gardener, Mr. Henry Kirklin.

As a commercial enterprise this patch his proven highly successful. During the year 1903 when the strawberry season was so cold and wet that no fruit was formed in ordinary plantations, this patch of Mr. Kirklin's netted the owner over four hundred dollars. From find a ready sale, most of them being engaged for several days before they are picked.

Mr. Kirklin grows four varieties of berries: the Clyde, Jessie, Warfield and Dwarf Champion; and by far the largest percentage of the berries during the past season were picked from Clyde. This berry he finds to do especially well in a wet season. Jessie, Mr. Kirklin has found to be an uncertain bearer, but producing good sized fruits when it does bear. Warfield is with him a good producer, but the make it produce to the utmost of its ability. The small area of the plantation makes it possible for each plant to get more attention and have its needs beter looked after than if the same number of plants covered twice the ground they do. Within the small limits of the estate of most market gardeners it is necessary for every square inch of the ground to produce the largest amount of money in the form of plants or plant products as is possible. Just such a condition of affairs as this has made it possible for Mr. Kirklin to reap such a bountiful harvest from his plantation.

The possibilities of the intensive cultivation of strawberries are only in their infancy, and as soon as we reach

MR. KIRKLIN'S MODEL STRAWBERRY PATCH.

the beginning to the end of the picking season, which covered a period of four weeks, there was picked off of this small area a total of 4,074 boxes, or 166 crates. On an acre basis this would have been a yield of 212 crates.

This yield, and especially in such a wet season as the past, has been due entirely to the watchfulness and care of its owner. The small size of the patch makes it possible for each plant to have more of personal attention than would be possible were they scattered over a wider area. As it is they are in matted rows 400 feet long, and the luxuriant, deep green foliage of the plants spreads out, making the rows fully a foot and a half wide. During the picking season the edges of these rows are bordered on either side with a crimson fringe of delicious berries, and almost a solid layer of fruits in the center.

As for cultivation, Mr. Kirklin is a firm believer that strawberries and weeds do not do well together, and the result is that this patch is kept so clean, that a weed, no matter how respectable, ever dares to show its head. As soon as the picking season is over Mr. Kirklin begins cultivation and keeps it up until late in the summer. On his place he has found that the most useful tools for his purpose are a fine-toothed cultivator, a hoe and a spading fork. These tools are used as necessity demands; the cultivator doing the most of the work, and the hoe and fork being serviceable principally in cleaning out the corners and other places not being easily reached by the cultivator. These tools are kept going all summer long, as frequently as the owner thinks the patch needs it, which is occasionally as often as two or three times a month. With the approach of autumn, when all plant life begins to prepare itself for a long cold winter, cultivation is stopped and as soon as the first freeze occurs Mr. Kirklin puts a straw mulch on the patch. By this means he keeps tne plants perfectly dormant from the time the mulch is put on until it is removed in the spring.

The picking and marketing of the berries is done by Mr. Kirklin and his family, and perhaps assisted by two or three children, who receive one cent a box for what they pick. The work of picking begins as early in the morning as it is possible to see the berries and is continued throughout the day until the patch has been covered. In the height of the season this often keeps the limited number of pickers busy all day long. The berries are sold on the local market and always fruits are not very large. Dwarf Champion has not been grown by Mr. Kirklin long enough to show what it can do. This year it produced a small crop of good berries.

Now the question may be asked, if Mr. Kirklin can get 166 crates off of his three-fourths of an acre why can't we get berries in the same proportion off of a hundred acres? As a rule, such a thing is seldom done. The reason is due to the difference between intensive and extensive cultivation. In intensive cultivation of strawberries, as practiced by Mr. Kirklin, the plants are growing close together and each individual plant gets such care as to a point where it is necessary to make a given area produce to the utmost, then this manner of farming will be more extensively practiced.

Like all other plants, the strawberry has its peculiarities, and for best development demands certain requirements, yet any one who is a close observer of plant growth will soon learn what these requirements are after a very few trials at cultivation. The strawberry responds so quickly to good care that a small area can be made to give large returns for the labor expended on it and near all small towns a patch conducted on the plan carried out by Mr. Kirklin will turn into the coffers of the owner, at the period of its prime, a good substantial profit.

Columbia, Mo. E. H. FAVOR.

SPECIMEN PLANT IN MR. KIRKLIN'S PATCH

Strawberry Plants

As good plants as were ever grown. List of varieties complete—over 50 of the best ones.

CATALOGUE READY JANUARY 1.

D. McNallie

SARCOXIE, MISSOURI

Best New Varieties of Strawberries

At Greatly Reduced Prices

Send for descriptive catalogue and Spring price list.

HUBACH & HATHAWAY

JUDSONIA, ARKANSAS

SMALL FRUIT PLANTS

Now is the time to order for spring planting, as early orders save disappointment in spring rush, owing to shortage of varieties, if ordered late.

C. B. GREEN, SEDALIA, MISSOURI

Choice Strawberry Plants

Good supply of large Strawberry Plants for Spring of 1904. All the best Standard Varieties, with some of the Newest Out; also Cumberland, Gregg, Nemaha, Kansas, Haymaker, Cardinal. Raspberries, Grapes, Currants and Gooseberries; 25 years' experience in growing plants and fruit enables us to sell you good stock at the lowest price. Send card for descriptive catalog.

R. D. McGEEHON, Atlantic, Iowa.

STRAWBERRY PLANTS

All of the best New and Standard varieties. Also the best leading and standard Blackberry and Raspberry plants. Vigorous. Heavy Rooted and true to name. Our prices are right and we Guarantee satisfaction. Low transportation and prompt shipments. Illustrated and descriptive catalogue free.

R. F. D. No. 6

A. R. WESTON & CO., Bridgman, Mich.

"I find more information in a condensed form in the Fruit-Grower than in any other paper I ever had access to."—S. E. McCluer, Allendale, Mo.

"I would not be without the Fruit-Grower if it cost five times as much as it does."—Chris Ward, Lafayette, Colo.

Potash

is removed in large quantities from the soil by the growing of crops and selling them from the farm.

Unless the Potash be restored to the soil, good crops can not continue.

We have printed a little book containing valuable facts gathered from the records of accurate experiments in reclaiming soils, and we will be glad to send a copy free of charge to any farmer who will write for it.

GERMAN KALI WORKS,
New York—93 Nassau Street, or
St. Louis, Mo.—4th and Olive Sts.

Two Million
Strawberry Plants

Every one of them good honest plants with an abundance of branching rootlets. Good big crowns. **Free from disease** and in the most thrifty growing condition. Guaranteed true to name and variety. No other grower can produce anything better. Our

Strawberry Catalogue

contains 20 pages of matter devoted exclusively to strawberries. Gives good, straightforward and honest descriptions of the 45 varieties we grow. Tells just what each has done in fruiting here on our own farm.

PRICE $1.75 to $2.50 per Thousand. Discounts for larger quantities. Write for free catalog today. It's sure to make and save you money.

J. W. JONES & SON, BOX 27, ALLEN, MD.

$1 Strawberry Offer

For one dollar I will send and prepay these choice new varieties:

12 Climax, 12 Early Hathaway, 12 Challenge, 12 Lyon.

Select plants. I grow strawberries exclusively and they lead the world. Beautiful illustrated Strawberry Catalogue Free.

W. F. ALLEN, Salisbury, Md.

Choice Apples

and the greatest quantities of them result from planting rightly propagated trees. The great Harrison Nurseries have ready for planting over

A Half Million Trees.

They are the most shapely, the healthiest, the most vigorous growing and the best rooted trees to be found in the land. The great market apple, **Ben Davis,** and the ever popular **York Imperial** are leaders of winter varieties. A long list of others, a hundred varieties, includes **Grooning, Wine Sap, Baldwin, Crimea Golden, Missouri Pippin, Rome Beauty, Stark, Wealthy, Jonathan, King** and all the worthy summer and fall varieties. Don't fail to write for our late catalogue. It's our only salesman which introduces our trees everywhere. **Safe delivery guaranteed to all parts of the United States.** Peach, Pear and Cherry trees, Strawberries, Asparagus, etc.

HARRISON'S NURSERIES,
Box 32, Berlin, Md.

Save the Trees

from sun scald and blistering and keep off mice, rabbits and tree borers with

The Hawkeye Tree Protector

Cost, a matter of **60c a hundred,** or **$5.00** per thousand. Size 12 by 20 inches, easily and quickly fastened. The one **Protector that always protects.** If you have young trees to save, you will profit by writing for descriptive circulars.

Burlington Basket Co.,
Box 111 Burlington, Iowa.

BARGAINS IN PLANTS AND TREES

worth double the money, by mail postpaid.

200 Marie Strawberry	$1 00	20 Wilder Currants	$1 00
100 King Raspberry	1 00	20 Fay "	1 00
100 Ea. King Blackberry	1 00	20 Elberta Peach	1 00
100 Ohmer "	1 00	10 Pear assorted	1 00
20 Niagara Grapes	1 00	10 Cherry assorted	1 00
20 Worden "	1 00	15 Apples "	1 00

Everything for the fruit grower best varieties cheap. Free catalog of great bargains—3 new strawberry plants free for 6 names of fruit growers and 2c stamp.
W. N. SCARFF, NEW CARLISLE, OHIO

Strawberries in Washington.

In the Fruit-Grower some months ago Mr. L. C. Wright of New York gives his system of hill culture of strawberries and claims to have originated same, but I have used practically the same system for the past five years—ever since I put out my first plant, and gave my method in the Practical Farmer some three years since.

In making ready I run an Iron Age wheel hoe, with single plow attached, where I want the row, making next row from 12 to 18 inches away, with walk from 24 to 30 inches wide between sets of rows. I place plants 12 to 15 inches apart in rows, according to variety, and I find that this space is sufficient for even such strong growers as Emperor, Sharpless, Corsican and Sample, though I sometimes set plants diagonally in order to give them the benefit of all space.

In setting plants I never wet roots unless the ground is dry. I first trim off all but two or three of the central leaves, and unless pressed for time shorten roots to about three inches. This root pruning has a double advantage: roots are more easily and surely spread out and each roots throws out numerous branches. If taken up later and the new roots pruned, these, in their turn, throw out a multitude of fibrous rootlets until a vigorous young plant will be solidly annexed to a whole lot of territory, and these fibrous roots are mighty good feeders.

Crawford, in his valuable booklet, "Strawberry Culture," says that this pruning tends to make new roots start from the crown of the plant, but if tnat is the case I have failed to note it, though I have not looked for them.

Now, with plants trimmed and pruned and a furrow thrown open just far enough ahead of plant setting to have the ground fresh, plants are placed in bottom of furrow with outspread roots and loose dirt from the upturned furrow raked down onto roots with right hand; this is pressed solidly on roots with backs of both hands (or fists) and loose dirt raked around plant with left hand. With a little practice, with plants dropped by helper, a man can easily set 400 to 500 plants an hour and every plant will grow—that is, if it is a good plant, as it should be if you grow it yourself. In my own experience I have learned to fight shy of plants sent out by seed houses, as usually many, and sometimes all, of them are dead. Regular plant growers generally send plants in good condition, but a great big blowgun in the East soaked this section good last spring with a lot of miserable plants with three and four scrawny rootlets. Well, he won't do it next year. A whole lot of us will let his starvelings severely alone. "A living dog is better than a dead lion." We did not plant all of them by any manner of means, and not desiring to play "wet nurse" all summer to save a lot of disgusting runts, many of the "thoroughbreds" went onto the compost heap.

I am trying a, to me, new wrinkle. Crawford tells us that runners can be grown to run in any desired direction since runners spring from the side of the plant farthest from the mother plant that produced it. This is all well enough when the plant is still attached to the parent plant, but, when detached while it may not be usual, it is certainly not infrequent that the independent plant throws out runners in all directions. But I am sampling the scheme by setting plants to throw all runners toward the walk—if the rule works. This should simplify runner cutting immensely.

Why do some strawberry growers swell up three sizes when they get a small crop of fall berries, and where do they get that 50c to $1 per quart in September we hear of? We get $3 per 24-quare crate here. Out hear either the Oregon or St. Joseph everbearing produce fruit from May till fall. They were well filled with blossoms on October 24, but it was too late for these blossoms to fruit. Eastern growers say that they have to irrigate the Oregon to get late berries and T. Greiner of New York, says St. Joseph will not produce a blossom after the regular season. Why? Here either one will fruit, to some extent, on dry sand after three months drought, but of course they do better on more moist soil. Are our cold nights entitled to credit for the better fruiting? And if this be so why do not "Oregon Ironclad" which I got last spring from the big man of Michigan show some sign of a second crop when given special care, or did care kill the crop as well as the cat? Or did I plant "when the moon was wrong?"

I think Kitty Rice will prove a double cropper here from behavior of a few plants I had last season.

F. A. COWELL.

Lakebay, Wash.

Fertilizer for Strawberries.

At the several horticultural meetings attended by the writer during the past year, the fertilization of the strawberry has come up for discussion, and it must be admitted that while in most states there was great interest shown in the subject, it was not given the carceful discussion it was entitled to.

The importance of early ripening, solidity of fruit and rich coloring are recognized by all small fruit growers and especially by him who grows for market. These three conditions can be influenced by character of soil and the kind of plant food applied.

The preparatory period of growth of the strawberry plant before bearing is but one year and the crop that may be obtained is largely dependent upon the strength and vigor of plant which has been acquired during this period. Hence it is desirable that the soil in which the plants are set should be abundantly provided with mineral elements.

One of the first requisites to the successful growing of strawberries is the preparation of the soil. The site should have rather heavy subsoil with preferably a sandy loam for top layer and should be well drained. In selecting the berry patch, do it with a view of setting in rows not less than ten rods long, the value of which will be discovered when it comes time to cultivate. Plow the ground deep, then harrow and drag. Don't, however, plow or otherwise work the ground when it is too wet or it cannot be pulverized properly. After harrowing the first time is when the fertilizer should be applied. This can be done with an endgate seeder or a regular fertilizer drill. Another good way is to sow it broadcast, the same as sowing grass seed, then follow with a harrow to cover it and mix well with the soil. One of the secrets of success from the use of commercial plant food on any crop is to have them evenly distributed and thoroughly mixed with the soil.

A ton mixture that has been recommended for small fruit is made from 800 pounds steamed bone meal, 600 pounds acid phosphate and 600 pounds sulphate potash. It must be borne in mind that small fruit is not derived from annual plants, but from perennials, andcharacter of feeding may be different from that in which the entire plant serves as a crop, as is the case with the cereals and most vegetables. And a fertilizer for such a crop should be compounded from materials that would provide a gradual and continuous feeding. As before mentioned, it is desirable that the soil in which the plants are set, be abundantly supplied with mineral matter and an application of 500 pounds per acre of the mixture given above is recommended.

Wihle an excess of nitrogen is to be avoided, yet nitrogen is an element that can be applied to strawberries at a profit, if supplied in a very available form and early in the season. Hence a top-dressing of about 100 pounds of nitrate of soda per acre should be applied early in the spring. In a garden or nursery where the plants are grown for market, the nitrogen is of much importance, since it encourages a growth of plant and runners. Possibly the most important element to the strawberry crop is potash. This holds good for all classes of small fruit, because it is so necessary to the fruit acid and the wood growth of both plant and fruit.

In most all strawberry fields the covering of the rows with straw or some other mulch is practiced. As this is not all removed in the spring, the question has been asked, how can I apply potash or nitrate of soda to my crop without wasting or injuring the plants. As both of these ingredients are soluble in water, they can be dissolved in a barrel or tank of water then sprinkled between the rows. If nitrogen is needed, about 100 pounds of nitrate of soda should be used. If potash is wanted use 150 pounds per acre of sulphate of potash. These materials can also be used in sprinkling on the mulch between the rows just before a rain, which will carry them into the soil without injury to plants.

St. Louis, Mo. D. L. DUNCAN.

GOOD CLYDE STRAWBERRIES.

60 VARIETIES
Strawberry Plants

None Better or Cheaper.

Spearfish, South Dakota, June 15, 1903.
H. W. Henry, La Porte, Indiana. Dear Sir: The 38,000 Strawberry plants I got of you this spring was the best large lot of plants I ever bought, and I buy every year. They are growing beautifully. Yours truly, F. L. COOK, Superintendent State Normal School.

These plants were shipped 800 miles, and this is the verdict of all my customers, that they get the best plants grown, for less money than from any other plant grower. Try and Be Convinced.

Send Now for 1904 Catalogue.

A general line of Small Fruit Plants and Nursery Stock.

LA PORTE NURSERY
LA PORTE, INDIANA. 50 Miles East Chicago.
H. W. HENRY, Proprietor.

Strawberry Plants

All the leading varieties every fruit-grower ought to have: **UNCLE JIM, AUTO, SUCCESS and our IMPROVED BUBACH No. 5.** All money makers. No disease, rust or blight. Prices right. Thousands of choice plants given away with orders. Liberal discounts on large orders. Hundreds of thousands of **Blackberry and Asparagus Roots.** See our catalogue before placing your order

CALEB BOGGS & SON
CHESWOLD, DELAWARE.

Send for our catalogue of

All Kinds of Berry Plants

Grape .Vines, .Rhubarb .Asparagus, and other **Early Vegetables,** Greenhouse and Bedding plants; Garden Seed and Seed Sweet Potatoes. Special prices on large quantities.

HENRY SCHNELL, Glasgow, Missouri

Berry Plants

And Berry Growing has been my Specialty for more than 25 years. 40 varieties of the best New and Standard Varieties, vigorous, heavy rooted and true to name. THE NEW STRAWBERRY that I introduced last season, proved a winner again the past season. It will pay you to plant my plants. They grow and produce large reops of big berries. Catalogue sent free. Write today. JOHN W. HALL, Marion Station, Md.

PLANTS OF THE **Beaver Strawberry**

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Offer choice trees and plants of all standard varieties, for orchard, small fruits, and ornamentals. Agents wanted on liberal pay.

A. H. GRIESA, BoxJ, Lawrence, Kan.

Strawberry Culture.

There seems to be as many different systems and ideas concerning methods of growing strawberries as there are growers. I have had to grow with the business, knowing but little or nothing about it five years ago, consequently I made many mistakes. If I wanted to plant, I would select any good corn land that was level or with sufficient fall to drain surplus water from the land. The land need not be over rich from the application of barn yard manure, but in good heart. Such land will produce a good crop of berries and the runners will not give as much trouble to remove as in very rich land.

I would confine myself to a few well tried varieties, as Warfield, Haverland, Bederwood, Clyde and possibly three or four others, but the main crop would be of four vareties. These bring the numerous crates, and that means cash. Most of these sorts make too many runners for the matted rows, and it will be found much better to plant in the narrow, half-matted row 3½ feet apart and any where from 24 to 36 inches in the row, two rows of imperfect and one row of perfect blossom-

ing varieties, thus giving a row of the latter between the two former.

Hoe about every two weeks during season, cultivating with Planet Jr. horse hoe and later with double disk cultivator.

For mulching I would use wheat straw from which chaff has been carefully culled. If oats or rye is used the chances are that next spring one will have to weed it out by hand at big expense. Prairie hay or swamp hay is best, but too expensive here in Illinois.

A field treated thus will give the owner a good fair crop of marketable berries. If one has only a small patch he can sell in a home market. If he has a large acreage he has to ship either direct or in combination. In the latter case, notwithstanding all the desire one may have of keeping Sunday as a day of rest, he will often be forced to pick on that day, as he cannot pick Saturday to ship Saturday night to nearby markets by express and if he lets the field go without picking for two days or till Monday a great loss would result. A good chromo will be given for a way to obviate this.

Ship in neat packages, never let inferior fruit go out under your name and nine years out of then the strawberry crop will pay.

Hamilton, Ill. P. M. MAIRE.

Mr. Maire sends us a cut showing a section of his strawberry field, which shows that he has put into practice methods which produce a nice-looking field. We have no doubt that the shown produced a good crop of fruit, for certainly there is every indication of it.—Editor.

Strawberry Experience from Tennessee.

I received a sample copy of your paper and had no trouble in raising a club, for some people heard of the paper and came to see me, wanting to put in their subscription. I was much delighted with the paper especially those articles on the strawberry, as I am a lover of that most luscious fruit, being a strawberry grower, originator and experimentor myself. Bubach has pleased me most of all, after testing many varieties. The one great trouble is in planting the Bubach with varieties which do not properly pollenize its blossoms. In 1902 a neighbor planted a field to strawberries, using only two varieties, which were Bubach and Haverland. I tried to argue him to use some other variety with them, but he thought he was right. In the spring of 1903 he harvested a crop of nubbins, and thereupon condemned the varieties and plowed under the field, saying there was no money in the strawberry. The fault was with the man and not the berry. At the same time we were harvesting as fine Bubach berries as could be wished for on much poorer soil than his, by planting the proper varieties with them, and we are still in the berry business. I relate this to show what ignorance will do. Why do not people subscribe for some good journal and learn such simple things, rather than grope in darkness and lose money; this is a mystery to me.

It is true we need a better berry to plant with Bubach than we now have, but we live in hope yet, believing that variety will soon show itself. Growers are constantly looking for such, and when Bismarck appeared, having heard its praise, it was given fair trial, but alas, it came far short. Clyde and many others also have failed to accomplish the desired result. We must take the matter in hand and originate such a variety ourselves. Such work we have already begun. When will we have a satisfactory perfect blooming Bubach?

Another cause of failure in berry growing is using plows with broad points in plowing the field, thereby forming high ridges along the rows which freeze and crumble in winter and dry out in summer; that fellow's berry field will be in fine shape next spring with the rows now elevated on a ridge twelve or fifteen inches high. Always use narrow points in plowing strawberries and in fact almost everything else.

Bubach is not the only berry with us, but it is one of our leaders. Dewey is the largest, almost as late as Gandy; six Dewey berries fill a quart.

Aroma is one of the best of the late ones. Tennessee is good, but will not stand drouth. Haverland is a good one of its season if planted with the right variety. WM. MASTERSON.

Knoxville, Tennessee.

Where to Buy Strawberry Plants.

W. D. C., Alton, Ill., writes to warn Fruit-Grower readers against sending a long way from home this spring for strawberry plants, stating that where long shipments are to be made the plants will often heat in transit and be worthless on arrival. He recommends buying plants just as near home as one can find good, reliable plants, and says that much disappointment will be avoided if this is done, even though one has to pay much more for the plants.

There is much truth in what is stated, especially if one tries to ship plants by freight, as some growers do, to save charges.. The freight business of the country is so congested at this time it is unsafe to try to ship strawberry plants by freight. If they are shipped by express, experienced packers ought to be able to ship them so that they will arrive in good condition, even though they are shipped for a considerable distance. But avoid freight shipments this year, anyway.

"I have been a reader of the Fruit-Grower for a year and take pleasure in recommending it to all fruit-growers. I have, therefore, secured a number of new subscribers, which I send herewith."—P. F. McCormick, Texarkana, Ark. This is the way our list grows—one reader likes the paper so well he tells his neighbors about it, and a club of new subscribers is forthcoming. Have you sent your club yet? The Fruit-Grower expects one from every reader.

"I find the Fruit-Grower necessary; I especially like the reports of horticultural meetings."—Maxwell Phillips, Denver, Okla.

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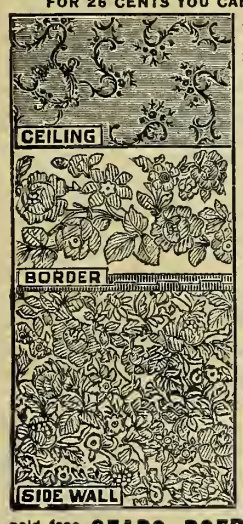

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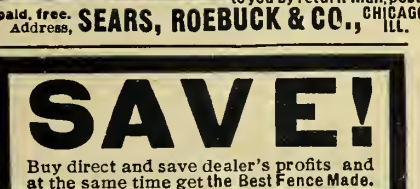

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How to Get Rid of Gophers, Moles and Cut Worms.

The best and simplest way to get rid of gophers is to take small potatoes and with a sharp, thin-bladed knife, cut nearly through the center of each, then open the cut and put a pinch of strychnine in the cut. Dig down to the gopher's run, drop one or two potatoes in the hole, replace the dirt to exclude outside air and light.

To get rid of moles I have found nothing better than ball potash. Pulverize potash and make small openings in their run-ways, which are easily located; drop a teaspoonful of potash and cover with a small flat stone or board to exclude light. This should be done at several places as seen fit. Ball potash is very caustic and must be handled with care; it is sure death to moles.

To prevent injury to a flower bed: A row of bricks set around a flower bed or boards extending a few inches in the ground, will prevent moles, even in the dryest weather.

Cut worms can be poisoned. Put a teaspoonful of Paris green or London purple in two gallons of water and sprinkle until thoroughly wet, fine grass, such as fescue, red top, etc. Place close around cabbage and other vegetables. Cut worms cut off plants close to the ground and can't be poisoned by spraying, like other insects that fed on the leaves.

Wrapping the stems of cabbage and other plants with paper before or after setting the plants is effective. The paper should extend about one inch in the ground and more above the surface, a good quality of newspaper will do for wrapping stems of plants.

Cut worms can be destroyed by killing the mother moths when they have wings and fly. Put in a shallow tin pan sorghum molasses, add enough water to make it thin enough for them to sink in. Again the moths can be captured with lamp light. A few years ago I set small tin lamps in which burned coal oil and set them in tin pans in which I put two inches of water and a spoonful of coal oil. Moths, millers and bugs would dive to the light, get crippled, fall in the pan and get killed. I was unable to distinguish the injurious from the beneficial and therefore gave up the job.

It should be remembered that moles mostly feed upon cut worms and other insects. Moles seldom molest ground clean of worms and insects.

Land plowed in late fall after ground freezes or during winter when ground is not too hard frozen, will destroy many insects and weed seeds. My present garden is more than twice as long as wide, thus more horse culture and less hoeing. Plow garden late in fall or early winter or during winter when ground is not frozen. Plant on one side in long rows all that is to remain for years, which also can be cultivated with one horse, such as rhubarb, asparagus, strawberries, flowers, sage, horse radish and currants. Other bush fruit that grow higher, such as gooseberries, raspberries, blackberries, Juneberries and grapes, planted in long rows, can be cultivated with one horse; thus little hoeing is required.

JACOB FAITH.

Vernon County, Mo.

To Get Rid of Gophers.—A man who is bothered with gophers should purchase a number of single spring steel traps, put them in the hands of boys, instructing them to search for gopher mounds and gig with a spade in the mound the same as for a post hole, watching for the gopher's tunnel and when found dig down sufficient to set the trap below the bottom of the tunnel, stake the chain to the trap, lay boards over the hole dug with spade and cover boards complete so as to shut out all light from below, taking care that no loose dirt sieves through onto the trap, and the first time Mr. Gopher comes along he is caught. If he sees any light he will bring dirt to shut it out and will more than likely fill up the trap and pass on. Offer a liberal reward for gophers captured on one's premises and soon the gopher family will be numbered with the past.—W. A. Patton.

Cover Crops for Nebraska.

Before the meeting of the Society for Horticultural Science at St. Louis, Prof. Emerson of the Nebraska Experiment Station spoke of the effects of cover crops on soil moisture and soil temperature, says Country Gentleman. He said cover crops prevent rapid freezing and thawing of the soil, with consequent increased killing of roots. They also dry out the soil in the fall by withdrawing water from it, and hence fruit trees grown on the same soil are matured earlier in the fall and consequently rendered hardier. The fundamental effects of cover crops on soil moisture are (1) that they reduce it by drawing water from the soil, (2) they conserve it by preventing evaporation, and (3) may sometimes add to it slightly by adding to its humus content. The effect on soil temperature is a result of the effect on soil moisture, for the greater the quantity of water in the soil, the more slowly does it change in temperature, and the changes are less extreme. Cover crops are also valuable in that they hold a covering of snow on the ground. For this purpose crops which do not mat down are better than those which do. Nebraska conditions require tender cover crops, such as millet, which are killed down by the first frost. They are thereby prevented from withdrawing moisture from the soil late in the fall.

Death of Two Fruit-Growers.

Readers of The Fruit-Grower will remember a number of very interesting articles which were contributed from time to time by A. E. Morlan, Dallison, W. Va. We have received a letter from Mrs. Morlan stating that her husband died last summer, and that at the time of his death he was preparing an article for The Fruit-Grower. Mrs. Morlan asks that we make mention of the death of her husband, because of the fact that she receives a great many letters addressed to her late husband from Fruit-Grower readers, and she is unable to answer all of them.

We had never met Mr. Morlan, but frequently received the most encouraging letters from him, and frequently he sent a new subscriber. He was a good fruit-grower, from all we can learn, and will be missed.

We feel that we ought to refer to the death of another Fruit-Grower reader, Mr. W. S. Martin of DeKalb, Mo. Mr. Martin and his wife were killed in a railway wreck near Topeka, Kan., and their young daughter severely injured. Mr. Martin was a good apple grower. At the meeting of the Missouri Horticultural Society at St. Joseph, in 1901, Mr. Martin had some excellent apples on exhibition, and samples of his .Ben Davis were chosen by Prof. John T. Stinson from which the latter said he would have paintings made, as being perfect specimens of this variety. They were certainly very fine. Mr Martin had a fair crop of fruit last season, and was on his way to visit a brother when the accident occurred. We knew Mr. Martin personally, and he was a most estimable man.

How to Grow Navy Beans.

C. B. L., Logan, Mo., in the January number, want to know how to grow navy beans. Select a moderately poor well-drained piece of land (I have iot found any too poor). Plow same as for corn early in spring, harrow, stir or cultivate anyway that is convenient until the 20th of June for north Missouri. Procure good seeds; there are several good strains. Don't plant those offered in grocery stores. Mark off rows three feet apart and plant fifteen inches apart in rows, two beans in a hill; cover light; one inch in about right. They come up quick if soil is moist. If dry step on hill. When fairly up start the cultivator and follow with hoe, piling dirt up around plants, covering all weeds near them. Cultivate until they begin to form blossoms, then stop. The crop is made. Never work beans of any kind when plants or ground are wet. The reason for planting the 20th of June is to have crop ripen uniformly at the time of killing frost. If planted too early many will ripen and go to waste.

When frost has well killed the vines they must be pulled and thrown in windrows to dry. Then thrash with a thrashing machine, if a large crop is grown. If a small one, then lay down a sheet or wagon cover and whip out with a stick; put in a box or barrel in a dry place (dirt, trash and all), until a day in November when there is a high wind. Then spread a sheet; let the beans fall on it and the wind will carry the trash and dirt away. In winter, when there is leisure, take a handful at a time, pick out all remaining trash and faulty beans, and they are ready for market. I have found them profitable even in a small way.

Albany, Mo. J. W. TURNER.

Large Strawberries in Tennessee.

Mr. Wm. Masterson, Knoxville, Tenn., writes us that a berry which goes by the name of Dewey in that section has produced berries so large that six of them filled a quart box. We wrote to ask if the berries filled this measure because of their large size or because they were so misshappen that they could not be placed in the box to advantage, and Mr. Masterson says it was on account of the size of the berries. The large berries sold at 25 cents a quart, when best Bubach and Gandy were bringing about half that price. The entire crop holds up well, Mr. Masterson says, and the variety is being largely planted in that section. No plants seem to be available, and while it may not prove a success as an all-round variety, for fancy trade he believes it will be a success.

Missouri Valley Seed Co., St. Joseph, Mo., general Western distributors for Clark's Cutaway Harrows. See page 20.

"I raise fine fruit and would not be without the Fruit-Grower. Every number is worth a year's subscription." —Zack T. Rupe, Centerville, Iowa.

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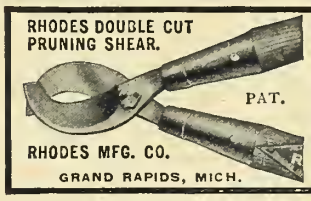

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Jacksonian Opt. College, Dept. 2053, Jackson, Mich

Orcharding Under Irrigation

This subject of irrigation has grown upon Nebraska people to a surprising degree. From a small beginning in an experimental way it has expanded until now there are within the state some 2,500 miles of canals, irrigating about one million acres of land. The Platte river alone supplies about 1,200 miles of canals, watering 560,000 acres. In a single year, 1903, applications were filed for permits to appropriate water for 100 miles of new canals, irrigating 40,000 acres, and plans were filed for power plants to cost $8,000,000.

This industry has just begun to grow. No one can prophesy the magnitude of its importance when it shall have reached maturity.

Hortlculture goes hand in hand with agriculture; and the development of orchards in the irrigated sections of Nebraska has been no less remarkable than the progress of agriculture. Fruit trees and small fruits are making homes homelike today, where once it was thought impossible to grow them. Of such importance does the homemaker consider his orchard and fruit garden that in many cases he furnishes special irrigation for them, trusting to Nature to provide for his farm crops.

Irrigation From Reservoirs.

One method is to irrigate from reservoirs supplied by power plants, such as windmills or gasoline engines. Both are now manufactured with such cheapness and power as to be practicable where water does not have to be lifted more than 25 or 30 feet. There are many valleys in Nebraska where an abundant supply can be found at this depth.

It has not been found best to irrigate directly from the windmill. Such a process requires almost continual attention and the evaporation is excessive while watering from so small a stream.

Any farmer can scrape out a reservoir holding from 2,000 to 5,000 barrels. By tramping and puddling the wet surface of the banks and bottom with horses or cattle he can guard against seepage. Into this reservoir the windmill can pump all night without attention. From it a head of water can be obtained of sufficient size and force to irrigate quickly and effectively.

Dan Myers of Sargent, has his reservoir stocked with fish, and has a sharp demand for all he can furnish at 15 cents per pound.

By the use of a reservoir any farmer in the West can maintain at least a fruit and vegetable garden at moderate expense. W. H. Kortz of Julesburg, Colo., using this method picked 146 quarts of strawberries from a measured plot 25 feet square which also contained four cherry trees.

An orchard near Columbus was irrigated this way during an exceptionally trying September dust storm. All the trees supplied with water held their fruit; but the few outlying ones that could not be reached, dropped nearly all.

Ditch Irrigation.

While irrigation from ditches or canals is the form most extensively practiced, it is so expensive that the crops raised should be those that will sell for more than ordinary crop values. This leads naturally to truck gardening and orcharding.

Of the 49,000,000 acres within the boundaries of Nebraska, 3,000,000 have been found by surveys to be available for ditch irrigation when the waters of the streams are properly utilized.

The examples of successful orcharding under this form of irrigation are so many that perhaps only a few instances that have come under our own observation need be known.

In one orchard near Sutherland, 317 miles west of Omaha, plum trees five years planted, produced a bushel of fruit. Peach trees four years planted gave two bushels per tree. Missouri Pippin apple trees yielded a bushel and three pecks the fifth season after planting.

One orchardist near North Platte grew 8,000 quarts of strawberries last summer. Some parts of his plantation were from five to eight years old, showing that under irrigation, plants produce fruit for a longer term of years than under natural rainfall.

In Loveland, Colo., I saw a two-acre raspberry plat that had built a comfortable home for its owner; $1,600 worth of fruit was sold from the two acres in one season.

In Scotts Bluffs County the orchard of Ed Scriven, twenty miles from the Wyoming line, is making a record which should encourage western fruit growers. From single apple trees he sold last year $10 worth of fruit. The fruit of one Siberian brought $8. A Wolf plum tree, five years planted, yielded two bushels of choice plums, and a German prune the same age gave a bushel. Cherries, gooseberries and currants are a success there and grapes are grown by covering them in the winter.

Mechanical Sub-Irrigation.

Twenty-five years ago Prof. Harvey Culbertson, who had charge of horticulture at the University of Nebraska gave a great deal of attention to mechanical sub-irrigation, produced by laying a net work of drain tiles under the ground, to be flushed with water from the surface. It was urged that the water so applied would not be depleted by evaporation in the sun and wind and that every drop would perform its full duty.

About that time A. J. Sawyer of Lincoln, installed this system under his rose garden and floral designs. The tiles were flushed at night with a hose. In the morning the surface of the ground would be found damp from the rising moisture which had thoroughly permeated the ground. The results were apparent in the wonderfully brilliant floral effects.

The expense of this method, however, is such as to limit it to ornamental grounds and the growing of such vegetables as will bear the expense of costly production.

Without doubt the best form of all is the natural sub-irrigation found beneath the valley lands of the Platte, Republican and Loup rivers. This process is carried on entirely by Nature. Like most of her methods it is the best obtainable.

In June, when the rivers reach their highest, water rises under the valley lands within three to six feet of the surface. This furnishes an abundant supply of moisture by upward seepage. the best of all irrigation, during the growing season. It covers the fruiting season of small fruits, enabling them to produce fruit of large size.

Later in the season when the rivers are lower, the waters recede, allowing the newly made growth to ripen.

In October, after the season for canal irrigation in Colorado and far western Nebraska is past, the rivers rise again, and the sub-surface moisture increases supporting the trees and plants through the winter.

What method could be devised by human-ingenuity superior to this? For both horticultural and agricultural purposes these lands are among the most valuable in the state.

The advantages of this natural system of irrigation are apparent. Any one who has ever done surface irrigation knows that it not only required a surprising amount of time, but it is also hard work. Laying aside the fact that water cannot always be obtained from canals when desired; surface irrigation always crusts the ground and necessitates the most careful after culture.

Longevity and Productiveness.

Orchards grown on sub-irrigated lands seem to live longer than others by reason of proper winter conditions. The Blackburn orchard, fourteen miles from Kearney, on land six to eight feet above water level, is twenty years of age and still producing fine crops of fruit. In 1902, 604 bushels of the crop sold for $489. In addition three families were supplied with 100 bushels more, making a total yield of about 700 bushels. This from a little less than one acre.

Peach trees are supposed to be short lived; but trees twenty-three to twenty-six years old are still living near Lowell on sub-irrigated land, and bore fruit last season despite the sleet storm. Jonathan apples of large size and most brilliant coloring are being grown on land of this kind, six miles south of Kearney.

Since the supply of moisture is unlimited and never failing these lands are especially adapted to the production of small fruits. Ninety to ninety-five per cent of the composition of raspberries, strawberries, blackberries, currants and gooseberries is water. It is lack of moisture that dwarfs fruit. If the plant can fill its berries with an abundance of water while ripening, the fruit will be large, attractive, and salable at high prices.

Fruit trees in central and western Nebraska under irrigation commence bearing at an earlier age than those in the eastern part of the state. This is not the result of irrigation alone, but because of atmospheric conditions.

The evaporation of water from a given surface in one year in eastern Nebraska is 30 inches. Going westward the evaporation increases, until in the drier atmosphere of western Nebraska the annual evaporation from the same water surface is 60 inches. This condition acts upon trees in a peculiar way; checking excessive growth and causing the formation of fruit buds.

When the trees begin bearing, the abundant water supply supports it while fruiting freely, and at the same time enables it to set a full crop of fruit buds for the ensuing year. Trees subject to these conditions therefore, come into bearing earlier than those grown under natural rainfall, and fruit with greater regularity.

The outlook for orcharding under irrigation is bright indeed and is keeping pace with the growth of irrigation itself. The next fifteen years will see the development of important orchard interests in the irrigated sections of the state; especially in the Platte river valley.

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REFUTED

The Committee selected by the Mo. Horticultural Society took 18 months to conclude that Black Ben and Gano are identical, although THEY COULD NOT FIND ANY EVIDENCE SHOWING THAT THEY WERE EVEN OF THE SAME ORIGIN.

The Committee Selected by the Ark. Horticultural Society, men who have known Black Ben for a decade or more, not only pronounced it a SEPARATE and DISTINCT variety, but found evidence that proved beyond doubt that Black Ben and Gano were of DIFFERENT ORIGIN.

We quote below from letters of 46 orchardists who have fruited Black Ben and Gano side by side, or carefully compared them as grown under similar conditions, ALL OF WHOM AGREE WITH THE ARK. COMMITTEE.

We have many more such letters—**we do not ask $1.00, nor even a 2c. stamp** for copies, but will send FREE TO ALL WHO ASK; also a copy of the Decision of the Ark. Hort. Society and evidence submitted with the report.—STARK BRO'S, Louisiana, Mo.

Hon. Parker Earle Notes Contrast in Detail.—Package of apples from Mr. Femmons of Cal. has arrived and I am glad to be able to compare Black Ben Davis and Gano **grown in the same orchard.** Standing on my table in front of me as I write—four of each kind—the whole suggestion is one of **contrast, NOT** of resemblance. We will note contrast in detail.

First, the Form. The Black Bens are broader at the base, like the Ben Davis, and conical in the same way, but noticeably different in the modeling of the basin. The Ganos have a very broad basin, just as unlike Black Ben as it is unlike Ben Davis. The rim of the basin in Gano is more serrated, is rougher and coarser looking. This sculpturing is the most noticeable characteristic of the variety, and this feature, taken with the lack of color and very rough skin, and very large, open, coarse calyx, makes the row of Ganos quite unattractive. I take a Gano and a Black Ben, which, standing on their bases, are exactly the same height, and the Black Ben will certainly weigh 20% more than the Gano; and all of the specimens of both kinds are built the same way. The wrinkling about the basin in the Gano extends down over the sides of the apple, giving it a muscular look, like the tendons on the back of your hand. The Black Ben has no such appearance.

Second, the Color. The four Black Bens all have an **ABSOLUTELY SOLID DARK CRIMSON COLOR** that shades down to a very light red where a leaf or a limb has covered it. This shading down produces a charming color effect; and there is not a suggestion of a stripe in any of the four apples. And the dots in the Black Bens are so small and so much under the skin, that at a distance of some two feet from the eye they are not discernible at all and there is no more appearance of dotting than in a piece of red velvet. The dots in the Gano are large, irregular, prominent, and clearly distinguishable across a five foot table. **The color in these Ganos is NOT solid.** Each one of the four **shows stripes,** more or less subdued. They are not as distinct as in Ben Davis, in which you can see the stripes almost across the street, but they are a perfectly visible undertone in the color. The Black Bens are **red all over** except in the cavity, which is russeted a little over half way down to the level of the base. In the basin they are completely colored clear to the calyx. The Ganos are not colored red at all in the basin. The greenish yellow, with touches of bronze, fills the whole basin of the Gano and extends out over the apex so that when standing apex down on the table no red will touch the cloth. This is uniformly so with all the specimens I have, while the full red color of the Black Ben basins is equally marked. This feature alone, as the two rows stand before me, is so significant a difference that it appears to me sufficient to settle the controversy.

Third, the Skin. The skin of Black Ben is remarkably smooth and soft. It feels like fine velvet. The skin of these Ganos is rough, like a poorly planed board. It is pimply, like some faces you have seen. The dots can be felt as well as seen.

Fourth, the Stem. All of these eight apples have stems. The stems of the Gano are distinctly longer than those of Black Ben. The Gano stem extends above the level of the base of the apple where standing apex down. In each of the four apples, standing this way, I look across the base and see the stem standing about one-eighth of an inch in sight. Looking across the four Black Bens the same way and no stem is visible. This is not a feature of great importance like shape, color and smoothness, but is **a feature that marks a difference.** In packing apples the short stems are not in the way, however, which is favorable to short stems.

Fifth, the Seeds and Flesh. The seeds of these Ganos are longer, flatter and darker colored than those of Black Ben. This has no importance except as it helps identification. But the flesh is important. There are many people who consider the eating quality of a fruit! In this respect the Black Ben in these specimens before me has as much advantage as it has in color. The flesh in both resemble Ben Davis in appearance when cut. All have a rather coarse fibrous look. But in this case the Black Ben has the most melting flesh in the mouth, the most juice, the most aroma, **the best flavor**—much the best.

I will say nothing of tree, twig or leaves. Leaves are not in season, and I cannot easily compare the trees. I have no Gano tree. I wish I had **one**—for comparison. **I have a thousand Black Ben. I WISH I HAD TEN THOUSAND.**

As these two varieties of apples stand before me, the contrast grows. One is beautiful as apples are ever grown to be since Eden days—noble, royal, magnificent in beauty. The other has a plebian look in comparison. I have seen Gano handsomer in Roswell orchards; but I have never seen Black Ben in Roswell orchards. It may be as much better here, when it fruits here, as the Gano here is better than it is in the California foothills, and as all other kinds of apple are better here than they are elsewhere. But I believe that something of the differences I have noted will be found between these two apples wherever grown, the world around. And I feel sure that if the Black Ben shall grow in all good apple countries to nearly equal these California specimens of last year and this year—then the apple grower has in his reach an apple that **for pure splendor of appearance and fruit producing capacity has no parallel** in American orchards.—PARKER EARLE, Roswell, N. M., Jan. 17 1904.

PROF. H. E. VAN DEMAN, Ex-U. S. Pomologist, Washington, D. C., Dec. 17, 1903.—The report of the committee declaring Black Ben Davis and Gano identical is a great surprise. This report does not alter my opinion in the least, as I saw the trees in bearing in Ark. Had I not seen them it would have weight. My own belief, from seeing the two kinds in bearing in the same vicinity, was that Black Ben Davis was as much redder than Gano as the latter is redder than Ben Davis, and this will continue to be my opinion until I see reason to change it.

Ninety Acres of Black Ben.—I planted 600 B. B. Davis and 96 Champion in 1898. They began bearing in 1900; planted 22 acres more B. B. D. in 1899, 30 acres in 1900, 8 acres in 1902, and 20 acres in 1903; making in all to date 90 acres Black Ben and 12 acres Champion and shall continue planting these two varieties until my 150 acres is all set, notwithstanding the report of the committee of the Mo. Hort. Society that B. B. Davis and Gano are one and the same. **NO! they are not the same;** you cannot find a single man in all this section who knows anything of the two varieties that calls them the same. The growth of the trees is different: B. B. D. are more upright, foliage greener, bark of tree darker, more vigorous grower, stands drouth better than any other tree that I ever saw; apples deeper red, more uniform in size and color, no streaks and as smooth as a piece of glass. Gano is also of reddish color, but is not uniform; light streaks can be seen on most of the best specimens and many apples on the same tree are very poorly colored, but little better in color than old Ben Davis. From my knowledge of the two varieties I say to all **to plant Black Ben every time** and all the time in preference to Gano. B. B. D. is much the firmer apple and from my experience is the best keeper I ever saw; I put them in common dirt cellar with winesap, old B. D., Shockley and Limbertwig, and Black Ben kept sound and good until the 24th of the following July, while all other varieties rotted by the 15th of May.—S. T. COLE, Wash. Co., Ark., Feb., '04.

A Decided Improvement.—We are growing B. B. Davis, Gano and common Ben Davis. Gano and B. B. Davis had enough fruit to convince me there is a **decided difference.** Gano is not as handsome nor as large an apple, neither do the trees grow alike. In our estimation B. B. Davis is a decided improvement on either Ben Davis or Gano.—DEGENHART BROS., Story Co., Iowa, Feb. 8, 1904.

Out-growing Old Ben.—Spring 1902 I bought 1000 grafts, five hundred Ben Davis and 500 Black B. D. I set them in orchard 24x24; they made a fine growth, but the Black Ben are fifty per cent the best trees; they look like they might have apples this year. If buying again I would get all Black B. D.—J. W. MAIN, Benton Co., Ark., Feb. 8, 1904.

Will Plant 80% Black Ben.—I have B. B. Davis and Gano growing in the same orchard. Black Ben trees thrifty, more so than Ben Davis or Gano; fruit very dark, **never striped;** 70% of my Gano were striped; had a fair crop of Black Ben in 1903 when Gano and Ben Davis were a complete failure. I am convinced that Gano and B. B. Davis are **two distinct and separate varieties** and Black Ben far excels. Want to plant 300 trees this spring; shall plant only B. B. D. and Jonathan, and **80% will be Black Ben.** —WM. STOPHER, Floyd Co., Ind., Jan. 28, 1904.

Wants More Black Ben.—Have bought trees annually for 10 years; have a block of Ben Davis bought fall 1871—**all I want of that sort.** I have Gano and Black Ben Davis I got of you. I note in the Hort. journals particularly in Western Fruit Grower (the best all 'round horticultural paper in the U. S.) many opinions relative to the two apples (Gano and Black Ben Davis); with me **they are not identical;** Black Ben is as much redder than Gano as the latter is redder than Ben Davis; in flavor B. B. Davis is far better than Gano, while Ben Davis will not be considered. Please quote prices on Black B. Davis for spring, 1904.—WM. C. BABCOCK, Berrien Co., Mich., Jan. 26, 1904.

Why This Controversy? Irresponsible Competitors Could Answer.—Why this controversy about Black Ben Davis and Gano being the same? They are considered very dissimilar here, so much so that **Ganos are being replaced by B. B. D.** We consider Black Ben the **best market variety we have.** I sold what I had to World's Fair Committee to be shipped to St. Louis; 4 or 5 car loads have gone from here so far; look them up. I consider **Delicious** the best flavored apple grown here, had two apples on my 30 trees, only 3-yrs. planted.—J. B. HOLMS, Chelan Co., Wash., Feb. , 1904.

Planted Black Ben Davis when I lived in Mo. Was fully convinced long ago that it was not identical with Gano.—L. C. EVANS, Franklin Co., Nebr., Feb. 4, 1904.

Side by Side.—Have been reading newspapers on Black Ben Davis and Gano controversy; I have barreled both and when you see the two varieties **side by side** there is **plenty of difference.**—L. G. VANHORN, Montgomery Co., Kans., Feb. 2, 1904.

Universal Opinion of ORCHARDISTS.—My trees have borne hardly enough for me to specify the difference between Black Ben and Gano. I am of the opinion that there is **quite a difference.** I will watch these apples closely—have them growing almost side by side. Am pleased with your trees, they are healthy and making a good growth every year.—R. L. MOORE, Cooper Co., Mo., Jan. 30, 1904.

No trouble to tell Black Ben Davis and Gano apart. In the orchard the **trees are different,** have a **different habit of growing.** Black Ben Davis is a **firmer, heavier** apple, far **better** than either Gano or old Ben. I will keep on planting Black Ben, growing a few Gano by the side so any one can see the difference.—HENRY GRABIN, Scott Co., Ark., Feb. 2, '04.

Sorry Didn't Plant More Black Ben.—Out of the 500 trees purchased from you 200 were Black Ben Davis. After keeping a close watch on both this variety and Gano, I am only sorry that I did not plant more Black Ben. Both varieties were exhibited at our state fair last fall; **could tell the two apart without any trouble whatever.** Everyone here is convinced, no one claiming them to be the same.—N. H. ENDSLEY, Fremont Co., Colo.

Black Ben Davis I consider a very different Apple from Gano.—My trees are young, but there were enough of both B. B. D. and Gano to tell the difference between them. I planted the trees at the same time in the same orchard, side by side, same cultivation. Black Ben out-grew Gano about one-third. The fruit was decidedly different and I consider **Black Ben a much better apple.**—ABEL WASHBURN, Kingfisher Co., Okla., Jan. 29, 1904.

Not a Gano.—Was one of the first in Wyandotte Co., to plant your new fruit extensively. Have had Black Ben in bearing. **It is not a Gano.** I find it **far superior** to Gano. Hope to fruit Champion, Delicious and Commerce this season.—JOHN SPAETH, Wy. Co., Kan., Jan. 27, '04

A Competent Judge.—I haven't any Black Ben Davis on my own farm in bearing, but I have frequently acted as judge and superintendent at Expositions and always found and recognized Black Ben as a distinct variety of merit.—R. G. RAU, Sup't of Parks, St. Joseph, Mo., Jan. 26, '04.

Anyone Can See the Difference.—Black Ben Davis is not the same as Gano. I have both growing in my orchard and Black Ben is much larger, and of a darker red. Anyone that has good eyes can see the difference.—JAS. ADKINS, Reynolds Co., Mo., Feb. 2, 1904.

Illegally Selling Black Ben—Delivering Gano.—Concerning the discussion over Black Ben Davis and Gano, I can say nothing only that my B. B. D. are **dark red, without any light coloring** whatever. My opinion is that some **unprincipled tree peddlers** have been selling B. B. D. and delivering Gano, as there are such schemes all over the world. There was a man about Whiting last year claiming to sell B. B. D. and he asked $1.00 each; there seems to be no end to this lying and swindling.—HENRY KRATZ, Monona Co., Iowa, Feb. 2, 1904.

[**Note.**—It is these unprincipled cheats that are reaping the benefit, the confiding planters that are being swindled, thru the efforts of those most active in declaring, regardless of **facts,** that Black Ben and Gano are identical.]

It is Easy to see the difference between Black Ben Davis and Gano as both are in bearing in our section. Black Ben D. is a decidedly **deeper red** and a better apple.—W. A. SPAULDING, Greene Co., Ill., Feb. 3, 1904.

Colors More Like Jonathan.—I have Black Ben fruiting, also Gano in same orchard and there is a wide difference between the two apples. Black Ben colors up more like Jonathan and is a **much finer apple than Gano.**—G. DEVER, Shelby Co., Ill., Feb. 8, 1904.

No Reason for Confounding.—Trees from you the best I ever planted; am much pleased with them. Have been familiar with Black Ben Davis for 5 years and never saw any reason for confounding it with Ben Davis, Red Ben Davis or Gano, none of which are the shape, color or size of Black Ben. Unscrupulous agents have sold Gano here for Black Ben Davis claiming them identical, but the difference is very apparent when they fruit. Am a great lover of Delicious, Champion and Senator; they bear here at 3 or 4 years after planting and **keep right on bearing** every year, and sell at $2.00 a box (of 40 lbs.)—E. B. PORTER, Douglas Co., Wash., Feb. 2, 1904.

Won't Give It Up.—I see committee of the Mo. Hort. Society pronounced Black Ben and Gano the same. I **won't give it up yet;** the wood, the leaves, the color of leaves on my trees, are **distinctly different from Gano.** Next year I will have home grown Black Ben, Commerce and Gold plum; Black Ben especially promises to bloom heavily.—JOSEPH GERARDI, Jersey Co., Ills., Jan. 18, 1904.

Darker in Color.—We had some very good specimens of Black Ben in 1902. These when compared with Gano appeared to be darker in color and wholly different from old Ben D. Delicious and Champion are making a fine growth, but not yet in bearing.—M. J. GRAHAM, Dallas Co., Ia., Jan. 25, 1904.

Bearing 4 Years from Bud.—In '98 I ordered 500 Black Ben D., Champion and Commerce; they are the best all 'round trees in the country. Black Ben and Champion particularly are very hard to beat in shape and size. I had no fruit last year,—blossoms all frozen. In 1902 my Black Ben, four years from bud, bore from two to ten apples to a tree; the apples were **larger** and **much darker color** than Gano. —EDW. KLEMM, Franklin Co., Mo., Feb. 1, 1904.

Black Ben Always Wins in Competition.—I was judge of fruit 3 years at our State Fair and saw Black Ben Davis in 1902 and 1903 in competition with Gano and truly say that there was **no comparison** whatever; Black Ben was **larger** and more **highly colored,** altogether a **more beautiful** apple than Gano.—JOS. LANNIN, Yakima Co., Wash., Feb. 1, 1904.

Congratulations.—Regarding the decision of the Ark. Hort. Society I think as I always have thought that Gano and Black B. Davis are **entirely different apples.** Congratulate you on your victory. I have B. B. Davis and Gano top grafted on same tree; will bear next year. That's a test. It's a question that interests every man in N. W. Ark. Yours for more and **better** fruit.—R. I. JAMES, Wash. Co., Ark., Feb. 4, '04.

Solid Dark Red.—Spring of 1898 I bought 10 trees of Black Ben, one year budded, and in 1902, only 4 years from planting, there was a dozen or two apples on each. They were **solid dark red color,** about the size of average specimens of Ben Davis. I know nothing of Gano. I have 49 different varieties in my orchards of about 8 acres; if they prove true when they bear, although I received apple trees labeled "Early Richmond" for cherry trees from ..... nurseries. My orchards are more in line of experiment than anything else.—N. O. PRIM, Menard Co., Ills., Jan. 26, '04.

Can't Stuff the People Who Grow Them.—As to Black Ben Davis, compared with Gano, there is no comparison between them, either in tree or fruit. As I have both in bearing, anyone can readily see the distinction. **Black Ben is far superior to Gano,** and should have some other name; the superiority over Ben Davis or Gano should be suggestive of something better. Some may decide they are one and the same, but **you can't stuff that down people that grow them.** Don't want any more Gano nor Red Ben Davis, but **will plant more Black Ben Davis,** because it is FAR SUPERIOR. —H. T. HAGLER, Macoupin Co., Ill., Feb. 2, 1904.

Color Blindness or Self Interest?—Sampled a Black Ben apple here at the Co. Horticultural Society's rooms and must say that I thought it very different from Gano or Ben Davis. Parties stating they are the same must be **color blind.** The future will fully establish the value of Black Ben Davis.—E. F. LEIGHTY, Buchanan Co., Mo., Jan. 29, 1904.

Three-Year Trees Bearing.—Have a few Black Ben which bore last season. Trees planted **3 years,** some bore as much as a **box of fancy fruit,** some of which will appear at St. Louis next summer. There is no question but what B. B. Davis is going to be a money-maker everywhere. Had one box of **Delicious,** which were distributed among my neighbors who pronounced them the **best eating apple** they ever saw or tasted. Delicious, Black Ben and Stayman Winesap have proved the best and earliest bearers—all **ahead of Mo. Pippin.**—A. C. JONES, Chelan Co., Wash., Jan. 28, 1904.

Best Keeper on the Place.—Out of a small family orchard of 200 bearing trees we have 4 or 5 Black Ben and 15 or 16 Ben Davis. We have no Gano. Last season was a bad one for fruit. The season before however we kept a few apples 'til middle of June, among them Black Ben Davis and Mo. Pippin. **Black Ben Davis were the last to show decay.** From what experience I have had, covering about eight years, **Black Ben is the best keeper** on the place. Seventy-five per cent of our trees came from your place. —J. RAY GILL, Callaway Co., Mo., Feb. 1, 1904.

Will Sell Better Than Gano.—Our B. B. Davis trees bore last season. They are not the same as Gano, Red Ben Davis or old Ben, being **larger** than Gano or Red Ben, **darker** than either and more uniform in size; they keep equally as well and **will sell better.**—D. W. WRIGHT, Chelan Co., Wash., Jan. 26, 1904.

A Strong, Hardy Tree.—The May freeze last year killed my crop, therefore cannot speak of the fruit of Black B. D.; the tree promiscs to be very strong and hardy. I have 40 acres of Stark trees in one block, said to be the nicest orchard in Polk Co., consisting of Jonathan, Ben Davis, Gano, Black Ben, Senator, Commerce, Springdale, Grimes Golden.—S. A. TROWBRIDGE, Polk Co., Iowa, Jan. 27. 1904.

My Experience and Observation shows that there is a **marked difference** between Gano and Black Ben Davis. The B. B. D. is a more certain bearer, better flavored, better keeper.—H. P. GREENE, Washington Co., Ark., Feb. 8, '04.

Like Jonathan in Appearance.—I pronounce B. B. Davis one of the most perfectly colored dark red apples I have seen. In appearance they are like Jonathan, same form, but almost twice the size.—WILLIAM RICKE, Montgomery Co., Ill., Feb. 2, 1904.

Handsome as the Picture.—Black Ben bore this year for the first time; trees planted 5 years averaged one box (48 pounds) to the tree. Every apple **perfect;** would grade as **fancy fruit** —fully as handsome as your picture.—DR. E. H. LATHAM, Okanogan Co., Wash., Feb., 1904.

Have Both Gano and Black B. Davis trees; can tell them apart far as I can see them. But all of my trees are too young to bear.—W. A. BERRY, Cowlitz Co., Wash., Jan. 20, 1904.

Leader of All Commercial Apples.—After seeing B. B. Davis fruited in orchard of Wm. Stopher I am convinced that **they excel all other commercial apples.** They are darker, freer from stripes and knots than any Gano I ever saw. I want to plant 400 trees this season; **all will be B. B. Davis.**—JACOB NIEST, Floyd Co., Ind., Feb. 3, 1904.

Forty Cents for Ben Davis—$1.00 FOR BLACK BEN.—Last fall I visited Jas. Moots. He has 5 or 6 Black Ben Davis trees in bearing. The apples were fine. Said he sold the previous crop in Kirksville, Mo., for **$1.00 per bushel** when he could only get **40¢ for his Ben Davis.**—T. C. BYRN, Schuyler Co., Mo., Feb. 4, 1904.

Black Ben Davis at our County Fair last fall were very handsome and certainly different from old Ben Davis or Gano.—H. P. HANSEN, Chelan Co., Wash., Jan. 27, 1904.

First Prize for Black Ben.—I received a letter from a friend in Manchester, Conn., where I was living when I first bought trees from you, acknowledging my letter, in which I told him of my good opinion of the Black Ben Davis apple. He says: "You will remember giving me, several years ago, some scions of Black Ben Davis apple and that I grafted them into bearing trees. Last fall I exhibited some of the apples from those grafts and took **first prize** at the fair at Rockville, Conn., and at the meeting of the Conn. Pomological Soc."—EDW. C. SHERMAN, Long Island, N. Y.

Perfectly Sound in May.—I saw some Black Ben apples grown in the Columbia river valley. They were very dark red, even color and nice even shape and were as beautiful an apple as I ever saw; I saw them in May and they were perfectly sound.—L. WHAM, Okanogan Co., Wash., Jan. 28, 1904.

Well Pleased With Black Ben.—We see in "N. Y. Packer" that the Convention of Ark. Growers declared that there is a difference between Black Ben and Gano, and that the genuine Black Ben Davis is a finer and much better apple. We have quite a large lot of Black Ben Davis trees and are well pleased with the samples procured from them last season.—MCKENZIE & TOWERS, Floyd Co., Ga., Jan. 28, 1904.

The Question Settled.—In view of the controversy going on thru the country over the Black Ben Davis-Gano question, we have published the statement as given by the Arkansas State Horticultural Society. This should certainly settle the question. We are especially gratified in this case because it is virtually a victory for the Stark Bro's N. & O. Co., of Louisiana, Mo.—FARMERS' CALL, Quincy, Ills.

Superior Flavor and Color.—In 1902 our Black Ben Davis trees had their first crop of apples, some bore a peck and they were **superior** both in flavor and color to "old Ben." We do not have any of the Gano, therefore, can't make comparison. Only one other Black Ben tree bearing in our section and the owner of it thinks it one of the best in his orchard. Am well pleased with the growth that Black Ben trees have made, in fact all trees from you.—I. W. HODGES, Jefferson Co., Iowa., Jan. 27, 1904.

Black Ben Davis and Gano—I have them both and find them **distinct varieties.**—G. W. DIMICK, Marion Co., Ore., Jan. 30, 1904.

Peach Prospects.

From a large number of reports collected from all over the state, we find the peach is "injured," "badly injured," "very badly injured," according to location. Through most of North Missouri the crop is gone. Through Central Missouri only in special favored locations, are the prospects even "fair." Most of locations the report is "poor," "very bad." Fully three-fourths of the peach buds are killed in Central Missouri. The other buds, not killed, may possibly hold for a crop, but are likely to shed before maturity. In South Missouri the prospect is little better. Some places report "all gone," others 75 per cent and still others 50 per cent buds killed. Specially favored locations may yet have enough for a fair crop. The eastern part of the state is hurt less than the western.

The peach crop therefore will be less than one-half a full crop, but still there may be enough buds left to give us a small crop in a great many localities. L. A. GOODMAN, Sec'y.

Kansas City, Mo.

Farmington, Mo.—No discoloration of wood. Captain Ede, Alexander, Triumph and Elberta have plenty of live buds. Foster hurt badly; only a few live buds left. Other fruits in good condition.—M. Butterfield.

Argentine, Kan.—Prospects at this date, Feb. 5, indicate that we have enough peach buds left for at least half a crop. Have been unable to find a single live bud on Elberta, and Salway is also badly injured.—C. V. Hoisinger.

Spring Hill, Kan.—Peaches are badly damaged if not all killed in this locality. Other fruit is in good shape, I think.—D. H. Bingham.

Vernon Co., Mo.—On low lands I find no live peach buds. On high locations find about one bud in forty alive. But if these buds mature there will still be about half a crop of peaches. —Jacob Faith.

Mountain Home, Ark.—Our fruit is all right at this date, Feb. 6. A part of this county has produced peaches which weighed 17 to 24 ounces each. Who can beat this?

Buchanan County, Mo.—Peaches are badly injured, those on south hillsides the worst. Some live buds of Crosby, Champion, Greensboro, etc., remain, and there will be a partial crop, if the remaining buds are not killed later.

Falls City, Neb.—Budded peaches are all killed in my orchard; seedlings are all right.—Lewis Rodewald.

Varieties of Strawberries Last Season.

I have the Gandy, Parker Earle, Brandywine, Bubach and Splendid strawberries. My Gandy did not do well last year. The Parker Earle were no good on account of the rust. The Splendid is the best all-round berry. I believe we berry growers will have to either quit growing berries or turn to something else for use as berry boxes and crates, as they keep raising prices on us every year. I have written to a firm in St. Joseph, Missouri and they give the following prices. Boxes, per 1,000, $3.00; crates, per 100, $7.25. Another firm in Kansas City is 25 cents cheaper. These prices are entirely too high. After paying the freight on them, they are quite expensive. After paying for the boxes and crates and the picking and a lot of other necessary expenses, there is not much left, as the prices for berries are not advanced any; rather the reverse. LEWIS RODEWALD.

Falls City, Neb.

(The prices quoted are those which are being made by dealers at Missouri River points, and the claim is made that they will not be any cheaper. Factories report an unusually heavy demand, and in some cases are not accepting any further orders. The situation is not satisfactory, from the standpoint of the growers, but it does not seem that it can be improved at this time.—Editor.)

Preparing Land for Orchards.

I have read with much interest Dr. Whitten's first article on "Orcharding in Missouri." I would respectfully suggest that with a majority of old, corn-cropped and tired lands, in either Missouri or Arkansas, it would require more than one crop of peas plowed under to furnish an adequate amount of not only humus, but nitrogen, etc., to induce healthy plant or tree growth. Thirty to fifty years of corn and shallow plowing cannot be atoned for in one year of best of care.

As to a large stump, or any other size, being in straight rows, don't go crooked; just dynamite them; blow them out and give that tree best place in the orchard. This is being practiced in some places in this state with best results—where they wish to plant the tree, putting a bar down about three feet and explode about one-half stick of dynamite, loosening up the earth, especially when there is a heavy or very firm subsoil.

J. W. McCRACKEN.

Sulphur Springs, Ark.

"Please send me several extra copies of the January number of the Fruit-Grower. I like the paper so much I want to distribute some sample copies among my horticultural friends, and try to induce them to subscribe. I don't want to miss a single copy of the Fruit-Grower so long as I can see to read."—P. A. Norman, Tacoma, Wash. Mr. Norman wishes the Fruit-Grower and its readers a prosperous year, and then sets out to get some new subscribers, and thus bring about this result.

Tree Planting.

The evil consequences of the wholesale destruction of the forests of America have aroused thinking men to the importance of trying to undo some of the mischief. Hence forestry has become a popular study. But we can not enter that field in this brief article. We wish to speak of two phases of tree planting that are important to every citizen of this country.

Planting trees on the farm should be a regular part of each farmer's work and study. A good fruit-bearing tree costs no more time to set out nor room to grow in than a worthless, and often unsightly tree. Every farm should have trees about the yard, and lots, and along the roadway. If a pecan were put every fifty feet, and between each of these two or more pears, apples, plums, or peaches, every family would be supplied with good fruit and the home would be made attractive. This would cost very little, and these trees will grow almost anywhere.

The old time cedar, and elm, and water oak, and poplar, and other worthless trees are occupying too much valuable space. The pecan is about the best shade tree that can be found. At the same time it is a valuable nut and timber tree.

Again, and more important perhaps, the streets of every town, city, and village should be set in the same manner as the farm. The present trees are planted for shade alone. If the tree gives shade and bears fruit both, it is that much better. The argument that the boys would steal the fruit is too trifling to consider seriously. If there were plenty for every one, who would care. Many towns could get revenue sufficient to pay all of their expenses from the shade trees and be prettier than at present.

The educative effect of such tree planting would be very fine. Children would be more honest and truthful, because they would be less tempted. They would be more provident and economical, because they would be taught the value of streets and odd places. The eye would be constantly trained to beauty and utility combined.

Now to make a success of the planting is easy if we go at it right. Take dynamite and blow out the hole and then put some good top earth around the tree and they will grow faster and live longer and bear more fruit than if set in a little hole scooped out of the hard clay.

In order to have the trees bear well, and the fruit of the first quality, use potash freely around their roots. We have seen pecan trees and pear trees and other trees that did not bear much fruit, made to bear abundantly by throwing plenty of soapsuds around their roots. But we can not have soapsuds enough for all of our trees. It was the potash that made them bear and we can get potash cheap in the market and it will pay us to use it. It causes the trees to be healthy and able to resist diseases and insects. The trees being healthy, bloom better and set more fruit, and the fruit is larger and better flavored. The appearance of the fruit and the flavor are matters of great importance, especially to those who sell it.

We hope to see a great improvement in setting trees and in the care of the trees after they are set.

Th beautiful vision of every man sitting under his own vine and fig tree need not be a thing of the imagination, but a living reality over all the land.

JAMES B. HUNNICUTT.

Special Spraying Articles for March Number.

The March issue of the Fruit-Grower will have a number of special articles on the subject of spraying fruit trees for insects and fungous diseases. The season is at hand for this work to be done, and these articles will be especially timely. The March issue will be an exceptionally good one, and no one can afford to miss it.

If any of our readers have had any experience in spraying which they feel will be helpful to fruit-growers generally, we ask them to send brief articles telling of this. We will publish some of them, if at all possible, and are sure they will be interesting and helpful. Send your experience at once for the March issue.

And if your time has expired, or if you are not now a subscriber to the Fruit-Grower, send your subscription today.

"This is the second block of five subscribers I have sent lately. The Fruit-Grower is the only paper, and I will do all I can for it."—T. R. Anderson, Jake Prairie, Mo.

It Costs the Fruit Growers of the United States

From Thirty to Forty Million Dollars a Year to Feed the

Codling Moth.

"Disparene"

IS THE *ONLY* INSECTICIDE THAT WILL DESTROY *BOTH BROODS* OF THIS PEST

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Write Today for Booklet Containing Proofs of This Statement to the Manufacturers

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For 25 cents and a 2c stamp we will send you postpaid, 10 Full Size Packets of the best Northern Grown Flower or Garden Seed it is possible to produce. Any kind or variety you want and add 6 packets of our New Radish, Lettuce, Tomato, Extra Early Cabbage, Watermelon and the best Yellow Corn on earth. Only one lot sent to a customer at this price. Agents wanted.

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in America and Europe have adopted and use exclusively **THE SPRAMOTOR** in their experimental work. **Eighty-two Outfits** are in use by Ontario and Dominion Governments alone. **The Spramotor** has won **over one hundred** Gold Medals and First Awards in the past three years.

Wins a Government Spray Pump Contest.

This is to Certify, *that at the Contest of Spraying apparatus, held at Grimsby, under the auspices of the Board of Control of the Fruit Experimental Station of Ontario, in which there were eleven contestants, the* ***Spramotor,*** *made by the Spramotor Company, was awarded* ***first place.***

H. L. Hutt
Judges.

It any further endorsement were needed it will be found in the superiority of the **Spramotor** itself. It is an **easy, quick and thorough eradicator** of fruit and vine diseases and insect pests. Unequalled in white-washing and painting buildings inside and outside—oil or water paints. We publish an 80 page book, **"A Gold Mine on Your Farm,"** which in addition to formulas, tables, best methods, etc., in spraying, tells about the **Spramotor.** We mail it free. Ask for a copy.

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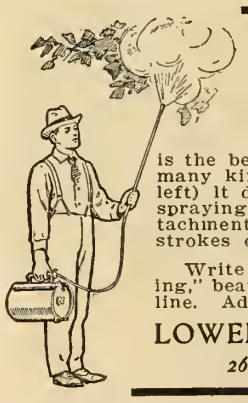

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Capacity unlimited; has a record of 20 acres a day for each man in field—10, 100, 1,000 acres a day only a question of more help in orchard, all same to central station. Light weight, mud or hills no obstacle, continuous operation, no lost time, no pump, no machinery in orchard, use any style nozzles; 1, 10, 100 at once equally efficient. Power stored; 100 pounds pressure always ready. Nozzles can't clog. Outfit will last for years with little or no repairs; most efficient and economical outfit on the market.

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TRADE-MARK CASE

DEVELOPMENTS IN THE CONTROVERSY BETWEEN STARK BRO'S COMPANY AND JAS. B. WILD & BROS.

The Other Side of the Case—Statement by Stark Bro's Co., Showing That Action Was Only Temporarily Dismissed—Controversy Not Wholly a Question of Nomenclature—Claims of Open Infringment—Trade-Mark To Be Protected.

From "National Nurseryman," Feb., '04.

Replying to articles published in the January issue of the National Nurseryman, relating to Black Ben Davis and Gano apples and the trade-mark case brought by Stark Bro's Nurseries & Orchards Co., against James B. Wild & Brothers, Sarcoxie, Mo., the Stark Bro's Company write as follows:

Editor National Nurseryman: We thank you for favor of the 18th inst. We note your prompt disavowal of responsibility for the articles appearing in January number of the National Nurseryman, entitled respectively, "Black Ben Davis and Gano" and "Trade-Mark Case Dismissed." Had you simply printed these articles over the signatures of authors, we would have cared very little, although we might have thought a publication like yours, an official organ, should exercise a more rigid censorship over the matter admitted to its columns. The great injury done us, however, is because you accepted both articles as a matter of news, making the insertion as a reader, following them with editorial comment, thereby giving both the weight of your publication. To be plain, we felt not only indignant, but outraged. However, your prompt acknowledgement of error, your offer to repair so far as lies within your power by explaining in next issue, we accept as satisfactory.

NOT A QUESTION OF NOMENCLATURE

For your information we desire to say that this Black Ben Davis and Gano controversy is not a question of nomenclature; instead it is the outcome of petty jealousy, self-interest and vindictiveness. In an open fight no one fears the result of an issue with such antagonists. These people, however, do not work that way. They prefer rather to remain invisible, working under cover as they have done in your case.

In the conduct of our business our time has been fully employed and we have simply ignored these petty efforts. But they go so far, using publications like yours, using state horticultural societies, and even government departments to gain their end that we think it is high time to call a halt and give the people the facts. In making above statement it is not our intention to impugn the honesty or the motive of either horticultural society, government department or yourselves. It is the means, the questionable methods used to which we refer, and which have been the same in each case. From the same fountain head which furnished you this innocent reader on Black Ben Davis and Gano came the gentle zephyr which blew into Washington City last summer, carrying another subtle suggestion that it would have been possible for Stark Bro's to have picked all the striped apples off the Bain trees before the Missouri committee and Professor Van Deman got there. From the same magical source was exhibited at Edwardsville, Kansas, the sample Black Ben Davis apple which came from the original Black Ben Davis tree, although this same tree had been destroyed years before. Truly this is a great testimonial for the keeping qualities of this variety.

BLACK BEN DAVIS AND GANO DISTINCT

But enough of this except to say we have named but two or three instances; there are many. We are glad your letter distinctly locates the responsibility. We expect to look into that a little later. In your next issue in addition to giving the people the facts in regard to these two articles, we will ask you, in justice to us, also to give them the facts concerning Black Ben Davis and Gano by publishing the report made by the Arkansas State Horticultural Society at Van Buren, Ark., on the 14th of January, 1904. This society at this meeting, feeling an injustice had been done, spoke in no uncertain tones, pronouncing Black Ben Davis to be not only of distinct seedling origin, but a separate and distinct variety from Gano, to which report they append evidence which cannot be controverted. In addition to this report we desire very much that you publish the opinions given by as eminent pomologists as can be found in the United States, horticulturists, orchardists, etc., many of whom first held that varieties were one and the same, but after personal investigation, tests of different character, etc., are now as pronounced in their opinion that they are separate varieties as even Stark Bros.; but we know your lack of space forbids. For the benefit of your readers, however, we will say, "that those directly interested may obtain" them by simply sending us a request only and they will be furnished without the charge of $1.00 or any other sum. Right here allow us to add that we have yet to find a single grower who, having fruited the true stock of each variety side by side under same conditions, but who pronounces them distinct and Black Ben Davis the superior of the two.

What the people want and what they are entitled to is facts and not personalities; hence, while there are pages we could write you as to the work of those who are at the bottom of this controversy, the methods employed by which they have succeeded in using some good and honest men, we forbear for the present. We know our position, have made no claims which we are not abundantly able to substantiate and which the future will prove. We first placed Black Ben Davis on the market in 1895, since which time we have shipped trees of this variety into every state of the Union and many foreign countries. In short, a majority of the orchards, especially in central and western territory, have both Black Ben Davis and Gano growing side by side. We are content to let the trees tell the true story and pronounce the verdict from now on. This will be a verdict which no pomologists, no horticultural societies can influence or controvert.

QUESTION OF TRADE-MARK

So much for the Black Ben Davis and Gano article. Now what about the trade-mark article and Mr. Wild's clipping from local paper sent you? Here are the facts:

During the year 1895 we adopted trademarks on several seedling apples which originated in Northwest Arkansas known there in a neighborhood or local way only. We early learned that this part of Arkansas was one of the best apple sections in the United States, learning further, as stated in the Stark Fruit Book, one of our first publications following the adoption of trade-marks, that our market apples of the future must come from this section. This for the reason that while in other less remote regions trees were propagated by either grafting or budding, here for seventy years the people had been planting seed of their best apples. The excellence of these varieties engaged our attention, we made full investigation, carefully tracing origin and history. Becoming convinced that these were valuable varieties, possessing worth, merit, decided to introduce them; but never claimed to originate, as is stated in your article. Of these varieties we adopted and placed a trademark or brand to designate and distinguish these trees as propagated and furnished by our nurseries from trees propagated and furnished by others; in short, to give customers our guaranty that they would receive exactly what we represented, thereby protecting them from fraud, deception or mistake on the part of others engaged in the business of furnishing nursery stock to the fruit-growing world. It is unnecessary to go into details, explaining the fraud and deception practiced by unscrupulous people engaged in the nursery business, dealers, etc., or of the actual mistakes made, as you and every nurseryman is fully familiar with it; fully cognizant that perhaps in no line is the buyer so much dependent upon the honesty of and care exercised by the firm from whom he purchases goods as in the nursery business.

TRADE-MARKS RESPECTED

These trade-marks or brands we are glad to say have been respected by the responsible nursery companies in the country almost without exception. In fact we have in our possession recent letters from almost all firms of recognized standing, promising their assistance in our present litigation, stating that they recognized our moral as well as legal right, many of these offers coming entirely unsolicited.

As stated above, we have suffered no infringement since the adoption of these trademarks, except in the case of a few firms, who, not possessing the ability to advance or lead in any line, and without the necessary moral rectitude to restrain them, desire to step in, reap where we have sown, share equally in the demand and market we have established by our labor, expenditure for testing, advertising, etc. This infringement was slight at first and we paid very little attention to it; becoming bolder, however, in time nurserymen of this class began to include our trade-marks in their price lists, order blanks and printed matter generally; also to misrepresent us, our position, our claims, our motives, etc., to such an extent forbearance has ceased to be a virtue. Thinking because we had paid no attention, that they could infringe with impunity, they have become bolder and bolder.

SUITS INSTITUTED

Reaching the conclusion that it was necessary to call a halt, we instructed our trademark attorney at Washington, D. C., to institute suit against Schulze Bros., and Wild Bros. He did so, but not being familiar with the court calendars of each state, instituted suits at a time which would bring Wild suit up for trial first; at same time had made his arrangments, collected necessary evidence, etc., expecting to try first the suit against Schulze Bros.

This state of affairs becoming apparent and it being impossible for attorney to be in Sarcoxie, the usual request was made through local attorneys that case be continued. To this Mr. Wild positively refused to agree; hence our only resort was to dismiss suit against Wild, which we did at a cost of $8.75. Our case against Schulze Bros. is now under way, part of the depositions having been taken. The case is docketed, the complete evidence will be presented and a decision rendered at the next term of circuit court in April. It is our intention to attend to Mr. Wild just as soon as the Schulze case is decided, not only in matter of infringement, but for other responsibilities, among them this one which you have enabled us to locate. However, this is neither the time nor the place to declare intentions.

We beg pardon for so long a letter, but wanted you to have the facts, also your readers. We prize too highly our standing in the nursery world, prize too highly the fraternal ties existing between us and brother nurserymen, to allow misrepresentations of this character to go unchallenged. It has become a fashion in late years in certain quarters to abuse Stark Bro's. We have been busy and heretofore ignored it simply because it was too small, too petty, too contemptible, to notice. We have suffered them to do the talking and have kept right on growing and selling trees. They, mistaking our reasons for forbearance have continued their misrepresentations until they have actually impressed the belief upon some honest people that our methods were questionable, that we were trying to obtain a monopoly by reason of our trade-marks, etc. Feeling that the public is interested in facts alone, we have in this letter endeavored to give you the facts only and avoid personalities, although we confess the temptation great. If necessary later we shall call names.

This letter we shall ask you to give the same publicity given the articles to which it refers. Believe us, Yours truly,

STARK BRO'S NURSERIES & ORCHARDS CO.,
Louisiana, Mo , Jan. 28, 1904.
EUGENE W. STARK, Sec'y.

IN EXPLANATION

Editorial in "National Nurseryman," Feb., '04.

The above letter of Stark Brothers explains itself; but in justice to that firm and to ourselves we desire to add that the publication of but one side of the case was due to the fact that we did not have at haud the information that we now have, which puts the matter in a different light. The articles appeared to be simple statements of fact, and not being familiar with the contentions in either case we gave them to the nursery world as matters of interest. In view of later developments we take pleasure in presenting Stark Brothers' statement and in making this explanation.

Stark Brothers have been subscribers and patrons of this publication since its first issue. The wonderful success they have achieved speaks for itself; none stands higher in the nursery world; personally we hold them in high regard, esteeming them as gentlemen above questionable business methods. Hence nothing could have been further from our intention than to do them an injustice through our columns.

We are glad to have brought out a plain statement regarding this trade-mark case which we believe will be of special interest to all nurserymen. The suit of Stark Brothers vs. Schulze Brothers, as we understand, is along new lines, no precedent having been established by previous court decisions, consequently the eyes of the nursery world will be upon it.

As to the merits of the Black Ben Davis and Gano contention, we do not know and have no opinion to offer, as we see a wide difference of opinion exists, not only among horticulturists and pomologists, but even state societies. It seems to be a case where each must form his own opinion. The plan adopted by Prof. L. H. Bailey and others, in volunteer testing for orchards, would seem to be a good one to apply in these cases—to secure a few trees of each of these varieties, have them planted side by side and watch them carefully as they grow and mature fruit. In this way one may decide for himself whether they are the same or distinct varieties.

THE BLACK BEN DAVIS CONTROVERSY

From "The Ruralist," Feb. 11, '04.

On December 24 The Ruralist published the report of the committee of the Missouri Horticultural Society on the Black Ben Davis-Gano apple controversy. On pages 10 and 11 of this paper we present the report of the committee appointed by the Arkansas Horticultural Society, submitted at the recent state meeting at Van Buren, on the same subject, which latter report is supplemented by the evidence in support thereof together with excerpts from correspondence had with prominent horticulturists in different parts of the country by the Stark Brothers Nurseries and Orchards Co., of Louisiana, Mo , who propagated and introduced the Black Ben Davis apple. It will doubtless be contended by some persons that the Missouri Society's report was made by men of well known ability and integrity and this will not be denied; but the same can with equal truth be said of the personnel of the Arkansas committee, with this addition: The latter is a later report, made within the state and near the very spot where it is conceded that this apple originated, and the findings of this committee are based upon testimony not previously presented of persons locally familiar with such origin. Difference of opinion is not a crime. Men of great learning and profound ability—of equal mentality—may differ in opinion on the same subject and each be equally honest in intentions and belief and this is no doubt true of the gentlemen who composed these two committees. The Ruralist has many thousands of readers scattered throughout the central west and is proud of them as intelligent, progressive, honestly disposed people—we most assuredly have no desire to mislead them (were we smart enough to do so) in any respect. Prof. W. G. Vincenheller, chairman of the Arkansas committee, is Director of the Arkansas Experiment Station, Fayetteville, and an able and well known horticulturist—the report of his committee carries the stamp of truth and credibility. As stated above Stark Brothers Nurseries and Orchards Co., who propagated and introduced the Black Ben Davis, are the largest firm of nurserymen in America and have a world-wide reputation for business integrity and financial responsibility—they have faith in the originality and merits of the Black Ben Davis and are prepared, both financially and legally, to substantiate their claims. They could not afford to jeopardize their business reputation, the product of a lifetime of toil, by standing sponsor for deception or misrepresentation, hence every intelligent, fair-minded person who reads the report of the Arkansas committee and the complimentary offer by Stark Brothers must conclude that they not only know what they are talking about but that they are honest in their statements and abundantly able and willing to substantiate the same. Every Ruralist reader who is interested in the production of good apples is urged to take advantage of the fair and liberal offer made by Stark Brothers.

COMPLIMENTARY OFFER TO PROGRESSIVE ORCHARDISTS

We are willing to leave the final settlement of the Black Ben Davis-Gano controversy to the decision of the intell gent orchardists of the United States. We have no hesitancy in doing so, as we know positively that Black Ben Davis is **different** from Gano and **better** than either Gano or Ben Davis. Therefore,

WE OFFER to Government, State and Private Experiment Stations and to responsible orchardists, scions from the original stock of Black Ben Davis. We make no charge for the scions—you will be at no expense except express charges. It is understood that you will give us the benefit of your experience with the variety and also **prevent all further propagating from the scions furnished by us.**

N. B. Caution. Unscrupulous and careless parties are cutting scions from all sorts of Ben Davis trees in Ark. and selling them as Black Ben Davis. Eminent pomologists are familiar with this careless and underhand work and have called our attention to the importance of keeping Black Ben Davis stock pure. To our positive knowledge, thousands of Gano, Red Ben Davis and even old Ben Davis scions have been sent out of Ark. for Black Ben Davis. A few unscrupulous parties have even succeeded in securing the true scions of Black Ben and being unable to use that name have sold them as Gano. Therefore we make the above offer to those who are interested, in order that they may test to their entire satisfaction, Black Ben Davis from the nine Bain trees propagated from the original seedling tree as grown by old Parson Black, the history of which was obtained by the committee of the Arkansas Horticultural Society.

To Responsible Orchard Planters who may have one tree or more of undesirable variety, we will furnish complimentary for testing, scions for top grafting, from trees of our most valuable and rare kinds. We especially desire to have tested in several thousand orchards, several rare and most **promising apples** not yet introduced. We will buy all choice specimens of fruit from these top grafts, paying a liberal price. There is comparatively little loss of time as the grafts usually bear the second year. Kindly refer to this offer when writing. Scions furnished during March and April, buds in August.

This plan of testing new sorts is along the line of experimenting recommended by Prof. L. H. Bailey of Cornell University before the National Nurserymen's Ass'n at Detroit last year. We have been following this plan for the last fifteen years in our share orchards. We have these orchards in sixteen states, and this wide distribution together with the great variety of soils, climates, altitudes, etc., makes our tests of peculiar value.

Grafting Wax

Resin (best "white")	4 lbs.
Beeswax	2 "
Tallow	1 "

Melt together and pour into a pail of cold water; then grease the hands and pull the wax until nearly white. (Parafine—Standard Oil Co.'s—is frequently used instead of beeswax, but is not quite so good.)

To those needing only a small quantity of wax, we will furnish at 75¢ per lb., post-paid.

STARK BRO'S NURSERIES & ORCHARDS CO
Louisiana, Mo.

Questions and Answers

C. M. W., Mabank, Texas.—Please give Japanese method of grafting.

Reply by Dr. Whitten: I know of no method of grafting which is distinctly Japanese.

W. C. S., Tingley, Iowa.—Fruit tree salesmen for some years past have had all kinds of stories to tell planters about hardy and superior trees for planting, and have in many instances swindled the buyers of nursery stock both in price and quality. I have on my desk at the present time a pricelist of a leading New York nursery quoting "ironclad" and "special" sorts of apple tree at $1.00 and 75c each. In this list of ironclad kinds are mentioned many of our leading sorts, such as Gano, Jonathan, Wolf River, Wealthy, Yellow Transparent, etc. The claim made is that these New York trees are much superior to western grown stock. Now, I have been handling fruit trees in a commercial way for ten years past, and for four years have been growing trees in a limited way at my own place, and I am convinced that some trees are much superior grown than others, and I confesss that I would prefer to pay $1.00 each for trees properly propagated rather than plant poorly propagated ones free of charge, and yet I do not think it necessary to pay such extreme prices as the above. I have conceived in my mind a valuable tree, so far as propagation is concerned, and it is possible for me to grow a few thousand such trees without any great additional expense above the ordinarily grown nursery tree. Now, I desire to ask a few questions to be answered in your "question department," by Dr. Whitten or any other good authority:

(1) Would seedlings grown from "Duchess" apple seeds make better grafting stocks than seedlings grown from promiscuous seeds? "Iowa Blush" also make a very hardy, fine tree in southern Iowa. Or, what other varieties do you think would be better to select seeds from?

(2) Will No. 1 straight seedlings, grafted on grain wood just above the crown of the seedling, with tap root cut back within six inches of the crown, make a better orchard tree than the piece root method of propagation?

(3) Will scions cut from selected bearing trees make superior trees in the orchard to those selected from nursery stock generation after generation? What other combination would make a better orchard tree than above, for longevity and fruiting powers?

(4) Are apple trees grown in New York superior to western grown trees for western planting, methods of propagation and care being the same?

(5) What causes "blackheart" in young trees? Here in southern Iowa, scions cut late after severe freezing weather often show up brown at the heart or pith. If these scions are used, will they make black-hearted trees, or is it caused by severe climatic conditions in the nursery?

Answer by Doctor Whitten: (1) Seeds from Duchess, Iowa Blush or other hardy northern grown apples will produce hardier roots for the northwest than are the French pear stocks, which are so largely used as stock upon which to graft our cultivated sorts. (2) If one uses the tender roots in the Northwest, it is usually best to use a long scion and a comparatively short piece of root and plant the graft deeply enough so the scion itself will make roots of its own, as the French seedling roots are not very hardy, as a rule, in the cold climates. Personally, I am of the opinion that it does not matter whether the whole root or a piece of a root is used in grafting, so long as the tree makes a good growth in the nursery. (3) Scions which are selected from trees which are known to produce well, will on the average give more fruitful trees than if the scions are taken year after year from small trees which have for generations never borne. (4) For the western plantation I would prefer to use mature western grown trees. Those produced in the eastern states are in no way bettern than those produced by similar methods of management here in the West. (5) Blackheart in young trees is usually caused by winter injury. It is not advisable to use scions that show blackheart within. In some cases such scions will make very good growth and eventually become good trees; the chances are, however, against their success.

W. E. D. Cooper, Texas.—Wishing to enlarge my acreage of blackberries, I am preparing a quantity of roots to make root cuttings. Now, should I plant and transplant one year hence, or can I plant where I intend for them to remain permanently? If you say to plant in the permanent location, when will they bear, the first, second or third year? I am cutting into two-inch lengths and packing in moist sand. Is this correct?

Answer by Doctor Whitten: In propagating blackberries from root cuttings, it is best to grow them ten inches apart in the nursery rows for one year and then remove to the permanent plantation. This saves expenses in cultivating, as they may be crowded on a smaller area for one year and enable the grower to select only the strongest plants for his final planting. Of course they may be put out in the permanent plantation as root cuttings, but some of them will fail to grow, others will grow only poorly and the entire plantation must be cultivated and vacancies later must be filled with replants. If grown one year in the nursery row, and put in the permanent plantation the following spring, they should begin fruiting a little the next year after they are permanently planted, which will be the third year of growth from cutting.

J. W. A., Rosewood, Mo.—I wish to know if it would be advisable to plant Mongolian Snow pear here. Also, what is the Yellow Spanish cherry like? And also describe the Bismarck apple.

Answer by Dr. Whitten: I am not acquainted with the Mongolian Snow pear. If it is an oriental pear it will be of very little use except for ornamental purposes or from which to get seeds for growing pear roots for grafting. The Yellow Spanish cherry is one of our largest sweet cherries, which does not thrive very well in the central west. In special locations one may grow a few trees for home use, but for market the sour cherry will be more profitable. The Bismarck apple is an apple of only moderately good quality, perhaps not better than the Alexander or Wolff River, and particularly adapted to dwarfing, if one cares to grow it on dwarf stock. It is of interest to grow it in the home garden, but I doubt whether it will prove very profitable to grow it on a large commercial scale in this section.

J. H. P., Compton, Ark.—(1) Can any of the Fruit-Grower readers give directions for the germination of ginseng seed? (2) Where hillside orchard land is subject to washing where kept cultivated, could it be terraced so as to prevent washing, and would the water retained on the land be of benefit to the trees?

Answer by Dr. Whitten: (1) Ginseng seed should be frozen in boxes of moist sand over winter. If any of the seeds begin sprouting in the boxes in spring they should be planted. Unless they ripen early, however, or were put in the moist sand as soon as the berries were ripe, they will lie over summer as well as the second winter, and germinate the second spring after ripening. In any event they should be kept in this box of moist sand, say, on the north side of the building, in the shade, until they are ready to sprout, which may be either the first or second spring after ripening, and then planted out where the plants are to be grown. (2) Hillside orchard can be terraced so as to prevent washing. This is very expensive, however. It will probably be best to seed the hillside down to some sod crop and cultivate a small area around each tree until the trees are well established. If clover will grow well on the land, it will be the best crop to seed with. In case clover will not thrive there, almost any of the grasses will do. It will be well to mow all the clover or grass that grows on the land and allow it to lie for a mulch, which will in a measure take the place of cultivation. When the trees are well established the sod may be allowed to cover the entire land, leaving no hoed space around each tree and much of the mulch thrown under the trees, as the ground is mowed from time to time. If the land has been newly cleared and sprouts from stumps are numerous, a good growth of clover or grass will help to choke out these sprouts, provided the place is mowed over frequently during the summer and the growth all allowed to lie as a mulch on the ground.

C. P., Ottumwa, Iowa.—What causes wax to come on cherry trees, and what is the remedy?

Answer by Dr. Whitten: Wax exudes from cherry trees through wounds. In the sweet cherry wounds are frequently caused by sunscald. Wax would exude where borers have gotten in or where the tiny pin-hole bark beetle has entered the trees. It will be well to look over your trees carefully and see if any insects are entering where the wax is exuding, or whether it may be due to sunscald or winter injury.

M. C. S., Colley, Va.—I have a young orchard one and two years planted, on rather thin land, though nearly new, which has been in corn the past two years. I expect to cultivate the orchard next spring until about the middle of June, then sow or plant cow peas. Would you advise planting cow peas and cultivate like corn, or sow broadcast and mow for hay? The trees made a splendid growth last summer.

If a hay crop is desired, it has been found that cow peas can be more easily harvested when planted in rows than where sown broadcast. There is much plant food in the vines of the cow peas, and by turning them under much humus would be added to the soil. But if the hay can be fed to livestock and the manure returned to the soil, doubtless it will be best to cut the hay crop, feed to stock and then return the droppings. Cow pea vines make valuable hay.

W. M. P., Allendale, Ill.—I have tried to secure from several nurseries apple trees of the variety known as "Brewer Seedling" or "Coffey Indian," but cannot find anyone who has the variety. Quite a few of these apples come to this market; they are immense in size, somewhat flat, of a pale green color; meat is juicy, and I have known the apple

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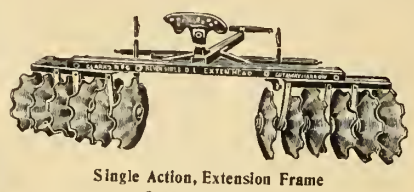

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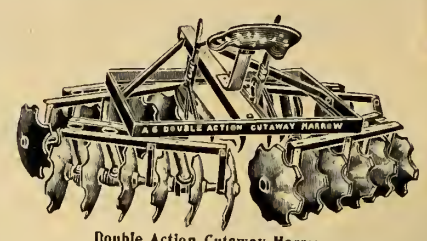

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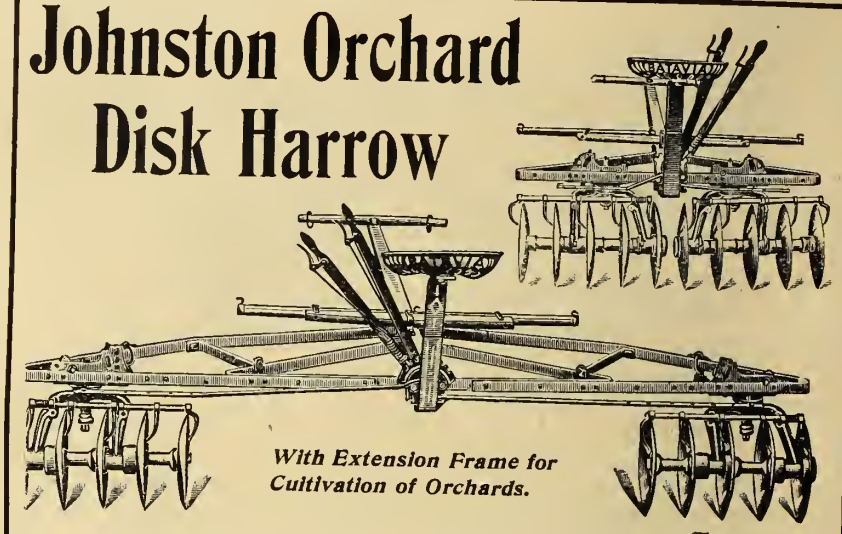

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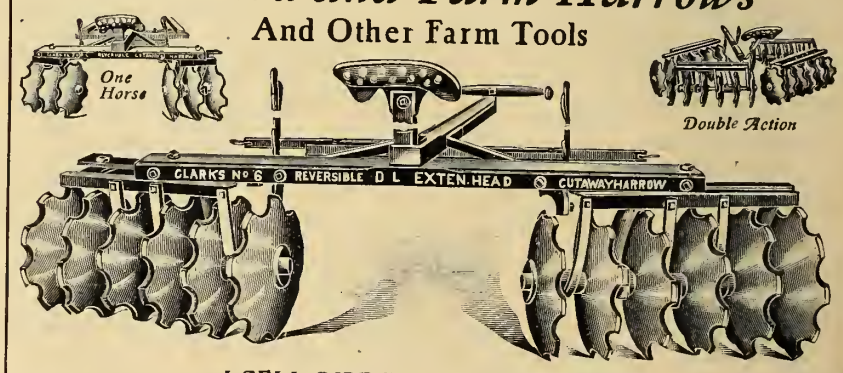

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No Agents. Apples, Peach, Pear, Plum, Cherry, Apricot, Currant, Gooseberry, Grape Vine, Raspberry, Blackberry, Strawberry plants, etc.; 30,000 Peach, one-third Elberta; 150,000 Strawberry plants, leading varieties at $5.00 per 1,000 F. O. B.; 3 to 4 foot Apple and Peach, straight and healthy, at a very low price. Will make very low prices on Peach. Let me figure your commercial orchard. A fine lot of 5 to 7 foot Apple and Peach, 1 and 2 years old. I pay the freight. Write me before you buy.

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A. H. Kercheval, Proprietor.
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beats them all. Twice as large as the old Loganberry; canes twice as strong; twice as big a cropper. Over $900 was cleared from one acre last year. One sample box was sent to M. George & Son, South Water st., Chicago, Ill. Messrs. George & Son said they were the largest berries ever seen in Chicago. Strong plants, $10 per 100; $2.00 per dozen, express paid.

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Apple—3 yr. old, fine lot of Grimes and Benoni and others in first grade.
Peaches—All grades, good lot of Elberta and Champion.
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Norway Spruce—18 to 24 in., and 2 to 3 feet; cheap in hundred lots. Also a general line of nursery stock.
PLANTERS will do well to get our prices before buying elsewhere, especially on Peach trees. Every thing as low as the best can be bought for.

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Peonies, Hardy Phlox, Iris, Shrubs, Etc.

Send for my illustrated catalogue, telling about Hydrangeas, Lilacs, Spireas, and all the old-time favorites, as well as the newer sorts.

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To Planters

FOR SALE—At bargain prices, 5,000 two-year-old, thrifty Ben Davis, Gano and York Imperial trees, grown by me for my own use, but cannot use now on account of not getting possession of site for orchard. Ralph F. Lozier, Carrollton, Missouri.

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to keep until April with scarcely a decayed apple.

Who knows about this apple?

J. N. H., Green Forest, Ark.—The eggs on the apple twigs which you send are the eggs of the common apple aphis, a small louse which will appear as the buds are unfolding in the spring. It can be destroyed by spraying with kerosene emulsion or with oil and water, mechanically mixed by one of the newer style pumps.

E. K., Washington, Mo.—The blackberries affected with orange rust should be cut out and destroyed. The disease will reappear if the tops of the plants are cut off and suckers come from the roots. It will not attack the apple trees, but if plants are left the disease will spread to other blackberry plants.

J. W. McC., Sulphur Springs, Ark.—What is the best chemical fertilizer for strawberries, where there is apparently sufficient humus, and yet growth is deficient, with not sufficient vigor? I have thought to use nitrate of soda, but cannot find where to obtain it in the West. How and when should it be applied?

Nitrate of soda is sold by various dealers in commercial fertilizers, but is expensive in the West because of the fact that the railways will not haul it except when classified as "chemicals", at a very high rate. On page 13 of this issue is an article on the fertilizing of strawberries, which tells how nitrate of soda and sulphate of potash can be applied for quick results.

W. P., Mt. Morris, Ill.—(1) We had a heavy load of ice on all trees here for over a week, with the thermometer from 10 to 22 degrees below zero; what effect will this have on fruit buds? (2) What fertilizer can I use on a strawberry row early in spring, as soon as I part the straw mulch, and what kind will be best? This is a new bed set last spring.

The effect of ice and sleet under such conditions varies. Last year, in Northern Missouri, such conditions killed most of the peach buds, and this has likely occurred on your trees. (2) In this issue on page 13 will be found an article on fertilization of strawberry plants, which covers the points brought up. Nitrate of soda and sulphate of potash can both be applied in solution, the former to induce more vigorous growth of plant and berry, the latter to add firmness and quality to the fruit.

S. H. S., Seymour, Mo.—Please give a remedy for peach leaf curl. I have some Elberta trees four years old which have had the leaf curl very bad every spring, and the disease almost defoliates the trees.

It has been found that this disease can be controlled by spraying with plain lime whitewash before growth starts in spring. However, Bordeaux mixture will stick to the tree better and is recommended for this purpose. Spray before growth starts.

F. G. P., Arkansas City, Kan.—I have a number of wild plum trees which produce a fine lot of blossoms, but have not produced any fruit. What can I do to make the museful as well as ornamental?

Doubtless the blossoms are self-sterile, and need other varieties planted near to furnish pollen. Some variety which is strongly self-fertile can be planted near them, or quicker returns can be secured by top-grafting branches of the self-fertile varieties in the trees which bloom and do not bear. These top-grafted branches will blossom much earlier than trees planted next spring.

H. T. W., Ozark, Ark.—Please tell how to grow grape vines from cuttings.

The cuttings are made in the winter, and are usually made of lengths with three buds; tie the cuttings in bunches and bury half their length in moist sand, which is kept in a cool cellar. By spring the cuttings will be well calloused, when they should be planted in the open ground. Insert the cutting until the upper bud is at the surface of the ground. Plant about eight inches apart in the rows, with rows far enough apart to permit of horse cultivation.

J. M. Carson, Iowa—The oleander leaves which you send were referred to Prof. Stedman, who states that they are infested with a scale insect, which can be held in check by spraying with kerosene emulsion or with very strong soapsuds.

Subscriber, Welch, Ind. Ter.—The box of insects was referred to Prof. Stedman, who says it contains the hibernating larvae of the leaf crumpler. The insects can be killed by spraying with any of the arsenical poisons in the early spring, when the leaves are unfolding.

P. Z., Monterey, Mexico.—I have a small orchard of about 1,000 assorted fruit trees on my farm in central New Mexico. Trees are now five years old. Would alfalfa planted now in this orchard seriously impair the growth and productiveness of the trees?

Answer by Prof. Dickens, Manhattan, Kan.: Five-year-old orchard trees of any variety should be given practically all the support the soil can furnish, and the planting of any perennial crop would in most soils and climates be a dangerous proceeding. All recent experience seems to point to clean culture, with a cover crop sown when cultivation is discontinued, as the best treatment for orchards, especially in localities where moisture is at all liable to be deficient. The selection of a cover crop will depend largely upon the soil and climate. In poor soil some of the leguminous crops, cow peas, etc., might be tried; in heavy, rich land, oats has been successfully used. The prevention of washing and blowing and the addition of humus to the soil are the results reached by the use of cover crops.

LEGAL QUERIES.

What Is a Lawful Fence?

Mr. Andrew Paulson, Franks, Mo.—What is a lawful fence in Missouri?

Answer—Under the statutes of Missouri, fences to be legal should be as follows: All hedges should be at least four feet high; all fences composed of posts and rails, posts and paillngs, posts and wire, posts and boards or palisades, should be at least four and one-half feet high, with posts set firmly in the ground not more than eight feet apart, and with rails, palings, wire, boards or palisades securely fastened thereto, and placed at proper distances apart so as to resist horses, cattle, swine and livestock; those composed of turf should be at least four feet high, and with ditches on either side, at least three feet wide at the top and three feet deep; and what is known as a worm fence should be at least five feet high to the top of the rider, or if not ridered, should be five feet to the top rail or pole, and shall be locked with strong rails or poles or stakes; those composed of stone or brick shall be at least four and one-half feet high; Provided that in counties in this state in which swine is restrained from running at large, all fences built of posts set firmly in the ground, not more than sixteen feet apart, and three barbed wires tensely stretched and securely fastened thereto, and the upper wire being substantially four feet from the ground, and the remaining two wires placed at proper distances below to resist horses, cattle and live stock, and all fences built of posts and rails, or posts and slats, with posts set firmly in the ground, not more than ten feet apart, and with three rails or slats securely fastened thereto, and the upper rail or slat being substantially four and one-half feet from the ground and the two remaining rails or slats to each panel being placed at proper distances below to resist horses, cattle and live stock, and all fences built of posts and boards, with posts set firmly in the ground, not more than eight feet apart, and boards substantially one inch thick and six inches wide, securely fastened thereto, and the upper board being at least four and one-half feet high, and the remaining boards being placed at proper distances below to resist horses, cattle and live stock, shall be deemed and held to be a good and lawful fence. The above rules do not apply to railroads which must fence their tracks so as to keep all kinds of stock off from same.

We give you the full text of the law and from it you may derive information to guide you in respect to any fence you may desire to erect.

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CHERRY CULTURE.

One of the most valuable fruit bulletin issued by any of the Western Experiment stations lately is Bulletin No. 73, "Cherries and Cherry Growing in Iowa," issued by the Iowa Experiment Station. The cherry is a popular fruit in Iowa, and deserves to be more largely planted in others of our Western states. The bulletin gives descriptions of varieties, with illustrations of many of them, and is especially valuable in distingulshing varieties, for the reason that many of the Russian varieties which were introduced by Prof. Budd about twenty years ago have become badly mixed in orchards and nurseries, and the descriptions given in this bulletin, which are more apt to be correct, will help to straighten out the tangle.

In regard to the propagation of the cherry, this bulletin answers questions very often raised as to why Mahaleb stock is preferred for cherries, rather than to work the trees on Mazzard stock. It is claimed the latter will make a larger tree. The Mahaleb is a native of Southern Europe, and is used almost exclusively as a stock by western nurserymen, propagation being by budding, as it is worthless for grafting. It is hardier than Mazzard, especially in dry climates, and is especially adapted to the sour varieties. The Mazzard is a strong-growing stock of the sweet cherry type, and is used in the East and the warmer sections of the West as a stock for sweet cherries. It is not sufficiently hardy for cold sections. The Mazzard can be used for root-grafting, but budding is the process of propagation generally used.

The bulletin says that on account of the severity of the winters in the Northwest a hardier stock must be secured. The American Morello, or pie cherry, a native of Germany, has been used as a stock in a limited way, and seems to be fairly promising. This stock is closely related to the sour cherries, and is hardier and forms a better union than the Malaheb, but it sprouts from the root after being planted in the orchard. Experiments are also being conducted in the use of native stocks, such as wild bird cherry and sand cherry, but no definite conclusions have been reached.

Cherries can be top-grafted, working over varieties which are hardy in tree and tender in bud to more desirable sorts. This work must be done early in spring, before sap begins to flow, and while scions are yet dormant. In top-grafting the limbs chosen for working should be well up in the tree, so that the scions will not be overgrown by the top of the tree that is left. Either the cleft or side graft may be used, and as a rule the limbs chosen for grafting should be not over an inch and a half in diameter. All cut surfaces should be covered with wax and wrapped.

Site for a Cherry Orchard.

Cherry trees must have well-drained soil—they cannot stand wet feet. This fact has been fully demonstrated during the past two years, which were unusually wet. The fruit buds of the cherry are often destroyed by spring frosts, and for that reason it is desirable to choose an elevated site, which is less liable to frost than a valley or low land. Often a difference of a few feet in elevation may save a crop of fruit, and in selecting a site for planting the top of knolls and the side of hills should be chosen. Cherries will thrive on almost any well-drained soil, but show a preference for a rather light gravelly or sandy loam. In rich black soil they tend to an overproduction of wood and produce few fruit buds.

The distance apart that trees should be planted depends upon the varieties and soil. Eighteen to twenty feet apart is about the minimum for the Montmorency and Morello groups of cherries, the varieties most generally planted in the West. For the first five years the cherry orchard should be kept cultivated, although vegetables, root crops and small fruits can be profitably grown among the trees. Potatoes, beans, beets, carrots and squashes make ideal crops for young orchards. Strawberries, raspberries and blackberries are sometimes successfully grown in young orchards. They should never be allowed to grow less than four feet from a tree, and as the trees grow and take the ground they should be removed altogether. Oats, wheat or field corn should never be grown in a cherry orchard under any consideration.

For the cultivation of the orchard it is always an advantage to have the rows farther apart one way than they are the other. This permits of cultivation only one way, but with a small amount of hand labor the orchard can be kept clean. After the first five years the cultivation of the orchard depends somewhat upon circumstances. If the soil of the orchard is very rich and the trees are making too vigorous growth, or the ground is so situated that it is liable to be washed by rains, it is best to seed the ground to clover, orchard grass or timothy, and to keep it in sod for three or four years. In no case should a heavy blue grass sod be allowed in the orchard. While the orchard is seeded down the grass should be ektp mowed and the trees heavily mulched. If soil is of medium fertility and is not subject to washing it should be kept clean cultivated until the middle of July and then seeded to a cover crop. The best cover crops are vetch, cow peas, soy beans and crimson clover, if nitrogen is needed to be added to the soil. If no nitrogen is needed oats and rape make good cover crops, not being killed by frosts until in November.

Little pruning is recommended for the cherry. Cut out broken or mangled roots and limbs when planting. Prune the top into symmetrical shape, removing cross limbs and forks, and after the tree is properly started it will need little further pruning. Low headed trees should be secured, and in order to get them it is necessary that young trees which have not been trimmed up in the nurscryy row be planted. Low heads protect the trunks from sunscald, and the fruit is brought nearer the ground, so that it can be more easily picked. The accompanying illustration shows a row of cherry trees with low heads. These trees have never been troubled by sunscald and most of the fruit can be picked from the ground.

LOW-HEADED CHERRY TREES.

Insect Enemies and Diseases.

The chief insect enemy of the cherry fruit is the plum curculio, which is the cause of the so-called wormy cherries. Where many trees are grown this is seldom a serious pest with sour cherries. The most successful method of combating it is by the jarring treatment. This consists of jarring the trees early in the morning, when the curculio will fall to the ground and "play 'possum," and can be picked up and destroyed. A catcher made like an inverted umbrella and mounted on a wheelbarrow is the most practical appliance to use in the jarring.

A serious fungus disease, especially during the past two wet seasons, is the leaf spot disease. This attacks the leaves, causing a small brown spot about an eighth of an inch in diameter, and later the leaves turn yellow and drop from the trees. This disease has been unusually bad for the past two seasons, the Morello cherries being most subject to the disease. In some cases the disease was so destructive that a great many trees were killed outright, and other trees were so weakened they will succumb to a second attack. This disease has been so general throughout the West for the past two seasons that much care should be taken that the trouble is checked the coming season. The only satisfactory remedy is to spray with Bordeaux mixture or copper carbonate solution. It is important that the spraying be done early, before blossoms open. Until the cherries begin to color Bordeaux mixture can be used, but after the fruit begins to ripen the spraying should be with copper carbonate solution, which will not stain the fruit. Two or three sprayings will usually hold the disease in check, and four sprayings should be sufficient even in extreme cases. The accompanying illustration (Figure 2) shows cherry leaves attacked by the leaf spot disease.

CHERRY LEAF SPOT.

The eating of cherries by birds is a serious loss to the growers, and many plans are recommended to prevent this. One of the most popular is to plant Russian mulberries, which will ripen with the cherries, the fruit of which will be preferred by the birds. Experiments were conducted by using a netting over the trees, with a mesh fine enough to prevent the entrance of the birds. This is a practicable plan where there are only a few trees to be protected.

The descriptions of varieties, some of them illustrated, is an interesting feature of the bulletin, but will not be of great interest to commercial growers, who will use but three or four varieties at most. An interesting feature of the descriptions, however, is what is said of the confusion in regard to the Montmorency variety. The Montmorency Ordinaire is given as the type of this variety most generally grown. This is also called Long-Stemmed Montmorency, and is improperly called Large Montmorency. The true Large Montmorency, or Short-Stemmed Montmorency, is larger than the Montmorency Ordinaire, but is a

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shy bearer, and is not now generally propagated by nurserymen, except where it is sent out under the impression that the variety offered is the true Montmorency Ordinaire, which is the profitable type of this variety.

Experiments in Marketing Fruits.

It is not enough that fruit-growers shall be able to raise good fruit—this fruit must be marketed profitably if the business is to continue. It is well, therefore, that the experiment stations devote some attention to this phase of the business. The South Haven (Mich.) Experiment Station made a test along this line, and the report is interesting. Red raspberries brought a good price throughout the season, but with black raspberries and blackberries the best returns were received from the early and very latest varieties. Cherry varieties of currant sold for $1.25 for 16-quart crate, while all other varieties brought only 40 to 60 cents a crate. In the case of cherries no satisfactory commercial results were secured with sweet varieties, and the latest varieties of the sour cherries were most profitable.

In marketing peaches it was found that some of the better white varieties, well packed in open-slat, one-fifth bushel baskets, sold for a higher price in Chicago than many of the late yellow varieties. Plums were shipped on the same date to the same market in the following packages: One 16-quart case, two one-fifth bushel baskets, and one four-basket crate, such as is used for tomatoes. The two one-fifth bushel baskets equaled in size the one four-basket crate. The sixteen-quart case sold for $1. The four-basket crate, containing four quarts less, also sold for $1.00, while the two one-fifth bushel baskets sold for 35 cents each. There was thus a difference of 75 cents a bushel in favor of the four-basket crate. The fruit in all the different packages was as near alike as it was possible to grade it.

Four-pound baskets of Delaware grapes sold for the same price as eight-pound baskets of large black grapes. Oldenburg and Jonathan brought the highest price among apples. The demand for crab apples was found to begin the first week in September and continue well into October. Hyslop brought the highest price throughout the season. In this connection it is stated that in harvesting crab apples the fruit must be picked while firm and crisp. If an attempt is made to hold it over it becomes mealy and sells for a lower price.

An Important Trade Mark Decision.

The Circuit Court of the United States in the City of Boston handed down, October 26, 1903, a decree restraining Messrs. Thayer & Co., Cambridge, Mass., from using the word "Painkiller" upon a compound made by themselves and granting a perpetual injunction against their using this name, which was adopted many years ago by Perry Davis, of Providence, R. I., to designate his medicine, and is now the property of his successors, The Davis & Lawrence Co., New York.

The effect of this and other decisions makes it quite clear that no one but the owners of this Trade Mark has the right to use the name "Painkiller" upon their compounds, and it is a well-known legal fact that dealers in, as well as manufacturers of an imitation, are liable in damages, and we understand the owners will protect their rights against all comers.

Fruit Injured in Central Missouri.

I fear that the fruit buds of the peach are most killed. We have had fifteen degrees below zero three times within five days. The buds were in good condition, but I think they will not stand such a degree of cold. Perhaps a few hardy seedlings may survive, as they did last year.

Other trees are in apparently good condition and we hope for a good crop after last year's light one.

Strawberries, like wheat, were injured by the cold dry weather of late fall and early winter. When covering my plants the first week in December many of the leaves were dry enough to crumble, though still green in color. Raspberries and blackberries seem to be all right.

I read Dr. J. W. Greene's California letters with great interest. Could you not get him to write more in regard to California as a fruit-growing state as compared with Missouri.

Fulton, Mo. R. E. B.

Picking Fruit Off High Limbs.

I have read with much interest the article of Ed. G. Hoover on "New Methods in Orchards" which leads me to write of a device used by the Filipinos in gathering fruit. They take a bamboo pole about 1½ inches in diameter and split the top end into strips of suitable length and width to form a basket of six or eight inches in diameter and of globular form. A circular opening is left at the top, large enough to admit the fruit which is to be gathered. The picker takes the pole of which the basket is part, places the opening of the basket under the fruit, the rim of the basket against the stem, gives a slight push or jar, and the fruit gently falls into the basket which usually holds three oranges.

There are no bamboos here but I think an ordinary tinner could make one of wire and attach to the end of a pole which could be used to advantage in home orchards and gardens, to collect with small effort and perfect freedom from bruises those finest specimens of apples, pears and plums which are so prone to take up a strong position on the tip top of a small tree or upon some slender straggling branch hard to get at. SUBSCRIBER.

"To Outwit the Cut Worm."

A better way, I think, to prevent cut worms from eating newly set tomato, cabbage or other similar plants, is to take paper, tear or cut into squares of five or six inches, tear or slit the pieces to the center, slip around the stem of the plant, pressing down so the paper will fit closely around the stem, holding them in place by small clods placed on the corners of the squares. Do this and I guarantee that the worm will not trouble the plants.

W. S. YOUNG.

Franklin, Indiana.

Daniel Shank of Clayton, Ill., says that the heavy rains which visited the central valleys in January about drowned out the ground mouse which has been doing such desctructive work in orchards during the past few years. Mr. Shank says this mouse cannot stand too much water, and that the heavy fall of last month about fixed him. Let us hope this is so.

J. J. McClelland, Tombstone, Arizona, says: "I consider the Fruit-Grower the best paper published in the United States for the price."

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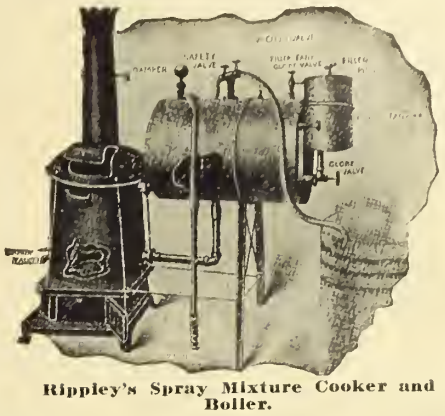

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Extra hose, per foot, 8c. Double Vermorel, Bamboo Rod, Copper Tube through center, to elevate spray in high trees, suitable to attach to these Sprayers, 4-ft., 75c; 5-ft., $1.00; 8-ft., $1.25; 10-ft., $1.50.

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This Season's Catalogues

Last month the Fruit-Grower complimented the catalogues of the various firms which seek to do business with the farmer. The catalogues received since that time are fully up to the standard, for some remarkably good catalogues have been received. And we believe the farmers appreciate these catalogues, for they are really an inspiration. Most of the catalogues are now illustrated, and these illustrations can be an inspiration to one who will study them carefully. Take, for instance, the catalogue of S. L. Allen & Co., Philadelphia, manufacturers of the Planet Junior line of implements. With its pictures of well-kept gardens, why should it not be the means of encouraging farmers to have one as good this season? Yes, the catalogues are getting better every year, just as farmers are improving, for the manufacturers are realizing that the farmer of today is up-to-date and is entitled to good advertising literature, and the farmer, in turn, realizes his own importance and demands the best of everything. And this is as it should be.

Among the catalogues received this month are the following. The new offerings advertised are mentioned in the catalogue review:

The Lyman Prolific Crab.

The accompanying illustration shows the original tree of this crab, together with its originator, the late H. M. Lyman. This is a crab which originated in Minnesota, and the claims made for it are absolute hardiness, productiveness and excellent quality. The Minnesota Horticultural Society says it is a "seedling of Haas crossed with Siberian crab; absolutely hardy and very productive; fruit large like Whitney and beautifully colored."

This crab is offered by the Lyman Nursery, Excelsior, Minn.

William Henry Maule, Philadelphia.—This old reliable seed firm always has a good catalogue, and this year it is in every way satisfactory. As usual, special prizes are offered to those who get up club orders for seeds, this year $1,000 being devoted to this purpose. Among the new offerings are New Magnificent Tomato, an all-season tomato of much value; Neapolitan pepper, a very early red pepper with very thick pods, especially recommended for market; Shamrock cucumber, which keeps green to the last, while other varieties turn yellow; Panmure Extra Early lima bean, coming into bearing in July and continuing to frost. Maul's catalogue is one of the best seed catalogues of the season.

Northrup, King & Co., Minneapolis, Minn.—This firm makes a specialty of seeds of all kinds for the northern belt, as well as handling seeds for general planting. The 1904 catalogue is a good one, and, among other things, tells about the Peep o'Day sweet corn, an extra early sweet corn of most excellent quality. The Iowa Experiment Station reports that this variety was ready for roasting ears in six weeks. Seed potatoes are pushed as a specialty.

John A. Salzer Seed Co., La Crosse, Wis.—This catalogue is better printed this year than usual, for there have been seasons when the catalogue did not present a very attractive appearance. This year it is well printed, and shows up well. Seed potatoes, oats, corn and forage crops, of which this firm makes a specialty, are pushed this year, as usual, and some new offerings are listed. Among the latter are a Five Million Dollar Tomato and Salzer's Colossal Stringless Green Bean. Fruit trees and plants are included in the catalogue.

D. V. Burrell, Rocky Ford, Colo.—This catalogue lists a full line of seeds, but a feature is made of vine seeds, canteloupes, cucumbers, etc. Among cucumbers a specialty is made of the Klondike, said to be very early and of excellent quality. Naturally, canteloupes come in for considerable attention, and Mr. Burrell tells how the melons are grown at Rocky Ford. For melon seeds alone, if for nothing else, this catalogue should be consulted.

Archias' Seed Store, Sedalia, Mo.—A neat seed catalogue, also including poultry and beekeepers' supplies. A feature is the premium to be awarded to best exhibits of products grown from Archias' seeds, to be made at the Missouri State Fair next summer.

Hammond Seed Co., Bay City, Mich.—This catalogue lists all kinds of seeds, with a specialty of seed potatoes. This firm has made a specialty of potatoes for years, and has built up a large trade. Strawberry plants are listed, and a feature is made of special bargain collections of flower and vegetable seeds, roses, bulbs, etc.

L. L. Olds Seed Co., Clinton, Wis.—This firm has been incorporated, succeeding to the business of L. L. Olds, who continues as president and manager of the larger firm. This firm makes a specialty of seed corn, seed oats and seed potatoes, and is pushing the Clinton, a new medium late white potato, for which great claims are made. Other new potatoes are Early Roser, claimed to be better than the old Early Rose; Vornehm (a German word meaning "delicious"); and Montana Prizetaker. A number of varieties of corn and oats are pushed, and the catalogue, on the whole, is a good one.

Geo. H. Brain Co., Springfield, Ohio—A very modest, but neat, seed catalogue, with features made of several special collections of garden and flower seeds, roses, etc.

Diggs & Beadles, Richmond, Va.—A neat catalogue from a Southern seed house. Coming from the South as this one does, it naturally lists cow pea seeds, and will prove of interest to Fruit-Grower readers because of this fact.

James Vick's Sons, Rochester, N. Y.—Always one of the handsome seed catalogues, this one for 1904 is still among the leaders. Among the novelties is the Vicktor potato, which was sent out last year as an unnamed sort. It is early and claimed to be of excellent quality. The Perfection currant is pushed again this year.

Missouri Valley Seed Co., St. Joseph, Mo:—This is more than a seed catalogue, for this firm handles poultry supplies, bee keepers' supplies, etc., and has a well-equipped horticultural department, in which are found spray pumps, insecticides, etc., as well as traceless harness, cutaway harrows and other things needed by the fruit-growers. This firm is Western distributers for Bowker's Disparene, the new insecticide, which is growing in such favor. The catalogue is most complete, and is needed on every farm, for in one book it lists a great many of the articles which are actual necessities.

Texas Seed & Floral Co., Dallas, Texas.—A very good catalogue, with a full line of seeds for Southern planters particularly. A feature is made of several varieties of cotton, for which certain good qualities are claimed.

Joseph W. Vestal & Son, Little Rock, Ark.—Catalogue of flower plants and seeds, small fruit plants, etc. A very neat catalogue in every way.

Griffith & Turner, Baltimore, Md.—Not only a seed catalogue, but one which contains descriptions and prices of spray pumps, implements of all kinds, harness, ladders, etc.

D. Landreth Seed Co., Bristol, Pa.—Full line of field, garden and flower seeds, the whole being presented in very attractive manner.

S. M. Isbell & Co., Jackson, Mich.—A neat seed catalogue, listing a full line.

J. B. Armstrong & Sons, Shenandoah, Iowa.—A seed corn catalogue, telling about the seed corn for which this firm and the Nishna Valley are famous. Besides corn, oats and potatoes come in for attention, and other farm seeds and garden seeds are furnished.

McGregor Bros., Springfield, Ohio—This firm makes a specialty of roses and other flower plants, and its catalogue this year is a good one. Plants of all kinds of flowers are offered, and a full line of flower and vegetable seeds is offered.

Reliable Incubator Co., Quincy, Ill.—This firm always has a good catalogue, to describe its Reliable incubators and brooders, and has a most excellent book again this year. Besides advertising the machines named, it has much valuable information for poultry raisers, and also quotes prices on poultry supplies, such as feeders, markers, etc. It is an excellent catalogue, well gotten up and well printed.

Anna L. Pinkerton Co., Hastings, Neb.—A neat book advertising Mrs. Pinkerton's Chick Food, and also some very fine breeding pens of poultry, from which eggs are offered for sale. The booklet deals especially with the care of young chicks, with special attention to their feeding, and is very helpful.

B. F. Baker Co., Burnt Hills, N. Y.—This catalogue tells about Baker's Traceless Harness, which is especially recommended for use in cultivating orchards, nursery stock, vineyards, etc. This harness dispenses with the use of whiffletrees, and therefore allows one to cultivate close up to trees without in any way injuring the bark of the same. The catalogue has illustrations showing the appearance of the harness, fully describes it, and quotes what many customers say concerning the harness, especially for orchard use. This is a catalogue which should interest every reader of the Fruit-Grower, for the question of which it treats concerns them all.

Ohio Carriage Manufacturing Co., Cincinnati, Ohio—A very neat catalogue which tells of the "Split Hickory" line of vehicles manufactured by this firm. The catalogue is well illustrated, showing all styles of vehicles, as well as harness, etc.

DO YOU BITE

At Tree Agents' Prices?

Not When I Can Save 40 Per Cent and Buy Direct from the

Wichita Nursery

AT WHOLESALE PRICES

Freight prepaid. Certificate of genuineness that our stock is true to name. Satisfaction guaranteed. Send for price list now. Address

Wichita Nursery, Wichita, Kas.

Surplus Stock of Mulberry, Black Locust

Catalpa and Osage Seedlings. Special low price to the wholesale trade. Send us a list of your wants for prices.

Fairbury Nurseries

Fairbury, Nebraska

Strawberry Plants

Our stock is large and equal to the best. Consisting of nearly 50 varieties, both new and old sorts.
OUR RASPBERRY PLANTS are finer than ever. 100,000 Kansas; 50,000 Gregg; Miller Red, Thwack, Munger, Cardinal and others.
10,000 Grape Vines. 25 varieties of Dahlias. 100 varieties of Cannas.
It will pay you to write for our catalog.

ELMHURST NURSERY AND FRUIT FARM

M. E. CHANDLER Argentine, Kan.

Elberta Peach---30,000

30,000 cream of other kinds, budded from my experimental orchard. Plenty of Apple, Plum, Pear and small fruits, all in Nature's cold storage, the ground.

Write for prices delivered.

M. Butterfield, Farmington, Mo.

85 miles so. of St. Louis on I. M. R. R.

Hardiest Peach--Johanna

THREE FOR ONE DOLLAR

Shows 50 per cent line buds Feb. 5th. Other kinds about all dead here. To Introduce will give FREE, in orders for nursery stock of $3.00 and up.
Special Bargains in PEACH and APPLE on leased land; compelled to clean up. Best of stock. Send for list.

SUNNY SLOPE NURSERY HANNIBAL, MISSOURI

Gage County Nurseries

We Will Make Special Prices on Apple Root Grafts

We have 200,000. Can be made to your order if sent at once.
RUSSIAN MULBERRY—250,000 unsold, well ripened, well graded; favorable prices.
CATALPA, OSAGE ORANGE, BLACK LOCUST seedlings, in good supply.
ASPARAGUS, STRAWBERRY PLANTS, in large lots.
RUSSIAN APRICOT—We have 50,000 of these hardy, beautiful seedlings. They make a fine fruit and ornamental tree. We are selling them cheap.
30,000 PEACH. 40,000 APPLE. 20,000 CHERRY.
Special prices to large planters. Also general nursery stock. Get our catalogue for the asking.

Gage County Nurseries, J. A. GAGE, Prop. Box 102 Beatrice, Nebraska

Budded Apple Trees

Largest Stock of any Nursery in the Southwest. General line of other stock including Heavy Stock of Grafted Apple Trees.

Branch Nurseries at Wellington, Kansas and Belle Plaine, Kansas.

Write for prices and new 30-page illustrated catalogue, mailed free of charge.

Winfield Nurseries, Cooper & Moncrief, Props., Winfield, Kansas

PLANT PURE AND SURE SEED

In determining where to place your orders for seed, quality should be of first consideration, and the price second.

We propose making special inducements for mail orders, and are prepared to sell the

HIGHEST GRADE OF SEED AT

WHOLESALE PRICES TO THE CONSUMER

Before buying elsewhere, investigate our offers and send today for our finely illustrated catalogue. It is complete in every detail. Use a Postal.

ST. LOUIS SEED CO.

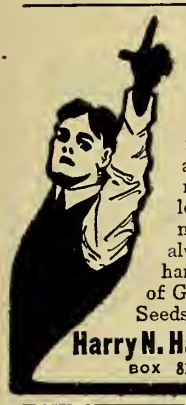
Successors to the Retail Department of PLANT SEED COMPANY

651 N. 4th St., ST. LOUIS, MO.

Did you ever see 5 straight or circular rows of Pansies side by side, each a different color? If so, you know that the effect is charming. Did you ever see Childs' Giant Pansies, marvels in beauty and true to color? If not, you have not seen the best.

As a Trial Offer we will for 10 cts. mail 5 Pkts. Giant Pansies, Snow White, Coal Black, Cardinal Red, Pure Yellow, Azure Blue; also **Our Catalogue for 1904**—Greatest Book of Flower and Vegetable Seeds, Bulbs, Plants and New Fruits. 140 pages, 500 illustrations, many plates;—will be mailed Free. Scores of Great Novelties.

John Lewis Childs, Floral Park, N. Y.



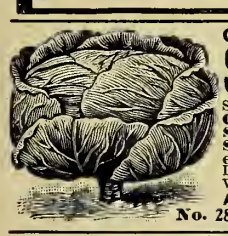
Hammond's Seeds Lead

in vigor, yield, earliness and quality. Better cannot be had. Prices very low. We can save you money. Northern Grown always the BEST. Our handsome 100-page catalog of Garden, Field and Flower Seeds mailed free on request.

Harry N. Hammond Seed Co. Ltd

BOX 82 BAY CITY MICH.

SEEDS. Buy seeds that grow luxuriantly and produce bountiful crops. That's the kind we sell—seeds that will grow! Send for catalog, and get a package of Royal Giant Pansies free. The finest pansies grown. Send to day. SPECIAL BARGAIN: 10 pkts. Annual Flower Seeds, 10c., 5 pkts. Vegetable Seeds 10c. PLANTS. Our plants are strong and healthy. Give us a trial. 6 Roses 25c; 6 Geraniums, 25c; 6 Begonias, 25c; 4 Pelargoniums 25c; 3 Palms, 25c. 1 Chrysanthemum 1 Geranium and 1 Fuchsia, 10c. **A. C. Anderson, Columbus, Nebraska.**



GREAT BARGAINS in SEEDS.

Send today for fine **Free Catalogue of New and Standard TESTED SEEDS. Prices lowest.** Presents with orders. Large buyers ask for Wholesale List.

ALNEER BROS., No. 28 A BLK, Rockford, Ill.

Seed Corn

$1 00 bu and up. Michigan Northern Grown is the earliest and produces largest crops **Hammond's Sixty Day Flint, American Pride, Race Horse Dent** and **Thoroughbred White Dent** are the 4 famous varieties today. American Pride made 107 bu. shelled corn per acre. 100-page catalog fully describing these wonderful corns sent on request **HARRY N. HAMMOND SEED CO. Ltd., Box 82 Bay City Mich.**

TREES

20 years experience growing fruit and ornamental trees, vines—in fact all nursery stock has fitted us to furnish goods that are sure to please. Apple trees 4 to 5 ft. 8c. ea. $8 per 100; Cherries 4 to 5 ft. 25c. ea. $25 per 100. We sell direct to planter. Catalog free.

Midland Nursery Co., Des Moines, Ia.

STEEL ROOFING.

100 SQUARE FEET..... $2.00

We Pay Freight East of Colorado.

Strictly new, perfect, semi-hardened steel sheets, 6 and 8 foot long, the best roofing, siding or ceiling you can use. Nails free. Painted two sides. Flat, corrugated or V crimped. Write for free catalog on material from Sheriffs' and Receivers' sales.

CHICAGO HOUSE WRECKING Co. West 35th & Iron Sts., CHICAGO.

FELT ROOFING AT LOWEST PRICES. Two-ply felt roofing **65c** for 108 square feet; **92c** for three-ply. Less than cost of laying shingles. Red rosin sized sheathing paper, 75c for 500 square feet, weight, 40 pounds. For free samples of roofing or building paper, complete instructions for use, full information and our astonishingly low prices, cut this ad out and mail to us. Address **SEARS, ROEBUCK & CO., Chicago.**

NO HUMBUG. Farmer Brighton's

Swine V, Stock Marker and Calf Dehorner. Stops swine from rooting. Makes 48 different ear marks. Extracts Horns. Price $1.50. Send $1 for trial. If it suits, send balance. Pat'd May 6, 1902. Hog and Calf Holder only 75c.

GEORGE BOOS, Mfr., FAIRFIELD, IOWA.

This firm is one of the largest of its kind in the country, and sells its celebrated line of vehicles and harness direct to consumers, without the intervention of any middleman. Its catalogue is depended upon to do this, and therefore it is of necessity very complete. The book is well printed, well written and is in every way first-class. It should prove a good salesman.

S. L. Allen & Co., Philadelphia, Pa.—This catalogue advertises the Planet Junior line of garden and farm tools. These implements are known all over the world, and the catalogue shows some of the many uses to which they can be put. The book is a good one—as it should, be, describing as valuable a line as it does.

Bateman Mfg. Co., Greenlocn, N. J.—This firm, as usual, has a good catalogue. It describes the Iron Age farm and garden implements, of which a great many patterns are illustrated. The book shows all kinds of cultivators, from the small wheel hoe, to be pushed by hand, to the large cultivator for field crops. There are different implements for different classes of work, and all are good. In addition to these implements, the catalogue advertises dibbles, garden carts, asparagus knife, etc., all needed by Fruit-Grower readers.

Aspinwall Manufacturing Co., Jackson, Mich.—A good catalogue advertising the potato machinery manufactured by this firm.

Munson Nurseries, Denison, Texas—Catalogue telling about the grape vines for which Munson is famous, as well as a general line of nursery stock. A feature is made of what is claimed to be the best thirty-eight varieties out of the 75,000 which have been produced by Munson.

F. W. Dixon, Holton, Kan.—Seventeenth annual catalogue and price list of small fruit plants. Strawberries are a specialty with Mr. Dixon, and his list includes all those which are generally called for. In addition, he has all the bush fruits, perhaps the largest list of varieties of blackberries and raspberries which can be found. Grapes, asparagus plants and rhubarb roots are also offered.

Flansburgh & Peirson, Leslie, Mich.—Catalogue of small fruit plants, especially of strawberries, of which a full list of varieties is offered. In addition to fruit plants, this firm also offers celery plants, gladiolus bulbs, seed corn and seed potatoes. Among the new offerings is Peck's Early potato, an early potato for which strong claims are made.

W. F. Allen, Salisbury, Md.—Mr. Allen's catalogue is interesting to all engaged in strawberry culture, for his list of varieties is complete and his experience extensive. Besides strawberry plants, seed corn, asparagus and dewberry plants are offered. The catalogue should have been printed in better shape, for it is deserving of a better presentation.

M. Crawford Co., Cuyahoga Falls, Ohio.—This is another good strawberry catalogue, for M. Crawford is one of the best known strawberry specialists in the country. This year's catalogue is first-class in every way, and includes several new fruits, among them the Blowers blackberry, Kenoyer blackberry, and Comet currant. Gladiolus bulbs are offered this year, as usual.

J. H. Hale, South Glastonbury, Conn.—Mr. Hale offers fruit trees and plants of all kinds, also chestnut trees, but his catalogue is interesting chiefly because of its small fruits. The best varieties of strawberries are offered, among them the new Mead strawberry, for which great things are claimed. The originator describes this new berry as follows: "It is a good, thrifty grower, with healthy foliage, perfect blossom, and fruit as near perfection in shape and form as any I ever saw. Flesh reddish and solid, and to my taste one of the best in quality. It is a heavy cropper of good-sized berries, which hold their size well till close of season. Berries color evenly, with no white tips, plants do well on all kinds of land, and will make a good showing on very light soil." The catalogue is well printed, well illustrated, and as Mr. Hale wrote it, it goes without saying that it is very interesting.

W. S. Todd, Greenwood, Del.—Catalogue of strawberry plants, listing a full line of varieties.

Emerson Taylor Abbott, St. Joseph, Mo.—Catalogue of bee keepers' supplies; well printed and well illustrated.

A number of catalogues were received too late to receive notice this month.

Size of Seeds Affects Their Germination

About a year ago The Fruit-Grower published the results of some experiments at the Minnesota Experiment Station, which proved that large, plump seeds of garden vegetables produced better results than smaller seeds; the seeds not only germinated better and more quickly, but the plants were much stronger and more vigorous.

Before the meeting of the Society for Horticultural Science, at St. Louis, in December, other papers were read along this line. A particularly interesting one was by Professor Beach of the Geneva (N. Y.) Experiment Station, who is interested in growing seedling grapes and other fruits. He called attention to the fact that in growing fruit seedlings it is not possible to grow as many seedlings as one can grow of vegetables, field crops, etc., for the reason that the fruits occupy more room and longer time is required to bring them to fruiting. In planting fruit seeds, therefore, it is very important to use the largest, plumpest seeds, for it has been found that the larger seeds not only germinate more readily but this vigor is maintained in the plants which are grown. Seeds from large grapes were found to produce more vigorous seedlings than those from smaller berries. A great many Fruit-Grower readers are experimenting in growing strawberry seedlings and seedlings from other fruits, and the experience will be helpful. This experience will also offer an inducement for the purchase and planting of first grade garden and field seeds, even though they cost more, for it is more profitable in the end.

Hillis Dust Sprayer in New York.

The following letter received from J. C. Jacks, a prominent farmer of Batavia, N. Y., who tested our sprayer in the interest of Cornell University, needs no explanation:

"Batavia, N. Y., Jan. 16, '04. Dear Sirs: Replying to yours of the 12th inst, would say that your sprayer was duly received and thoroughly tested by the side of some others. Our trees in the east are headed high, and hence are difficult to reach with your machine, but for dwarf trees and bushes it gave perfect satisfaction. I used 10 pounds ground lime to one each of sulphate of copper, sulphur and Paris green. My currant bushes were alive with larvae, and one application cleaned them out effectually, and besides the leaves hung on all summer, while those untreated dropped their leaves early in August. I applied the same mixture to our potatoes, the beetles were conquered and the blight held off much longer than where liquid bordeaux was applied. In fact I consider your machine a complete success for bushes and potatoes. Yours with best wishes, J. Corwin Jacks."

We advise spraying very large and high-headed trees from a light vehicle. For further particulars address Hillis Dust Sprayer Co., McFall, Mo.

Missouri Valley Seed Co., St. Joseph, Mo., general Western distributors for Bowker's Disparene. See ad on page 18.

Missouri Valley Seed Co., St. Joseph, Mo., general Western distributors for Clark's Cutaway Harrows. See page 20.

Fruit-Growers Will Buy As Association

We have a letter from J. E. Freeman, Box 447, Guthrie, Okla., stating that the Logan County Fruit-Growers' Association is in the market for orchard discs, sprayers, berry boxes and crates, fruit baskets—in fact, all kinds of supplies for fruit-growers. This association will buy the articles needed for its members, and solicits propositions from Fruit-Grower advertisers. All persons interested in any of these lines should write Mr. Freeman, secretary, at the above address.

Try the New Majestic Tomato

This grand variety we claim to be the largest and most productive kind in existence. It yielded 1100 bushels per acre on our place last season, grown under ordinary conditions, and will, we believe, double it by special culture. The fruit is not coarse and rough like other large sorts but is of fine shape and unsurpassed quality. The seed is scarce this year and sells at 40 cents per packet of 100 seeds. We desire, however, to place our catalogue in the hands of every one who has a garden and have decided to send a trial packet of 25 seeds **FREE** if you mention paper in which you saw this advertisement.

$100 In Cash Prizes

$35 for largest tomato grown, $40 for largest yield from one plant, $25 for best photograph of a plant. Postal brings 10c worth of seed, a chance to win a valuable cash prize and the finest seed catalogue published. Our Iowa Seeds are unsurpassed

IOWA SEED CO., Des Moines, Iowa.

Seed Potatoes

Red River Early Ohio Seed Potatoes in carload lots.

FARGO SEED HOUSE

FARGO, N. D.

Watermelons The Halbert Honey is the best on earth for home use and local market. Seed by the originator. **H. A. Halbert, Coleman, Texas.**

Dewberry Culture

40,000 plants for 1904, Lucretia, Premo and Austin. Have fruited the Lucretia for 11 years without a singe failure. As the roots of the Dewberry run deep into moist ground, they will stand more drouth than any Blackberry or Raspberry. Address

GEO. L. GAST, LeCLAIRE, IOWA

STRAWBERRY PLANTS

43 varieties at $1.00 per 1,000 and up. Price list free.

R. E. ALLEN, Paw Paw, Mich.

Raspberry Plants

If best quality and lowest prices are what you are looking for, send your name and address to **Calame Fruit and Plant Co., Melville, Ill.,** for a catalogue and price list.

FLOWERS Park's Floral Magazine, trial, Park's Floral Guide, 1904, and Park's Seed Pkg., 1000 sorts, for a big bed that will surprise you with new flowers every day all summer, all for stamp. **Geo. W. Park, B58, La Park, Pa.**

BURRELL'S SEEDS

Carefully selected for critical planters. Not *how cheap* but *how good*. Valuable catalogue and Planters' Guide FREE.

D. V. Burrell, Rocky Ford, Colo.

MENTION THIS PAPER

Lightfoot Nursery Company

Offers for Spring, 1904: 150,000 June Bud Elberta Peach Trees and 1,000,000 Strawberry plants.

Peach Trees 6-12 in., $12; 1-2 ft., $15; 2-3 ft., $20 per 1,000. Boxed F. O. B. Cash with all orders.

Strawberry Plants $2 per 1,000. Aroma, Jessie, Sharpless, Bubach, Klondike, Thompson, Gandy, Brandywine, Excelsior, Warfield. Send for free catalogue. **LIGHTFOOT NURSERY CO., H. Lightfoot, Pres. & Manager, Chattanooga, Tenn.**

BERRIES 70 varieties of all sorts. Best of the old ones, with a good selection of the new—including Kenover Blackberry, King Red Raspberry and a dozen new strawberries. **MILLION PLANTS FOR SALE**

B. F. SMITH, (DRAWER C) LAWRENCE, KANSAS

Trees & Plants Free from Scale. NEW and CHOICE Varieties **Blackberries, Strawberries, Raspberries**

OUR FREE CATALOGUE WILL SAVE YOU MONEY. MYER & SON, Bridgeville, Del.

Tanks for Sprayers

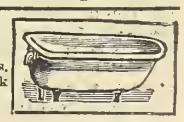
We make any size Tank or Barrel for any make of Spray Pumps. Any special size Tanks made to order. Send description of what you want. Apple barrels in season.

J.A. Schroer & Co., St. Joseph, Mo.

Inside Track on PLUMBING SUPPLIES

BUY AT WHOLESALE PRICES. Full stock, everything pertaining to the business. Warranted highest grade. Our prices save you 20 to 40 per cent on any article. Quick shipments. Tell us your wants. We'll describe goods and quote prices.

A. D. KAROL, 227-229 W. HARRISON STREET, CHICAGO, ILLS.



Major Holsinger's Department

Arkansas.

Not having been in Arkansas for some fifteen years, I packed my grip and took a run down on the Frisco, stopping off at Fayetteville. Here I was met by Colonel Vincenheller, director of the Experiment Station, and together we took the train for Lincoln. We passed through a splendid country. Arriving at Lincoln we took a hack and drove to the Parson Black place, some three miles out. The day was a little chilly and the roads—an apology. The colonel did the driving and it was as much as I could do to keep my seat. I was surprised after entering the state at the immense planting of fruit trees. There were trees everywhere, where the forests were cleared off—every spot of upland seemed covered with fruit trees, apples principally. Arriving at the "Parson Black place," I was introduced to Mr. Thomas, present owner, and informed him that I was on a pilgrimage to the original "Black Ben Davis." I was taken to the rear of the house and shown the identical spot where it had stood. The ground was disturbed recently by Colonel Vincenheller, he having dug for and found the stump of the original tree (Mrs. Reagan recently returned after an absence of seventeen years and pointed out the spot.) A Black Ben Davis was standing within two feet, having been planted there at the suggestion of H. E. Van Deman during his visit of last year, to perpetuate the memory of the original Black Ben Tree.

Standing, as I did, contemplating, I uncovered my head in honor of this great apple. To me it was hallowed ground. Why? Because of the traducing I received at the hands of certain people claiming that I was purchased when I decided as I did at the Topeka meeting in 1901 in regard to its distinct individuality.

Dr. Hartzog, president of the University of Arkansas, in some remarks after the adoption of the report of the committee, roasted Missouri on her grafts: "Missouri not being content with grafting everything at home came down to Arkansas and are now attempting to graft our seedlings." The doctor was most happy in his illustrations.

After gettting all the data here we went to Mr. Reagan's, who had been absent from the state for seventeen years (the Missouri committee did not see Mr. and Mrs. Reagan.) Here we got much valuable information, as they were owners and lived on the place when the original seedling tree first came into bearing. Mrs. Reagan told me she asked her husband "to cut the tree down, being a seedling and in the way." Mr. Reagan said, "Let it grow up and into the cedar for a shade, which they did.

Then we drove to William Norwood's and Mrs Norwood prepared dinner for us. Mr. Norwood is esteemed by many the best judge of apples in the state. Both he and Mr. Bain told us that Mr. B., to test his judgment of apples, handed him a Gano asking him "what he thought of it as a specimen of Black Ben Davis." Mr. Norwood immediately told him "it was not a Black Ben, but a Gano." At different times they made other tests, and in every trial Mr. Norwood was able to determine the variety correctly. We called on Mr. Bain who owns the nine trees first grafted from the original Black Ben seedling. He was very positive of its distinctiveness. Mrs. Bain gave me a warm welcome. "Why, we feel that you are one of us, seeing you each month in The Western Fruit-Grower." It is indeed a pleasure to be thus greeted. Having taken all the testimony available, we returned to Lincoln and to Fayetteville.

As the Missouri committee had given 1865 as the year, and learning from Mr. and Mrs. Reagan that this was an error, an abstract of title was secured, which says that Parson Black did not make his claim until 1869, and completed it in 1874. We felt that we had made our case. When I made my investigation in Topeka I simply announced that the apples were different apples. In this I am vindicated. The Arkansas committee, appointed to consider this matter, are the peers of any horticulturists in this country. The people comprising the Arkansas Horticultural Society are as intellectual, as upright and as high minded as any with whom it has been my pleasure to come in contect. They said with only a dissenting voice that Black Ben Davis is a distinct variety from Gano. "So mote it be."

Mr. R. M. Low writes me as follows: "I have received the following letter from Mr. J. C. Evans: 'Replying to your letter, the Arkansas Society appointed a committee, and they, without investigation, made their report the same day, declaring the two apples different—our committee was eighteen months collecting facts and figures for its report.—J. C. Evans.' How about this?"

I will say that J. C. Evans was not at the Arkansas meeting; his information was faulty. The committee did not report the "same day." They did investigate; I was there. I accompanied Col. Vincenheller to the home of the Black Ben Davis, talked with Mr. Stephen Thomas, who lives on the Parson Black place, besides Rev. and Mrs. Reagan, who had been out of the state seventeen years, and whom the Missouri committee did not see; talked with Rev. and Mrs. Bain, who own the trees grafted from the parent trees; dined with Mr. and Mrs. Norwood, the former being one of the most experienced fruit men in the state. The Arkansas people themselves were live evidence as to the introduction of this new seedling. The Missouri committee was on the ground one day; the Arkansas committee live there. Pray, which had the advantage?

Important.

Remember that in writing on matters that are peculiarly your own, and where the answer concerns you alone, it is in good taste to inclose a stamp for reply. One such is before me where the party wants to plant and wants to know "what varieties to plant, the best varieties, the kind of soil," etc.

Another sends me two apples for name, by express, on which I pay 25 cents. Now, I like apples, but 12½ cents is rather above market value. There is such things as running the joke too far.

This is one that we do not appreciate.

To Outwit Cut Worms.

I want to thank O. O. Penny for his suggestion. I surely will take his advice. Instead of leaving the cans connected in the center, wouldn't it be still better to melt the solder so as to form a loose band, then when the plants are quite large they could be sprung apart. I shall surely try it. Thanks Brotner Penny. Come again.

The Mole.

Well, this is "a pretty kettle of fish." I had no idea of stirring up the natives after this fashion. And to think that poetry is fired at me, too. Brother Truman, if you didn't belie your name, you wouldn't do it.

A. J. Masters lays aside all sentimentalism and goes for birds, beasts and reptiles that destroy his fruits. That is all right, but their knowledge of the habits of both should be known and understood, which knowing we would act differently.

While at the Arkansas meeting last week some one had branches of San Jose scale also the "Ladybird" upon the same which were busily engaged feeding on the scale. I heard a man giving a dissertation on this terrible scale and condemned the parties for their "recklessly exposing the community to its ravages." One of the lady birds was lost and all were concerned in finding it. This individual could hardly be consoled lest it "get away and the country be devastated with the scale." His knowledge of the San Jose scale was on a par with some of ours along other lines.

J. T. Wallace seems to be the only one who has made a scientific study, he being a convert from moleism. Now the hardest hitters are the reformed of all classes.

After chewing the mole rag he seems to have been a "Doubting Thomas" and while professing "admiration" had seemed to have doubts of "our little friend," and captures him and makes "a post mortem examination." He finds "his stomach full of sweet corn." Whether in ear or grain, he sayeth not. This being an Illinois mole, while mine is of the "Dixie or razor-backed hog." Now, friend Wallace, go a little further, study the mole more closely and report. The corn over the runways is undoubtedly the work of the vole—not moles. Can it be that the little rascal "post mortemed" was a vole? I am inclined to think so. They are great corn feeders.

Several at our recent meeting spoke to me of this article commending my

Fairfield
Strawberry

3 to 5 days earlier than MICHAEL'S EARLY. Twice as large and twice as productive; 1 doz. by mail, 50c. If you will send us the address of five fruit-growers, mention this paper and enclose 25 cents, 1c or 2c stamps, we will mail you 1 dozen plants.

WEST JERSEY NURSERY
Bridgeton, New Jersey

COMMONWEALTH Strawberry—One of the latest and largest yet introduced.
CLIMAX The largest and most productive new early strawberry on the market.
My 1904 catalogue fully describes some of the best old and new varieties. Plants are strong, well-rooted, fresh dug, and grown in rich soil with superior culture. You cannot afford to grow any but the best. Prices reasonable. Send for new catalogue.
C. W. GRAHAM. AFTON. N. Y.

Strawberry Plants
That Pay You to Plant

CLYDE GLEN MARY BUBACH IMP. WARFIELD IMP.

These plants of the varieties named were dug February 6, 1904, and photographed at once; you can see that there is nothing wrong with their root system. These plants were dug from between the rows in spots where the ground had thawed and were accidentally not mulched; where the mulching was not removed plants could not be dug. Had we been able to dig our best plants we have little doubt but what we could have shown much better specimens, but these are good enough for any one. There are other varieties that usually make larger plants than the Clyde and Glen Mary. The Bubach is under the average that we grow. Warfield is an average plant of that variety and we believe Warfield makes the smallest plant of any variety on our grounds.

Our Catalogue tells you all about our Superior Plants and Why we can Sell them at Low Prices.

If you treat them right you may be sure that our plants will grow and produce crops of berries that will make you the strawberry king of your county. We grow large numbers of other Small Fruit Plants. The New Cardinal Raspberry, the hardiest and most prolific of raspberries. The Mersereau, the coming blackberry. Write for catalogue at once. Address

F. W. DIXON, Holton, Kas.

Our Mid-Winter Bargain Offer

Can Ship on One Day's Notice. All Trees Thrifty, Free from Disease and Well Up to Grade.

Dormant Buds

75 cts. per 100; $7.50 per 1,000—Elberta, 50,000; Belle of Ga., 4,200.

June Buds

2 to 6 in., $1.25 per 100; $10 per 1,000—Elberta, 24,000; Belle of Ga., 3,000; Hiley, 500; Sneed, 650; Alexander, 450 Tillotson, 500; Chinese Cling, 300.

6 to 12 in., $1.50 per 100; $12.50 per 1,000—Elberta, 40,000; Carman, 8,350; Belle of Ga., 10,300; Hiley, 2,250; Sneed, 250; Chinese Cling, 400; Waddell, 1,000; Alexander, 150.

12 to 18 in., $2.00 per 100; $16.50 per 1,000—140,000 Elberta; 7,550 Belle of Ga.; 1,150 Hiley; 550 Sneed; 750 Alexander; 250 Chinese Cling.

18 to 24 in., $2.50 per 100; $19.00 per 1,000—150,000 Elberta; 1,100 Sneed; 550 Hiley.

2 to 3 ft., $3.00 per 100; $25.00 per 1,000—100,000 Elberta; 200 Hiley; 150 Sneed.

Apple

2 yr., ¾ and up, 5 to 7 ft., $6.00 per 100; $50.00 per 1,000—750 Ben Davis; 540 Jonathan; 240 Winesap; 330 Mo. Pippin! 405 M. B. Twig; 30 Early Harvest; 30 Baldwin; 105 Kinnard's Choice; 30 Gano; 30 Hargrove.

⅝, ¾, 4 to 6 ft., $4.50 per 100; $40.00 per 1,000—640 Ben Davis; 100 Mo. Pippin; 60 M. B. Twig; 80 York Imperial; 40 Baldwin; 40 Gano.

9-16, ⅝ 4 to 5 ft., $3.75 per 100; $35 per 1,000—1,500 Ben Davis; 125 Mo. Pippin; 100 Shannon Pippin; 200 Kinnard's Choice; 75 Wallace Howard; 50 Jonathan.

½,9-16, 3½ to 5 ft., $3.25 per 100; $30.00 per 1,000—3,750 Ben Davis; 1,425 Jonathan; 850 Winesap; 100 Kinnard's Choice; 75 M. B. Twig.

3 to 4 ft., $2.75 per 100; $25.00 per 1,000—1,450 Ben Davis; 425 Jonathan; 425 Winesap; 750 Early Harvest; 100 Limbertwig.

2, to 3 ft., $2.50 per 100; $20 per 1,000—825 Ben Davis; 175 Winesap.

1 to 2 ft., $2 per 100; $15 per 1,000—750 Ben Davis.

Above prices are F. O. B. cars here. All stock guaranteed true to name and well graded, strictly first class. Also have big assortment 1 year Peach, Plum, Raspberry, Blackberry, Strawberry, Gooseberry and Currant plants. Horseradish and Rhubarb roots, etc. Write for prices. We pack so as to assure safe arrival to any part of the country.

Chattanooga Nurseries
D. W. Hunter, Proprietor, Chattanooga, Tenn.

SEEDLINGS

Nursery and Forest Grown, to close out

50,000 Catalpa Speciosa, 1 yr. old, 6 to 12 in. at $1.50 per 1,000
25,000 Black Locust, 1 yr., assorted sizes, 6 in. to 4 ft. at $1.00 per 1000 and up.
100,000 Russian Mulberry, assorted, 1 to 5 ft. at 75c per 1000 and up
10,000 Red Bud (Judas Tree), 4 in. to 2 ft. at $2.00 per 1000 and up.
100,000 Tulip Poplar, 6 to 12 in., $2.00 per 1000.
50,000 Tulip Poplar, 1 to 2 ft., $3.00 per 1000.
50,000 Tulip Poplar, 2 to 4 ft., $4.00 per 1000.
40,000 American Birch, 6 to 12 in., $2.50 per 1000
50,000 Sugar Maple, 6 to 12 in., $2.00 per 1000.
100,000 Althea Rosea, 4 to 8 in., 90c per 1000.
100,000 Althea Rosea, 8 to 12 in., $1.80 per 1000.
20,000 Laurus Benzoin, 1 to 2 ft. $5.00 per 1000.
20,000 Dirca Palustrus (Leather wood), $2.50 per 1000.

Special prices on evergreens and ferns on application. Let us mail you a complete price list free.

PERRY BROS. NURSERY CO.
Irving College, Tennessee

Look Here! BARGAINS BARGAINS

First class Apple Trees for sale at less than cost of the growing. None finer, none better. Every one true to name and fully up to grade: no disease; certificate of inspection with every shipment. Send me your want list at once. The following prices stand good while stock lasts—first come first served. These prices are on Apple only, but a general line of Nursery Stock to offer in connection.

40,000 First-class Apple Trees, 2-year-old 5 to 7 feet 4c
45,000 First-class Trees, 2-yr.-old, 4-5 ft... 3c
20,000 First-class Trees, 2-yr.-old, 3-4 ft.... 2½c
5,000 Second-class Trees, 2-yr.-old, 2-3 ft.. 1¼c
15,000 First-class Trees, 1-yr.-old, 3-4 ft... 3c
38,000 First-class Trees, 1-yr.-old, 2-3 ft... 2½c
5,000 First-class Trees, 1-yr.-old, 1-2 ft... 1¼c

HILL TOP NURSERY
G. L. Christian, Prop., Hill Top, Boone Co., Ark.

Trees! Trees!

We offer 200,000 first class

June Bud Peach Trees

At special prices to reduce surplus stock. Trees grown on fresh new land. Stock very fine, vigorous, healthy, and true to name. Can give the best qualities and grades in June Bud Peach Trees ever offered for the price. Elberta, Bell Georgia, Carman, Heltz, Sneed, dormant buds 75c per 100, $5 per 1,000. June Buds, 2-6 in., 80c per 100, $7 per 1,000; June Buds, 6-12 in., $1.50 per 100, $11 per 1,000; June Buds, 12-18 in., $2.00 per 100, $14 per 1,000; June Buds, 18-24 in., $2.25 per 100, $16 per 1,000; June Buds, 2-3 ft., $2.75 per 100, $22.50 per 1,000.

CHICKAMAUGA NURSERIES
Chattanooga, Tennessee

Grape Vines by Mail Postpaid

Safe arrival in good condition guaranteed.

15 vines, 5 each Niagara, Brighton and Worden, $1.00.
20 Niagara, $1. 100 by ex. or frt., $3.00
20 Brighton, $1. 100 by ex. or frt., $3.50
20 Worden, $1. 100 by ex. or frt., $3.00
20 Catawba, $1. 100 by ex. or frt., $3.00
25 Concord, $1. 100 by ex. or frt., $2.50
10 Campbell's Early, $1. 100 by ex. or freight, $7.50.

Order early. On receipt of each order I will mail 12 Gladiolus bulbs, fine mixed colors, Free. The vines in early spring.

J. H. TRYON, WILLOUGHBY, OHIO

Well, Yes

We know the 20,000 Apple and the 6,000 Peach trees, we offer for sale, are all right. Have made, planted and marketed the products from 200,000 trees. (The famous Dean orchards in Southern Indiana), and in fifty years of such practical work, we have learned our business.

Dean & Billingsly, Greenwood Nurseries
Greenwood, Indiana.

SAPERDINE

Best Borer Prebentibe Knolwn

Four years' practical test. Absolutely prevents borers. Also protects bark from injury by rabbits and sheep. A scientific remedy. Application requires no apparatus. Cheap and efficient. One application yearly, in April or May. For further information address DR. H. O. BEESEN, NOEL, MO.

Pan American Strawberry Plants

Produce a large and continuous crop of fine, large strawberries (same year of setting), from Augnst 1st until winter. Fruits on new runners and old plants; a strong grower that needs no petting. Plants, $1.00 each; 6 for $5.00; 12 for $10.00; 100 for $75.00, by mail or express, prepaid, upon receipt of price. Address orders and inquiries to SAMUEL COOPER, Delevan, N Y

Hopedale Nurseries HOPEDALE ILLINOIS

General stock. Frult stock we offer is surplus of what we grew for our neighbors and friends. All propagated from hearing trees and plants. We sold stock for several great nurseries for six years, found it impossible to get it true to name, then started propagating ourselves. Now we are sure our stock is all TRUE TO NAME. Send for catalogue.

J. W. Griesenier, Prop., Hopedale, Ill.

Choice Strawberry Plants

Such as Bederwood, Warfield, Crescent and Splendid. Only $2.00 per thousand. That grand, new berry, **SENATOR DUNLAP**, only $2.25 per thousand. Thirty varieties. Catalog free.

Twentieth Century Fruit Farm, Atlantic, Ia
CHAS. I. TODD, Mgr.

position. I shall hope to hear from them.

Harrisonville, Mo., Jan. 19, 1904.

Major Holsinger: Knowing you to be a man who is deeply interested in the subject of fruit growing, I write to ask a favor. I am attempting to grow some fruit trees, and my last year's planting has made a splendid growth, but I find that some sort of a field mouse has been working underground and just above the ground to such an extent as to injure many of my young trees. At first I thought it was a rabbit doing the mischief, but upon close investigation I find in some cases the roots of the trees entirely cut off, and in many cases the tree is barked very much as a rabbit would do it, but it is a little closer to the ground than the latter animal usually works.

Yours truly, A. L. Burney.

The injury was caused by the voles or commonly known as "stump tailed mice." Clean cultivation is the best remedy. Clear away all weeds, grass or other litter, leaving the ground bare about the trees. These mice are common in our corn fields, living on the grain and when it is scarce they necessarily seek other food. A friend asked me to visit his orchard which the tenant had cultivated to sorghum. The trees had been carefully wrapped with "veneer" wrappers. I found many of these trees girdled in the roots and where they could get between the veneer and trunk, as was not infrequently the case, owing to crooked trees—they were girdled to top and in a few instances six inches above. Some were entirely eaten off in the roots. I found the mice made nests under the collar of the tree, receiving protection of the wraps. By clearing away all debris the further damage was averted. Remember, clean culture and voles do not work together.

Chestnuts.

I. A .W., Oakville, Kan., wants to know how to propagate chestnuts. Can they be grown successfully? It is important that the chestnut must be carefully handled to insure growth. It should never be allowed to dry out, but should be carefully placed in sand or in soil to insure growth. It is not important that the nuts should be indoors; they will grow as readily if bedded in the open, not more than 4 inches in depth. Freezing will not injure them. Are they a success? I think it very doubtful. I know of chestnuts that lived until they seemed to promise rewards, when for some reasons they blighted just when offering the most hopeful success.

I have trees now twenty years old; they are in good form yet, but I have little confidence in them. Why? I think that they cannot resist our very hot, dry climate. No, I do not think the chestnut will ever become domesticated in Kansas. I have more hopes for the pecan.

Annual Banquet of Missouri Valley Horticultural Society.

The annual banquet of the Missouri Valley Horticultural Society was held at the Coates Hotel. Nearly one hundred members were in attendance. It is unnecessary to say the menu was excellent, with plates at $1.50. One of the handsome features was the fruit display, which embraced a hundred or more jars of preserved fruits intended for the St. Louis exposition. Nearly every variety of fruit was thus shown in jars containing from one to five gallons. These fruits are in splendid condition and as the state has some 1,800 such jars, they must become a matter of interest in the exhibition. Mr. Goodman and Mr. Gano have had the preparation of these fruits and should feel an especial pride in their success. In addition the table was decorated with plants and flowers, giving it a beautiful effect.

And in keeping with the occasion, besides there was a show of some twenty or more varieties of apples which for condition as to beauty and keeping, were, in this year of fruit failure, a revelation. Mr. Lowmiller was awarded the first premium for the largest and best collection. Mr. Slaughter was awarded second premium.

One pleasant feature was a plate of potatoes sent to Friend Taylor. They were of the largest size, being irrigated tubers from Colorado. This was intended as a joke. A year ago Mr. Taylor being at his best, took occasion to compliment the dinner, but facetiously spoke of the potatoes, saying that "the caterer had fallen down with his potatoes.' This sally, like most of Mr. Taylor's jokes, was appreciated. The potatoes served were the size of small hickory nuts, having been cut out or moulded to serve in some French dish. So the management got even by providing the huge potatoes this year. All know Mr. Taylor is a potato specialist.

After dinner Secretary Goodman gave a talk on the coming St. Louis exhibition. Having a colored map, he was able to show the positions of the various enterprises and their relation to each other. He also spoke of the horticultural exhibit of the various states and especially of Missouri and of what they would consist. Missouri has about 6,000 feet of floor space which they expect to keep filled all through the fair season. He estimated that there was in cold storage 50 to 60 car loads of fruit in the several states intended for this exhibition.

Mr. Gano was asked to tell how he prepared the fruit on exhibition. He spoke of the method and difficulty attending their preparation. He also told of the difficulty attending the gathering of the fruit for exhibition purposes. He told us that he found one orchard in Jackson County from which he secured 100 barrels of Gano, the apple boaring his name, and of which there were specimens on exhibition.

Gerald L. Holsinger spoke of the Kansas exhibit. Owing to the lateness of the dato on which the superintendant was appointed to direct this work, they were unable to make a collection that is creditable to the state. Kansas has bushels where Missouri has barrels. Kansas has about 150 jars of fruit prepared that is keeping nicely. Apples in cold storage are also keeping well.

Mr. Thorp spoke for the agricultural display of Missouri. Mrs. Fannie Holsinger was called on and spoke of the social features of these meetings. Mr. A. Willis of Ottawa, had some pleasant things to say of our grand old society. The program was reported by the committee for the year 1904, which was adopted and ordered printed.

FRANK HOLSINGER.

Another One Writes About Growing Navy Beans.

I note question of C. R. L., as to the culture of the navy bean. Now, Michigan is considerably north of Logan, Mo., and I would suppose beans could be planted later at Logan than they could be in Michigan. In this latitude they should not be planted before June 20 nor later than July 1st; if planted too soon the weevil stings the green pods and deposits an egg in each bean that later eats it up. If planted too late frost catches them before ripe. If C. R. L. wants only a few bushels of beans for local use, he can plow up a piece of land that he failed to get a stand of corn on, or he can cut a crop of rye, fall wheat or clover and remove at once and use the stubble land, thoroughly plowed and harrowed. Plant with corn planter two or three inches deep, using small plates, drop hills, 12 or 15 inches apart, set runners in so rows will not be over 30 inches apart and he can cultivate with corn cultivator; if he wants to hoe beans, leave planter 42 inches wide and double plant so rows will be 21 inches apart; when ripe pull by hand, let dry and beat out with a flail. If he is thinking about raising large quantities for market, that is another proposition. They may be planted the same, but a special bean cutter is required to harvest them, a special threshing machine to thresh them, and a Clipper bean cleaner to clean them. The ordinary thresher splits too many beans and they are cnot readily cleaned in an ordinary fanning mill. The bean cutter resembles an ordinary riding corn cultivator equipped with a large slanting knife on each side inste ad of shovels, and cuts two rows at once. The knife runs about one or two inches below surface of ground, cutting them off clean, then vines are gathered with hay rake, bunched and when dry hauled to thresher. Hand picking after all machine work is done is slow and costly. Better start slow, if inexperienced, plant an acre or two and thresh by hand until you understand growing them before buying costly implements.

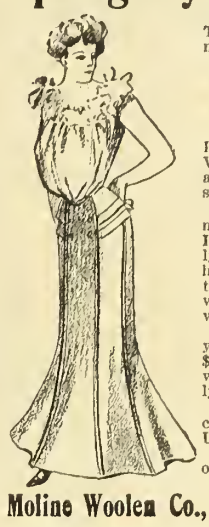
Has Brother Holsinger or any western reader of your paper tried the Mercereau Blackberry? Please let me hear how it succeeds in the West.

Clearfield, Iowa J. J. CLARK.

"I have read the Fruit-Grower from its first number and like it very much. much. Have sold my place in Iowa and bought a 40-acre orchard in Idaho, the Northwestern Iowa Horticultural and will want the Fruit-Grower at my new address."—B. Shontz, Correctionville, Iowa. Mr. Shontz is treasurer of the Northwestern Iowa Horticuleural Society, and will be missed in his old home.

On February 23 the Maine Agricultural College will begin a special training course in horticulture and poultry raising. The course will last three weeks, and the attendance of residents of the state of Maine is urged.

Spring Styles for 1904



THIS JAUNTY SKIRT made like cut at

$4.98

From the famous Moline Woolens which is a guarantee that it will hold its shape.

Sold direct from the mills to the consumer. It's a beauty, it fits neatly over the hips and sides, has that graceful flare at the bottom which gives a willowy effect to the whole figure.

We sell the cloth by the yard at 95c, $1.00 and $1.15, 56 inches wide, which we guarantee strictly all wool.

We pay the express charges to any part of the United States.

Catalogue and samples of cloth sent free.

Moline Woolen Co., Dept. D, Moline, Ill.

NOX-EM-ALL CREAM SEPARATOR

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GET MORE CREAM
BETTER BUTTER
BETTER PRICES
SAVE TIME, LABOR AND EXPENSE.

Write for circular and prices to

F. B. KARL, Mfr.
Sandusky St., DELAWARE, O.

SPECIAL BARGAINS

For cash order we furnish folowing collections, packed and delivered at the express or freight office here.

No. 1, $1.00—25 Peach, 3 to 4 ft.—5 Triumph, Champion, Elberta, Salway, Family Favorite.
No. 2, $1.00—1 Crimson Rambler Rose, 2 yr.; 1 Hydrangea, 1 Clematis Jackmanii, 1 Althea, 1 Honeysuckle, 1 Spirea, 1 Privet.
No. 3, $3.00—50 peach 3 to 4 ft., 10 each —Triumph, Champion, Elberta, Salway, Bokara, 5 English Morello Cherry 3 to 4 ft., 2 quince, 6 Concord grape.
No. 4, $5.00—50 peach, same as No. 3; 6 Keiffer pear, English Morello cherry 3 to 4 ft., 2 quince, 12 Concord grape. 12 Synder blackberry, 1 Honeysuckle, 12 Cumberland raspberry.

KANSAS CITY NURSERIES
Blair & Kaufman, Props., Kansas City, Mo.

75,000 TREES

For Sale at Low Prices. Leading varieties of **Apple, Cherry, Peach and Plum.** First-class stock. New York State grown, true to name, free from disease. Write us quantity you can use.

Western New York Nursery Co., Rochester, N. Y.

Spring Time the Best Time

To make preparation and insure BIG DIVIDENDS from your Fruit Trees. Send 5 two-cent stamps for "Success and Failure in Orchard Growing," by practical orchardist, to

Messick Tree Fertilizer Co.
QUINCY, ILLINOIS

SEED CORN

Have you ever grown Bell's Early Golden Surprise field corn? Do you know it is the biggest and best early corn on the market? We are the originators of this corn, and can furnish you the pure, genuine seed. Write us today and we will send you our 1904 catalogue free. It contains Field corns, Garden Seeds, Small Fruits, Fine Poultry, Chester White Hogs and Polled Angus Cattle.

SIMON BELL & SON
Box 2, R. D. No. 3, Junction City, Ohio

A NICKEL

Buys a XX two-year-old apple tree, grown in my nurseries in Missouri. Every tree Guaranteed. Address all communications to F. W. Kelley, care International Har. Co., Parsons, Kan.

APPLE TREES DEVELOP

naturally into best fruiters in our climate and under our propagation. The strong rooting, vigorous growing, health and shapeliness of our trees carry them into all parts of the country.

"The trees I ordered from you in November came duly to hand in splendid shape and condition."
W. S. KIDDER, California.

"Received trees in good condition and am very much pleased. They are as nice a lot of trees as I ever saw for the money."
GOTTHOLD ROENTZSET, Rhode Island.

"My trees arrived in first class condition and I am well pleased. They are first class and have fine fibrous roots and a good bushy growth of top." H. P. BOHLANDER, Illinois.

Harrison's 500,000 Trees

for planting are the best that can be grown. We have all season's apples, over 100 varieties. The great market apples, **Ben Davis, York Imperial, Northwest Greening, Wine Sap, Baldwin, Grimes Golden, Missouri Pippin, Rome Beauty** are a few winter varieties. Everything for summer and fall bearing. **Safe delivery guaranteed everywhere.** Our salesman, the Harrison catalog, free.

HARRISON'S NURSERIES, BOX 32 BERLIN, MARYLAND.

Gardening Notes

The Possibilities of a Town Lot.

Some of the Fruit-Grower readers may have heard of James Ballard of Red Oak, Iowa, the poet and philosopher. He is a retired preacher, living in a little cottage in the edge of town and is noted all over the corn belt for his brilliant and eccentric poems. He is also a gardener and a lover of nature and gets more crop and income from his two town lots than many a farmer does from forty acres of land. The two lots, each one-seventh of an acre, are kept up to a high state of fertility by liberal manuring and deep plowing and yield an enormous amount of garden stuff. Mr. Ballard keeps an exact record of his crops and sales and, writes me that from one lot he sold $59.00 worth of produce last year and from the other one $51.00 worth. This was not from hotbeds, either, but just common outdoor stuff. Think of it, $110 of crop from two-sevenths of an acre in a country town. The first lot was sown in radishes broadcast very early, which sold for about $25. After they were off it was plowed and sowed to radishes again and then sweet corn drilled in every five feet. After $5 worth of radishes had been pulled the corn was cultivated well and made a crop, selling for $8. A headland that had been planted to beets and beans brought $2, and then it was all plowed again, worked down well and sowed to radishes. This, the fourth crop for the season, sold for $19. A fifth crop, radishes again, was tried, but failed. The frost cut them short with only 20 cents sold. The other lot was first put in early radishes, which sold for $26, and they were followed by a crop of wax beans, which sold for $25. Now, there was nothing uncommon about the soil or the market. It simply shows what can be done by a man that is in love with gardening and will work his land to its utmost limit. There are dozens of vacant lots growing up to weeds in every town that are capable of just such crops, if the right man will go at it in an intelligent manner. Mr. Ballard writes me that he settled in Red Oak ten years ago, an old man, $300 in debt and no capital. He settled on the out edge of town in a little house on some cheap lots that no one else wanted. "Now," he writes, "I am out of debt, worth $1,000 and doing well."

That may not seem very big to some of you, but it seems to me there are many men in this world worse off than Mr. Ballard, with his little home and two lots and his three or four acres of rented land in garden. Happy, contended, independent and proud of his work.

Watch the potato cellar. Too much cold or too much warmth will spoil your seed potatoes. Severe chilling, even when it does not amount to actual freezing, will ruin them for seed. On the other hand, if the cellar is too warm, the potatoes sprout prematurely and by the time planting time comes they are soft and worthless. Keep the cellar ventilated and cool, but not below 35 degrees. Better see to it right now.

How To Make a Hotbed.

Hotbeds are intended for starting vegetable plants, such as sweet potatoes, cabbage and tomatoes, earlier in the season than they could be grown in the open ground. The heat is furnished by the fermentation of vegetable matter, the most convenient and eligible material being stable manure well mixed with straw and thoroughly wet down.

For small hotbeds the common method is to dig a pit from one to two feet deep and fill with manure, tramping it down, and, if dry, adding water. It must be fresh, as manure that is heated once is no good. After tramping and wetting, cover with rich, mellow soil to the depth of six inches for planting cabbage, tomato and similar seeds. Build a frame for the bed a little smaller than the pit. The object of this is to let the frame settle evenly with the bed and avoid openings on the sides. The north side of the frame should be made the highest, so as to give a southern exposure to the top and protect the plants from the north wind. Bank around the sides well with dirt or manure. Cover the beds with glass or canvas, or in cold weather use both.

Test the soil occasionally with a thermometer by inserting it under the surface in different parts of the bed. After the bed is warm and the first rank heat is spent, plant the seed in narrow rows. Keep the temperature at about 80 to 90, and the soil moist. Give some air on warm days, and as the plants get larger, leave the beds open much of the time to harden them.

For sweet potatoes, the beds should be made at least two feet deep, to get plenty of heat. After tramping and wetting the manure, cover smoothly with two inches of dirt and place the frames. Then put on a thin layer of sand, which must be pure, and wait for the beds to warm up. Start in early enough to have them ready for the potatoes by April 10. The potatoes should be laid as soon as possible after taking from the storage, as they spoil and lose vitality easily. For this reason they should be from near by, if possible, and not shipped from a distance.

Lay them close together in the beds, but not touching, and cover with an inch or two of sand. Cover the bed with canvas and keep covered until the sprouts appear, and then put on sand and soil mixed till the potatoes are covered about four inches, not more. If the thermometer goes above 90, cool the bed by making holes with a stick to let the heat out. Do not water until the plants are up, and then sparingly till they gain size. As they get larger, they need plenty of water. Rotting potatoes can be found by the mouldy spot on the surface over them, and should be removed

Garden Notes.

How about your seed corn? Yes, of course you have some picked out, but will it grow? The late cold snaps have spoiled lots of seed corn that was not thoroughly ripened and dried out. Corn that looked well in the fall is no good now. Test it and make sure. It is an easy matter; all you have to do is to take some of the corn and put it between folds of dampened blotting paper or soft newspaper and keep it warm and moist for a few days. A good way is to put the corn, paper and all into a cigar box, with the lid tied down, and put it up behind the stove. A few days will tell if it is good. If it is not good, you had better be rustling for some seed, and don't take the first that comes along, either. Get some that is really good.

About half of the sweet corn that is being sold this winter is no good. It looks nice, but that November hard freeze caught it out and it is pretty poor stuff. Test your seed before you plant it and then you will know how thick to plant to get a stand.

First nice day in the spring, even if the frost is still in the ground, sow some early radishes. Just take a nice piece of fall plowing and sow the radish seed broadcast and harrow it in. A late freeze may get the radishes, but the chances are about even for them to escape, and if they do you will have some early radishes that will be ready sale. They will taste mighty good, too. Try it. The seed is cheap and that is all you will be out. No tending and only a few minutes planting. If they fail you can still use the land for other crops.

Early peas of the smooth sorts can be planted as soon as the ground is dry enough. In fact the sooner the better. I have had the ground freeze six inches deep after the peas were sprouted and never hurt them. The wrinkled peas would rot, but I have given up raising wrinkled peas for early, anyway. The smooth ones take less petting and are always on hand with a good crop, no matter what the weather.

Onion seed is another thing that can be planted very early, too. They are hardy things and will stand lots of cold When planted early they come on ahead of the weeds. Why not put in an acre? The seed is cheap this year and of splendid quality. An acre of onions means lots of work, but it is big money, as a rule. I have had 750 bushels on an acre. Figure that up at present prices of onions.

You ought to have some cabbage and tomato plants started in the house or in a hotbed pretty soon. In the Southern states they could be planted outdoors now. Here in Iowa we plant cabbage seed outdoors on St. Patrick's day. Plant the seed right where they are to stand and never reset. Just thin them out to a stand. Try it.

Get a garden drill this year, by all means. If you think you cannot afford one of the big ones, get a little one of the kind sold by seedmen for $1.25. They are good tools for the money and do nice work.

Start an asparagus bed this year. The plants are cheap and the seed is chepaer yet. You can grow the plants yourself or plant the seed where you want the b d to be, but you can save a year's time by buying the plants. Get good strong one-year plants and set them a foot apart in the row on rich land. That's all.

Get your seed order in early to some of the many good seed men who have ads in the Western Fruit-Grower this month. They are all good firms or they would not be allowed here. Later on they will be rushed with business and you will not get as prompt or careful service as you will by ordering now.

Try some peanuts this summer. They will grow anywhere in the central states, or anywhere in the corn belt for that matter. It is a mistaken notion that they can be grown only in the South. I grew them here in Iowa last summer and had a good crop. They are as easy to grow as beans. I planted mine and tended them just like beans or peas and had no trouble at all. Some of the hills I believe had two quarts

If you expect to need much cucumber seed, or muskmelons, or wax beans, better get your order in early and insist on immediate delivery. There is not enough to go around on any of these and some one is going to get left. Some kinds of sweet corn are nearly as bad.

HENRY FIELD.

Shenandoah, Iowa.

Tomatoes For Canning.

Our experience the last season with a dozen varieties of tomatoes for canning jutify us in repeating the statement that Spark's Earliana has proven to be the best variety for this section, as it ripens before any other variety, and always bears abundantly. On our own ground a single plant has been known to produce as many as forty tomatoes of large size; smooth, and of a bright, red color. This plant was not more than two feet high but was branched out in every direction,

HANNA BARLEY
SPELTZ
MAC WHEAT
OATS
BROMUS
ALFALFA &c.

SALZER'S SEED NOVELTIES

SALZER'S NATIONAL OATS.
Yea, farmers of America, lend me your ears, while I chant the merits of this new Oat Novelty.
Editors, Agricultural Writers, Institute Orators, all talk and write about this new Oat. It yielded in Wis. 156 bu., in Ohio 187 bu., in Mich. 231 bu., in Mo. 255 bu. and in N. D. 310 bu. per acre, during 1903, and in 1904 you can grow just as easily 300 bu. per acre of Salzer's National Oats, as we can. Your land is just as good, just as rich and you are just as good a farmer as we are. We bope you will try this Oat in 1904, and then sell same for seed to your neighbors at a fancy price, next fall.

Macaroni Wheat.
It does well on arid, dry lands, as also on rich farm lands, yielding from 30 to 80 bu. per acre.

Speltz and Hanna Barley.
Greatest cereal food on earth. Yields 4 tons elegant straw hay and 80 bu. of grain, as rich as corn, oats and wheat ground together! Does well everywhere. Hanna Barley grows on dry, arid lands, yielding 60 bu. per acre.

Salzer's Home Builder Corn.
Positively the biggest eared early corn on earth, yielding in Ind. 157 bu., Ohio 160 bu., Tenn. 198 bu., Mich. 220 bu. and S. D. 276 bu. per acre. It is really a marvelous corn. Sinks its roots deeply after moisture and nourishment and grows like a weed.

Bromus Inermis and Alfalfa Clover.
Bromus Inermis is the most prolific grass for permanent pastures on earth. Yields 7 tons hay per acre. Good on sand, lime, clay, gravel—yes, on all kinds of soils!
Alfalfa Clover produces more hay and better hay than any Clover known. It is good for 7 tons per acre.

Potatoes 736 bushels per Acre.
The Editor of the RURAL NEW YORKER says, "Salzer's Earliest Potato is the earliest out of 58 early sorts tried, and yields 464 bu. per acre, while Salzer's Early Wisconsin yielded for them 736 bu. per acre. Salzer's Potatoes for yield challenge the world!"

FOR 10c IN STAMPS
and the name of this paper, we will send you a lot of farm seed samples, including some of above, together with our mammoth 140 page illustrated catalog. Send to-day.

JOHN A. SALZER SEED CO. LaCROSSE, WIS.

FREE SEEDS. Wonderful Offer

Two regular sized packets of choice vegetable and one of beautiful Flower Seeds, and sample packet each of Pencillaria, Bromus Inermis, Speltz, Japanese Millet or Billion Dollar Grass, Essex Rape, Teosinte, Thousand Headed Kale, Vicia Villiosa, Soji Beans and Kaffir Corn and our catalogue manual. We will also send to every new customer answering this advertisement

A Due Bill for 50c Worth of Seeds

to be selected from our catalogue, FREE. We only ask you to send us a dime or 10 cents in stamps to help pay the postage and packing. This offer is simply great and you cannot afford to miss it. We are very anxious to have you get our Catalogue Manual. It is illustrated and contains much valuable information and description in regard to buying, planting, tending and caring for all crops. All the new things of known merit are described and priced. Iowa is the garden spot of the whole world. The owners of the Berry Seed Company live on a farm in the best part of this great state and raise much of their own seeds, therefore are in a better position to furnish stronger and purer seed for less money that any other seed house. It is from farmer to farmer at wholesale prices, with no middleman's profit. The catalogue is free for the asking. It will save you lots of money. Be friendly. Write us.

A. A. BERRY SEED CO.,
Box 64, Clarinda, Iowa.

FIELD'S WHITE ELEPHANT

The biggest white corn grown. As early as Silvermine and a half larger. Will average over a foot long in a good crop, and ripen anywhere in the central corn belt. A pure white 100 day dent corn that made over 13,000 bu. on 140 acres of Iowa land and was ripe in September. It is a corn with a peculiar and interesting history, and is entirely distinct and different from any other white corn. Sold in the ear or shelled at farmer's prices, and your money back if not as represented. Send for free catalogue, photographs and samples of this and other varieties of corn. $5.00 worth of seed free on club orders. Ask about it.

HENRY FIELD, SEEDSMAN
BOX 15, SHENANDOAH, IOWA

SEEDS SOLD BY FIELD ARE THE SEEDS THAT YIELD

The Ear Seed Corn Man

SEED CORN

Fire-Dried
Pure-Bred

Cut out this ad, and return to us and we will Send You Free a copy of the most complete, illustrated, descriptive seed corn catalogue ever printed. It fully describes all the leading and best varieties of corn, which will double your yields. Ears 12 to 15 in. long, weigh 1½ to 2 lbs. each. Dont lay this paper down until you have sent for this catalogue. It means dollars to you.

J. B. Armstrong & Sons
Seed Corn Specialists, Shenandoah, Ia.

Free
The biggest and best seed corn catalog ever printed.
Free

WESTERN SEEDS For Western Planters 1904 Seed Catalog Ready
Send at once for FREE Copy.
We make a specialty of Field and Grass Seeds. Choicest stock Alfalfa, Brome Grass, English Blue Grass, Cane seed, Millets, Macaroni Wheat, Dwarf Essex Rape, Russian Speltz, (Emmer). Full line Tree Seeds. Most seeds very scarce. Order Early.
Write for Free Catalog to Kansas Seed House F. BARTELDES & CO., LAWRENCE, KANS. or Branches—Denver, Colo, and Oklahoma City, O. T.

NORTHERN GROWN SEEDS

N.K.&Co's. MINNESOTA RED GLOBE ONION

Our Vegetable Seeds are earliest, most productive. One of our very best specialties is Minnesota Red Globe Onion, earliest, finest shape, best color, longest keeper. Always commands highest market price.

TO HAVE YOU TRY THEM we will, for 14c(silver or stamps)send pictured catalogue and 9 packages of our STERLING Seeds. 14¢

Field GIANT 50-TON CARROT, largest field carrot; enormously lolder; high golden color (for butter); easily harvested.
MOLD'S BLACK BEAUTY OAT, wonderful new variety from England: superior to white oats; yields enormously; very stiff, strong straw.
SPELTZ, yields double quantity of oats, wheat or barley, makes better feed; straw fine for fattening; ripens early; resists drouth and frost; thrives on any soil.
CALIFORNIA WONDER BEAN, heaviest yielding bean ever known; one bean produced 156 pods, 1168 beans by actual count.

Garden NEW TRIUMPH RADISH, matures in 20 days, globe shape, striped horizontally with bright scarlet on pure white; a unique and striking novelty.
N K & CO STERLING LETTUCE; beautiful crisp heading variety; rich golden center; never coarse; finest lettuce grown.
N K & CO MINNESOTA RED GLOBE ONION, earliest, most perfect shape; finest color; no scullions; longest keeper; heaviest yielder.

Flower N K & CO GIANT FANCY PANSY flowers extraordinarily large, exquisite colorings; a distinct and remarkable strain, greatly admired.
GOLDEN CLEAM SWEET PEAS, deep primrose yellow; large flowers, long stems, rare novelty.
CASH PRIZES for largest yields of Peepo' Day Sweet Corn. Earliest. Sweetest.

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SEEDS

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Made to Build New Business. A trial will make you our permanent customer.

Prize Collection Radish, 17 varieties; Lettuce, 12 kinds; Tomatoes, 11 the finest; Turnip, 7 splendid; Onion, 8 best varieties; 10 Spring-flowering Bulbs—65 varieties in all.
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Write to-day; Mention this Paper.

SEND 10 CENTS
to cover postage and packing and receive this valuable collection of Seeds postpaid, together with my new Instructive, Beautiful Seed and Plant Book, tells all about the Best varieties of Seeds, Plants, etc.

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"Once Grown Always Grown"
The Maule motto for more than 25 years. My new

SEED BOOK for 1904

Cost over $50,000 to publish. If you have a garden you can have a copy for the asking. Send a postal for it to
Wm. Henry Maule, Philadelphia, Pa.

FREE SEEDS
Vegetable and Flower
We will send our 1904 catalogue and one packet each Lettuce, Radish and Onion; also 75 varieties of flower Seed; Phlox, Sweet Peas, Pansies, etc., in a coupon envelope, which will be accepted as 25c. if returned with an order from our catalog. All for 10c. to pay postage.
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BEST Ever Grown.

None better and none so low in price, 1c per pkt. and up, postpaid. Finest illustrated catalogue ever printed sent FREE. Engravings of every variety. A great lot of extra pkgs. of seeds, new sorts, presented free with every order. Some sorts onions only 55c per lb. Other seed equally low. 40 years a seed grower and dealer and all customers satisfied. No old seeds. New, fresh and reliable every year. Write for big FREE catalogue.
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Seed Oats

65c a bu. and up.
The cleanest, heaviest, best yielding oats are Michigan Northern Grown. Hammond's Morgan Feller, Hammond's English Wonder Czar of Russia and Michigan Wonder, the four best varieties. Rust proof, stiff straw, have yielded 220 bu. per acre. Catalog describing these oats and all other farm seeds free on request. HARRY N HAMMOND SEED CO. Ltd., Box 82 Bay City Mich.

SEEDS GARDEN, FIELD, FLOWER.
Poultry Supplies
T. LEE ADAMS
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and was so heavily loaded that there could scarcely have been another tomato grown on its branches. The Acme was two weeks later, and did not mature one-third as many tomatoes. Dwarf Champion was of large size, and as smooth as any one could wish, but equal to Earliana in flavor or size. We advise every canner to at least give to this variety a trial on small scale until they are fully convinced that it is well adapted to their immediate locality. We are confident that with us Spark's Earliana will produce one-third more bushels to the acre than any known variety, and is one of the best canning varities that we have ever seen.

E. W. JONES NURSERY CO.
Woodlawn, Carroll Co., Va.

Growing Onion Sets.

T. H. Smallwood, Fort Scott, Kan., sends the accompanying illustration, showing his field of onion top-sets. Concerning this crop, which Mr. Smallwood grows every year, he says:

"This is a field of what is known as 'red-top summer onion sets.' We commenced raising them in a small way in our garden nearly twenty years ago, and have steadily increased until in the

MR. SMALLWOOD'S FIELD OF ONION SETS.

field shown in the illustration we have about 100 bushels. The pickers are girls which have helped us with our berry crops, and they are just commencing on this field of onion sets. We have always been able to sell our crop right here in Fort Scott. It is wonderful how many of these sets people plant in their home gardens for use as early green onions, and also for early dry onions. They mature and are ready to pull as dry onions about the first of July. We seem to have the market to ourselves. Others try them occasionally, but soon drop out. There is another set which grows similar to this variety, which is a winter onion set. It grows very early green onions, but never forms a bulb. Dishonest parties often sell these as summer sets, and so deceive and disappoint the purchaser."

Platte Purchase Horticultural Society.

This organization held the largest meeting in its history on February 6, the meeting being held in St. Joseph. The society had accepted the invitation of the Missouri Valley Seed Co., and the members were the guests of this firm at luncheon. About 150 fruit farmers were present.

The special subject under discussion was spraying and spraying appliances. This was very interesting, because of the earnestness with which the advocates of the dust process and the liquid spray presented their respective claims. Mr. W. D. Maxwell told his experience with both liquid and dust sprays. He has tried both, and while he was successful with the liquid spray, the dust is so much more easily applied he will never use the liquid process again.

J. W. Clark had used only the liquid. He sprays with the standard formula—four pounds of lime, four pounds of copper sulphate, four ounces paris green, and forty gallons of water. He sprays first just before the buds open, again just as the blossoms are falling, and again in ten days. Perhaps a fourth spraying can be profitably done, to help control the later broods of codling moth, which may have escaped the first applications.

Mr. N. F. Murray had used both liquid and dust sprays, and both are good. The chief difficulty is to get orchardists to use either process persistently. The season of 1903 should not be taken as a guide for anything; the season was so unusual that one's experience that season should count for nothing. Mr. Murray said there had been much damage from canker worms, but he believes that the man who will not control this pest ought to have his orchard eaten up. In fighting this pest it is necessary to apply the poison in time and to apply it thoroughly. The worms will appear about the time when the trees are in bloom, and for this reason it is best to spray once just before the blossoms open, then just as they are falling, so as to avoid spraying while trees are in bloom.

Mr. Bond corroborated this statement. He had controlled canker worms by spraying with the dust, but had begun just as soon as the larvae appeared—in fact, he began when they were so small that he had to put on his spectacles to find them.

Mr. Gabbert had also controlled canker worms with the dust, but had greatly increased its strength.

Mr. Brazelton gave his experience in spraying. They had used both dust and liquid, but preferred the liquid. Mr. Murray thought both liquid and dust processes could be used to advantage in an orchard, under different conditions.

There was much interest in the matter of spraying with Disparene, many members expressing their intention of using it this year. It was especially recommended for spraying against canker worms, where it is often necessary to use a strong insecticide, and at the same time one which will not burn foliage of trees.

At the next meeting, which will be held in the courthouse in St. Joseph, Mo., March 5, W. G. Gano will talk on the subject of "Packing and Handling an Apple Crop;" J. H. Murray will discuss "Experience of the Year 1903 in Fruit-Growing," and L. C. Wilson will discuss "The Effect of Severe Pruning Upon Peach Trees."

The members discussed prospects for fruit. It was agreed that everything is in good condition except peaches, which have been badly damaged. Reports differed as to extent of injury. N. F. Murray said that Champion, Crosby and Triumph trees, on favorable locations, have still enough live buds for half a crop. J. H. Murray could find no live Champion buds on a high ridge. Mr. Brazelton found a few live buds on Champion, Crosby and Alexander, and a great many more on seedling trees. Mr. Wilcox of Andrew County said his buds were all dead, and Mr. Maxwell reported few live ones. L. C. Wilson said that he had enough live buds left for one-third to half a crop. Mr. George Murray, from Platte County, reported that seedlings promise well, but there are few live buds on budded sorts.

Before adjournment the society thanked the Missouri Valley Seed Co. for its hospitality and for its exhibit of spray pumps, fruit packages, spraying chemicals, etc.

Missouri Valley Seed Co., St. Joseph, Mo., general Western distributors for Bowker's Disparene. See ad on page 18.

Missouri Valley Seed Co., St. Joseph, Mo., general Western distributors for Clark's Cutaway Harrows. See page 20.

43 FLOWERS 30¢

Worth $1.25

A SPECIAL OFFER made to introduce our goods. Satisfaction guaranteed or money refunded.

20 Pkts. Seeds

1 Pkt Pansies, 10 colors, mixed. 1 Pkt. Diamond Flower.
" New Candytuft "Empress." " California Sweet Peas.
" Washington Weeping Palm. " Double Chinese Pink.
" Mary Semple Asters, 4 colors. " Carnation Marguerite.
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" Bouquet Chrysanthemum. " Poppy—American Flag.
" Forget-me-not "Victoria." " Umbrella Plant.
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23 BULBS

1 New Begonia, "Splendens," 1 Summer Flowering Hyacinth, 1 Double Pearl Tuberose, 2 Butterfly and 2 Hybrid Gladiolus, 8 Fine Mixed Oxalis, 2 Fair Maids of France, 2 Hardy Wind Flowers, 2 Lovely Cinnamon Vines, 2 Splendid New Canna Lilies—1 crimson, 1 "Novelty."

A Return Check Good for 25 Cents on first $1.00 order; also our

New Floral Guide, telling all about Roses and 400 other choice flowers. All postpaid, only 30c.

THE CONARD & JONES CO.
"Growers of the Best Roses in America."
Box 51 WEST GROVE, Pa.

GRAINS OF GOLD

FREE TO FARMERS.

Last spring, we introduced the new Golden West Corn, and it was at once recognized as so superior to all other varieties that we could not supply one-fourth the demand. The only variety of corn bred on true scientific principles, first the plant, then the ear, and it has astonished every one who tried it by its vigorous growth and wonderful productiveness. Ears large, grain long, cob small color bright golden yellow.

FREE. We want you to see it and will send a small sample with a copy of our large 136 page illustrated catalog free if you mention this paper. Our catalog is the most valuable book published for practical farmers. It will pay you to see it.
IOWA SEED COMPANY, DES MOINES, IA.

SEED CORN.

Our Pure Bred Seed Corn—Thoroughly matured and well dried; hand picked; sorted and selected; tested and best quality; yields 20 to 40 bu. more per acre than ordinary sorts, and has often made 100 bushels per acre.

SEED OATS. Try some of our new improved varieties this year.—They are bright, clean and pure stock; are hardier, more vigorous and yield better; strictly Iowa grown new crop, at low prices. Our big 20th annual illustrated descriptive catalog of all Farm and Garden seeds mailed FREE if you mention this paper.

RATEKINS' SEED HOUSE, - SHENANDOAH, IOWA.

SEED CORN

Note the type of ear, shape of grain. That's the kind we offer. Specially bred and grown. Carefully selected, all the leading varieties. We sell only fresh seeds, everything in

VECETABLES, FLOWERS AND FARM SEEDS.

No worthless "bargain" offers. Only sure growers at right prices. Ask for fine free Catalogue.

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A CANNING FACTORY

at home. Farmers don't delay. Investigate. Save your surplus fruit by canning. Easy to learn. Catalog free. M. FOERG.
Meridian, Mississippi.

Berry Growers!

It Is to Your Advantage to Use Our White Spruce Berry Boxes

Box material used by California shippers. Last season we introduced this box on this market, and proved it to be superior to POPLAR, such as is generally used.

It Is Stronger, Has No Odor, Will Not Mould,
No Loss in Working and Costs No More

YOUR BERRIES WILL SELL FOR MORE IN THESE BOXES THAN IN THE COMMON POPLAR BOX. LET US SEND YOU SAMPLES & OUR PRICES, LOCAL OR CAR LOTS

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MILLET, CANE, KAFFIR, POPCORN, SEED CORN, ALFALFA, TIMOTHY, CLOVER

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FIELD, GARDEN, FLOWER

Everything for Farmer or Gardener, Garden Tools, Seed Sowers, Bale Ties, and Onion Sets.

LARGE STOCKS Clover, Timothy, Alfalfa, Millet, Cane, Kaffir, Seed Corn, Potatoes, Blue Grass, Orchard Grass. Write for our Catalogue—Free.

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OUR CLAIMS BACKED BY OUR POTATOES

We are very careful of our reputation on seed potatoes. Nothing is sold that will not back up our guarantee to be just as respresented. All of the standard sorts and a few new varieties that we have proved to be great yielders. Also Field and Garden Seeds—the best that grow. Good line of poultry supplies. Prices low as good seeds can be sold. Catalogue free.
L. L. OLDS SEED CO., Drawer S, Clinton, Wis.

Fruits for Oklahoma.

In the January number of the Fruit-Grower a gentleman in Iowa inquires concerning fruit-growing in eastern Oklahoma and is given a long list recommended by our experiment station. Now in order to discuss fruit-growing in Oklahoma intelligently, and to be able to send out information that will be reliable and of the greatest value, either our horticultural society or the experiment station ought to divide the territory into about six fruit districts, viz., northeastern, southeastern, north central, south central, northwestern and southwestern. Some years ago the Nebraska Horticultural Society divided that state into seven fruit districts, which has added much to the value of their reports. And owing to differences in climate, soil and rainfall, we are as much in need of a similar division as they were, and I hope our society will take the matter up and decide to do something along that line.

I live in southeastern Oklahoma, and so far as growing apples, peaches, plums and pears here is concerned, it is only necessary for the prospective planter to select the varieties suitable for the purpose for which he wants the fruit and then plant them and take care of them. All of them will do as well here as in any locality.

The Duke and Morello cherries, if properly cared for, live and do well here, but not so well as farther north. They shed their leaves earlier and do not make as heavy annual growth as in the north. The Heart and Bigarreau cherries can be grown here with a fair degree of success for home use, but I think will never be a success here as a market fruit. Strawberries do well here, and blackberries do remarkably well, especially the early varieties. They seldom fail to produce an abundance of berries of first quality. This is also a natural home of the grape, and the planter needs only to select the variety he wants and plant it.

Gooseberries, currants, and red raspberries do not do well here, and I do not think they can be grown unless they are protected in some way from the afternoon sun.

Pecans, and good ones, grow wild here in great abundance, and hundreds of bushels of them are shipped from this point annually. Last fall they were a failure, owing to the May 1 freeze. I have not seen the English walnut tried, but believe it will do well here.

Two years ago I bought one and a half acres of land that had been farmed a few years, built a residence, chicken house, etc., on it, set good heavy oak posts every eight feet around the place. Then, with the exception of the front, stretched four foot chicken wire on these, with a barbed wire stretched tight, close to the ground, and another at the middle of the chicken wire, and another at the top. I then took short pieces of hay baling wire and fastened each barbed wire to the chicken wire at two places between each two posts. In front of the house I put three foot chicken wire, with barbed wires at the ground, and at the top of the chicken wire, and another barbed wire six inches above that, which makes quite a neat front fence.

This makes a cheap fence, and for horses, cattle and sheep is as good as the best, for none of these will push on a fence or bother it in the least if they cannot get their noses through it. Fortunately there are no hogs near to root under it, and my neighbors' chickens and dogs cannot trespass. Neither can the frolicsome rabbit play pranks in my orchard on frosty nights. He cannot get in.

One year ago this winter I planted about one and a quarter acres of the place to fruit. I have 26 varieties of apples, 18 varieties of peaches, 11 varieties of pears, 9 varieties of cherries, 9 varieties of plums, 3 of apricots, 3 of nectarines, 2 of quinces and 10 of grapes. Too many varieties, I think I hear my thrifty friend who grows fruit for market say. But I am growing it primarily for the pleasure I derive from seeing the trees grow, and to have something agreeable to employ my time at mornings and evenings when I can be out of the office. I expect soon to have an abundance of fruit the year round, but that is a secondary consideration.

I planted my apple trees 25 feet apart, and a peach tree in the square. I also planted a plat to sweet cherries adn pears in the same way. Plums and sour cherries I planted from 10 to 12 feet. Last year many of my apple, peach and pear trees made over four feet of growth, and at this time my peach trees are set quite full of good healthy bloom buds, as are some of the plum trees. But I don't expect to reap much of a harvest this year except from the strawberries, blackberries and grapes. I am trying some of the new varieties of fruit and will tell you sometime what success I have with them.

We mix chickens and fruit-growing. I grow the fruit trees and Mrs. W. raises the chickens. We have the garden and house yard fenced off so that the chickens have free range in the orchard, and they pay their keeping three times over, first in the pleasure we derive from seeing them around, second by keeping the orchard free of harmful insects, and third by the eggs and fried chicken they furnish us.

I derive more pleasure from reading the Fruit-Grower than from any other publication I get, and wish you the full degree of success your intelligent efforts entitle you to.

ROBERT WHEELER.

Tecumseh, Okla.

The Mark Hanna Strawberry.

The above illustration is one single cluster, reduced size, of Mark Hanna strawberry, originated by Mark T. Thompson of Rio Vista, Va. The cluster contained 95 fully developed berries, ripe and green, and the originator thinks it the largest single cluster of strawberries ever produced. It is a seedling of Bubach No. 5, which it much resembles, fertilized by Thompson No. 2. In size it is very large, beautiful shape, color perfect. shape very regular, conic, firm; a good shipper; early and late continuing in bearing for weeks; carries its enormous crop of fruit to full perfection; withstands the most severe drouths. It is claimed to be one of the best introductions for years, surpassing the Haverland and Bubach No. 5, being firmer, far more productive, a splendid shipper, and holds its color after picking.

Experiments in Orchards of Stone Fruit

The South Haven (Mich.) sub-station found that April 1 was the latest practicable date at which peach trees could be sprayed with copper sulphate for the prevention of leaf curl. After that date weak Bordeaux mixture should be used, to prevent injury to foliage.

In a test of pruning peach trees in the spring and in the fall, better results were obtained from spring pruning. Roland Morrill of Michigan prunes his peach trees as late in spring as possible, before growth starts. He waits until he thinks all danger of winter-killing is over, and then prunes according to the fruit buds.

Experiments are being conducted in thinning peaches, extending over a period of three years. The good results of thinning on the appearance of the tree was noted during the first season, and the fruit from the thinned trees sold for nearly double as much as that from the unthinned trees. Like results of thinning were also noted with plums. Plums thinned so that the fruit did not touch each other were larger, brought a better price in market, and were less affected by brown rot than plums on unthinned trees. The foliage was also of a better color and hung on the trees longer in the season.

Things That Grow.

The most fortunate of our readers are those who live where they can grow things. There is something inborn in everyone who is born right that prompts him to want to see beautiful nature produce her beauties bountifully. Hence the flower and vegetable garden, the ornamental, shade and fruit trees about one's place, the shrubs, the roses—all are of interest to people of good minds.

The Storrs & Harrison Co., Painesville, Ohio, have been for fifty years growing things, the choicest new and old, and shipping them, by mail, express and freight, to all parts of the country, to ornament, to please and profit the people. They occupy 1,000 acres and have 44 greenhouses for the growing of things for our readers. You will enjoy and profit by a perusal of their 168-page catalogue for 1904, which will be sent free if you write them, mentioning the West Fruit-Grower.

Very Popular.

The "Osgood" Standard Scales, manufactured by Osgood Scale Co., Central Street, Binghamton, N. Y., are the subjects of an illustrated announcement to the trade, in this issue. They emphasize the fact that they want dealers and agents everywhere to handle the farm scale, the house adds a proposition to ship scales on a thirty-days' trial. The wagon scales made by this firm are becoming very popular and the sales are larger than was expected. A catalogue will be sent on application.

An Enterprising Seed Firm.

We have all known for years L. L. Olds of Clinton, Wis., and a great many of us have bought seeds from him. And they were seeds that could be depended upon to grow, too. So we are all pleased to learn that Mr. Olds has incorporated the L. L. Olds Seed Co. Mr. Olds, however, still retains the active management of the company, and this insures that the quality of the seeds sold by the new company will be fully up to that of former years. The L. L. Olds Seed Company's catalogue is one of the nicest we have seen this season. Every one who grows seeds should have a copy and keep it at their elbow for constant reference.

NEW BERRIES.

I wish to introduce the following well tested seedlings:

"Goldshorough"—An almost ideal Strawherry; large and beautiful in shape and color; extra fine flavor; juicy, rich, sweet and fragrant; requires no sugar; plants free from leaf diseases; large and erect; buds and fruit protected from frost and sun; runner habits perfect No herry known to me has so many good qualities. Very best for private gardens. Early staminate.

"Royal Straight Flush"—Very productive of enormous herries; firm and juicy, are not sour, but lack flavor and color; fruits on its runners in August and September; plants healthy, runners early and quick to root. Many crowns and fine for single-year culture. Mid-season staminate.

"Duplication Gooseberry"—Mildew-proof; very productive. U. S. Pomologist said, July 1, 1903: "These are the largest gooseberries ever seen here." Write for descriptions.

A. T. GOLDSBOROUGH,
Wesley Heights, Washington, D. C.

Missouri Valley Seed Co., St. Joseph, Mo., general Western distributors for Bowker's Disparene. See ad on page 18.

New Blackberry

"BRILL"—A cross between a Dew and Blackberry. The largest early berry in the state, as far as I know. Commences to ripen here about May 10th. Very hardy and very productive. Write for prices. I am growing some fine new Texas Peaches: Annie Orr, Arp Beauty (June Elberta), Phil Horton, etc. Address

JOHN J. BRILL
Grapeland, Texas

Hoyt Plant & Seed Co.

Growers of Seed Corn Oats and Potatoes

Propagators of Small Fruit Plants, Fruit Trees, etc. **Northwestern Headquarters** for Strawberry Boxes, crates, etc., Planet Junior Machinery, Sprayers, etc. Catalogue No. 16—"A Treatise on the Strawberry."

Hoyt Abe., St. Paul, Minnesota

Raspberry Plants

THE KANSAS—King of the blackcaps; medium early, large size, great productiveness, excellent quality and perfect hardiness make it superior to any other variety. A limited supply of choice plants for Spring delivery. Write for prices.

W. W. CLARK, R. 1, Atchison, Kansas

"Granville" Strawberry

The berry higher in favor, but plants lower in price. Dealer, you will want this next year to list. Consumer, you want this to eat, for it can't be beat. Send postal for prices, etc., to orig'r.

A. M. Nichol, Granville, Ohio

New Fruits

If you are interested in the best new Strawberries, Raspberries and Blackberries, write me. I have some special bargain collections which will interest you. Send for price list.

A. S. DRESHER, Lisbon, Iowa

100,000 KANSAS RASPBERRY TIPS

Extremely cheap. Write for prices.
W. B. BROGDON, Springdale, Arkansas

STRAWBERRY

Catalogue free. Prices, sorts as low as $1.25. All kinds of berry plants.—
Slaymaker & Son., Dover, Del.

Strawberry Plants

that BEAR FRUIT. Wholesale Prices. 110 Varieties. Catalogue FREE. Write
NORTH STAR PLANT FARMS, Cokato, Minn.

BERRY TICKETS

No bookkeeping in the berry field. No trouble in settling with pickers. Every grower should use them. Send for sample. T. M. Jones, Goreville, Illinois.

Five Million Strawberry Plants

200 postpaid, $1.25; 5,000 by express, $6. Mammoth Rhubarb plants, $3 per 100. Send for price list. Alva Y. Cathcart, Bristol, Indiana.

Extra Fine

Seed Corn

at a reasonable price. Golden Beauty, yellow Improved Leaming, yellow; Iowa Silver Mine, white. White Runner, largest yielding white corn.

Special prices for immediate shipment. Write for prices and samples, stating amount wanted.

Missouri Valley Seed Co.

"The Good-Seed Store" ST. JOSEPH, MISSOURI

Concord Grape Vines

$1.50 Per Hundred

Rhubarb and Gooseberry plants, 50c doz
Early Harvest Blackberry, 75c per 100
Lucretia Dewberry .....80c per 100
Kansas Raspberry .....$1.00 per 100
Strawberry plants, 40c per 100 or $2.50 per 1,000.

J. C. BANTA, Topeka, Kansas

DUROC JERSEY SWINE

Fifteen years in the business. Stock for sale. Black Langshan and White Plymouth Rock chickens; eggs for hatching in season. Write for anything wanted.
O. W. BROWNING, NEWTON, IOWA

For Kidneys, Bladder and Rheumatism

New Discovery by Which All Can Now Easily Cure Themselves at Home—Does Away With Surgical Operations—Positively Cures Bright's Disease and Worst Cases of Rheumatism—Thousands Already Cured—Note Endorsers.

TRIAL TREATMENT & 64-PAGE BOOK FREE

At last there is a scientific way to cure yourself of any kidney, bladder or rheumatic disease in a very short time in your own home and without the expense of doctors, druggists or surgeons. The credit belongs to Dr. Edwin Turnock, a noted French-American physician and scientist who has made a life-long study of

"None can say they are incurable until they have tried my discovery. The test is free."

these diseases and is now in sole possession of certain ingredients which have all along been needed and without which cures were impossible. The doctor seems justified in his strong statements as the treatment has been thoroughly investigated besides being tried in hospitals, sanitariums, etc., and has been found to be all that is claimed for it. It contains nothing harmful but nevertheless the highest authorities say it will positively cure Bright's disease, diabetes, dropsy, gravel, weak back, stone in the bladder, bloated bladder, frequent desire to urinate, albumenaria, sugar in the urine, pains in the back, legs, sides and over the kidneys, swelling of the feet and ankles, retention of urine, scalding, getting up nights, pain in the bladder, wetting the bed and such rheumatic affections as chronis, muscular or inflammatory rheumatism, sciatica, rheumatic neuralgia, lumbago, gout, etc., which are now known to be due entirely to uric acid poison in the kidneys—in short, every form of kidney, bladder or urinary trouble in man, woman or child.

That the ingredients will do all this is the opinion of such authorities as Dr. Wilks of Guy's Hospital, London: the editors of the United States Dispensatory and the American Pharmacopoeia, both official works; Dr. H. C. Wood, member of the National Academy of Science and a long list of others who speak of it in the highest terms. But all this and more is explained in a 64-page illustrated book which sets forth the doctor's original views and goes deeply into the subject of kidney, bladder and rheumatic diseases. He wants you to have this book as well as a trial treatment of his discovery, and you can get them entirely free, without stamps or money, by addressing the Turnock Medical Co., 805 Turnock Building, Chicago, Ill., and as thousands have already been cured there is every reason to believe it will cure you if only you will be thoughtful enough to send for the free trial and book. Write the first spare moment you have and soon you will be cured.

It would seem that any reader so afflicted should write the company at once since no money is involved and the indorsements are from such a high and trustworthy source.

Paint Without Oil

Remarkable Discovery That Cuts Down the Cost of Paint Seventy-Five Per Cent.

A Free Trial Package is Mailed to Everyone Who Writes.

A. L. Rice, a prominent manufacturer of Adams, N. Y., has discovered a process of making a new kind of paint, without the use of oil. He calls it Powderpaint. It comes to the farmer a dry powder, and all that is required is cold water to make a paint weather-prooof, fire-proof and as durable as oil paint. It adheres to any surface, wood, stone or brick, spreads and looks like oil paint and costs about one-fourth as much.

Write to Mr. A. L. Rice, Manufacturer, 391 North St., Adams, N. Y., and he will send you a free trial package, also color card and full information showing you how you can save a good many dollars. Write today.

FOR SALE
at Reduced Prices

Elberta Peach Trees and one year old Apple Trees. Will sell the lot at greatly reduced prices. Also first class Berkshire Pigs at $5.00 each.

WILL ROCHELLE, R. 5, Jackson, Tenn.

Robinson's Tree Paint for Borers

Rabbits, Insects, etc. Cheap, reliable; once used, always used. We use it, our customers use it; why not you? Send for special offer. WM. ROBINSON, Bowling Green, Mo.

If You Want Pie Plant, Berry Plants, Peach or Apple Trees at wholesale prices writee **SELIGMAN (MO.) NURSERIES.**

Majestic Tomato.

During the past few years there have been many new varieties of tomatoes brought out, but some of them have no other claim except that of novelty in shape or color, and, therefore, their popularity will be short-lived. From the introducer's description, however, we are inclined to think that this new variety is one which has come to stay. The fruits are unusually large in size, of perfect shape and rich crimson red color. They are nearly solid, producing comparatively few seeds and therefore the seed will doubtless always be expensive. It is claimed to be not only the largest, but the most productive kind in existence, having yielded 1,100 bushels per acre under ordinary conditions and with ordinary culture. The plant is of sturdy, vigorous growth, and sets a great number of fruits, which are very solid, with few seeds and unsurpassed in quality. The fruit ripens all over without any green spot around the stem nor rotten spot at blossom end. The seed is quite scarce this year and sells at 40 cents per packet of 100 seeds. The Iowa Seed Company of Des Moines, Iowa, who are introducing it, have agreed, however, to send a trial packet of 25 seeds free to any of our readers who ask for it, provided they mention this paper in writing. This also will give you a chance to compete for the $100 in cash prizes which are offered this year, as follows: $35.00 for the largest tomato grown; $40.00 for the largest yield from one plant and $25.00 for the best photograph of a plant. Better write them today and you will receive seed by return mail, together with a copy of their large illustrated catalogue of all kinds of vegetables, flower and field seeds. A postal card request is sufficient, but be sure to mention this paper.

Seed Firm Which Does Not Exaggerate.

The temptation to overstatement is ever before the seedsmen when getting out his annual catalogue. It is particularly gratifying to note the quiet, conservative and substantial tone which characterizes the 1904 catalogue of the Minnesota seedsmen, Northrup, King & Co., of Minneapolis. The farmer wants to know the facts. He likes to have them well presented and he expects the advertiser to put "his best foot forward," but he has a right to expect the truth in its best clothes. Any seedsmen who promises crops that can not be grown, but lays the foundation for distrust. So in the long run it probably pays firms like Northrup, King & Co. to let the facts stand, without exaggeration or adornment. It has been stated upon high authority that the introduction of Dwarf Essex Rape and other strikingly valuable seeds, which this firm was the first to send out, has added $10 an acre to the productive value of every acre of cultivated land in the Northwest alone. Seedsmen who search out, test and introduce new and improved varieties are something more than money making merchants, they are benefactors to their patrons and to the public at large and are worthy to be so regarded.

The special features of the 1904 catalogue of Northrup, King & Co., include a new and sensationally early and sweet Sweet Corn, "Peep o'Day," which has successfully passed the crucial tests and which, in the opinion of disinterested seedsmen, will win a place in the hearts of gardeners and the seed buying public not filled today.

The Reliable Catalogue.

The Reliable Incubator and Brooder Co., Quincy, Ill., U. S. A., have just issued their 20th annual catalogue, and as usual with this company, it is a most elaborate one. The Reliable people are nothing if not unselfish. They do not believe their yearly catalogue should be entirely taken up by themselves in advertising their goods, but sufficient space is given to the description of their incubators, brooders and supplies and the remainder devoted to general information on poultry subjects, making it a most valuable book for anyone who raises poultry. It gives many practical pointers, that would require years of experience to acquire. Every reader of this paper should have a copy. Write for one. Mention this paper when writing.

The Buckeye Incubator.

On our poultry page appears the advertisement of the Buckeye Incubator Co., Springfield, Ohio, to which special attention is called. This is not only a good incubator, but the company has issued a most excellent catalogue which will be sent free to those of our readers who ask for same. The Buckeye incubator has a good reputation, the catalogue tells how the machines are made and operated, and also gives reports from customers who have used the machines with success. Those who are interested in incubators should send for this catalogue and investigate the merits of the Buckeye before purchasing. Mention the Western Fruit-Grower when writing.

The Ormas Incubator.

Last month we told what an excellent catalogue is sent out this season by L. A. Banta, Ligonier, Ind., manufacturer of the Ormas incubator. A more careful inspection of this catalogue shows that it is not only a handsome book, but a useful one as well. The Ormas is a moderate-priced machine, made of California redwood, and is recommended by a great many satisfied users of the machines. Look up the advertisement in another column, and send for a catalogue telling about the Ormas incubator. When you write don't fail to mention the Western Fruit-Grower.

C. W. Hoffman, Beatrice, Neb., writes asking about his paper being delayed, saying that his trees will not grow without the Fruit-Grower.

Fruit Farms and Fruit Land for Sale

This department is for the benefit of Fruit-Grower readers who wish to buy, sell or lease farm lands. All advertisements of this nature will be inserted for a charge of 2 cents per word, each initial and number to count as a word. No display type will be used in ads which are accepted at this reduced rate, and all charges must be paid in advance. The rate of 2 cents per word is for each insertion. Count the words when sending your advertisement, and the cost can be easily ascertained.

THE FRUIT-GROWER CO., St. Joseph, Mo.

FOR SALE—Twenty-acre fruit farm in Michigan, two miles from town, 80 miles from Chicago; 600 peach and 200 other fruit trees, no buildings. For further particulars write H. E. Tucker, 4100 North Ashland ave., Chicago, Ill.

Write us for list of bargains in fruit lands and orchards. Frazer Real Estate Co., Gravette, Benton Co., Ark.

FOR SALE—Ten acres, peach orchard, fully planted and equipped. Fruit belt of Texas. $750. Easy terms. D. C. Bovee. 609 Ashland Block, Chicago, Ill.

FOR SALE—25-acre fruit farm in the wonderful crop-every-year fruit belt of western slope of Rocky Mountains, Delta County, Col., elevation 5,800 ft.; 8 acres in 8-year-old apple, peach, pear and other fruit trees; 8 acres in alfalfa. Net sale of $1,500 of fruit season of 1903; house, barn, cemented cistern, rural delivery and telephone, ½ mile to town. R. R. depot, church and school. Trout fishing, deer and bear hunting, nearby. Address I. O. Branham, Hotchkiss, Colo.

FOR RENT OR SALE—On crop payments, several choice farms. Send for list. John Mulhall, Sioux City, Iowa.

FOR SALE—A 360 acre farm in the fruit belt of America. Nearly all fenced. 100 acres cleared, 300 acres upland, the rest valuable timber; 500 fruit trees, apple, peach, pear, plum and cherry. Two sets of improvements, three wells. Title perfect. Price $2,000 cash. Write for full particulars. Mrs. Louise B. Niles, Hill Top, Boone Co., Arkansas.

FOR SALE—80-acre fruit farm, five miles south of Olney, Illinois, ½ mile northwest of Calhoun, Illinois, on R. F. D. route out of Olney; good house, large, fine barn, wells and cistern, well fenced; 28 acres hog fenced; 45 acres in apple orchard, nearly all kinds of small fruits; the orchard has paid on an average of $1,200 each year for the last 5 years; never failed to bear a crop; 40 acres of the orchard is 12 years old, always had good care. An ideal home and sure money maker. For information write LEE WILSON, Olney, Illinois.

FOR SALE—30-acre farm, fine laying land, 1 mile from station; good surroundings. $21.50 per acre if sold soon. H. Hogendorn, Route 3, Neosho, Missouri.

FOR SALE—Orange groves in Florida. Also farm, ranch and fruit lands, improved and unimproved. Send for list of bargains. C. Thos. Shinn, Pomona, Florida.

FOR SALE—A 20 and 40 acre orchard for sale near Odessa, the best town in Lafayette Co. Trees 9 years old. Write J. P. Powell, Odessa, Mo.

FOR SALE—Forty acres unimproved, timbered, farming land, ¾ mile from court house square at Waldron. Price $10 per acre. S. K. Duncan, Jr., Waldron, Arkansas.

MISSOURI LANDS IN THE GRAIN BELT
Henry, Cass, Bates, Pettis, Johnson, Vernon and adjoining counties. Write us for maps and descriptive matter. **THE KYLE AGENCY, Clinton, Henry County, Missouri. J. H. Kyle, Mgr.**

LANDS CHEAP.
Large bodies of land and ranches in Kansas, Oklahoma, Texas, Old Mexico, Louisiana, Arkansas, Southern Missouri and California. Tell me what you want and where you want it and I will send you list of bargains of the kind you want in that locality. Also have smaller farms and ranches in all parts of said states. I am working above mentioned territory thoroughly. Write me and see how well and how promptly I will serve you. I divide my net commission even with any land agent or anyone else who sends me the name and address of a prospective buyer to whom I afterwards make a sale. I have land at 35c to $35 per acre. Geo. W. Morris, Lyndon, Kansas.

Fruit, Ranch and Mineral Lands

in Southern Missouri for sale at low prices in subdivisions to suit buyer. Title perfect. A small investment may make you rich. Delays are dangerous. Write at once to **N. F. Murray,** Oregon, Mo. Box 53.

TEXAS HOMES CHEAP

Fruit, truck and general farms in the great Elberta district of East Texas, where winter does not shut you in for months nor summer prostrate you. Two to 4 crops per year from same ground. Good churches, schools, society, health, markets, shipping facilities, etc. Diversification affords unbounded opportunities to those of small means. Lands on 3 to 6 yrs. time at $3 per A. up, according to improvements. If you mean business write for "Fruit, Truck and General Farm Bargains." Address WHITLEY & EDWARDS, Dept. F, TROUPE, TEXAS.

WANTED—Experienced fruit man to take care of pear, peach and apple trees 5 years old, and market product, for five years, for one-half of all fruit and all products grown in orchard. Jennie B. Purviance, Perry, Ark.

To raise water from springs or branches for any purpose, especially for irrigation, the best and cheapest way, write Standard Hydraulic Pump Co., Roanoke, Va.

COTTON BELT ROUTE

Arkansas Texas Louisiana

An ideal country for cheap homes. Land at $5, $10, $15 per acre and up; grows corn, cotton, wheat, oats, grasses, fruits and vegetables.

Stock ranges 10 months in the year.

Cheap rates—about half fare—via the Cotton Belt twice a month.

Dates are March 1 and 15, April 5 and 19.

Write for descriptive literature, maps and excursion rates.

E. W. LaBEAUME, G. P. & T. A.
Cotton Belt, St. Louis, Mo.

'Tis the "Comfort Line"

Free Reclining Chair Cars

ON THE POPULAR

Henderson Route

BETWEEN

St. Louis, Louisville the East and Southeast

As we are the originators of Free Reclining Chair Car Service Between St. Louis and Louisville, Don't You Think It Would Pay You, In Traveling, to "Get the Henderson Route Habit?"—It Will Us.

ASK ABOUT IT

W. C. LINDSAY, General Agent
F. G. CUNNINGHAM, Trav. Pass. Agt.
ST. LOUIS, MO.

"There's Something to See"

The Great Southwest invites the entire North and East to make a tour of inspection and recreation to the principal business centers within the boundaries of Oklahoma and Indian Territory and Texas, on February 16th, March 1st or March 15th.

This territory of immensity in all things, commands the attention of persons interested in the advancement of the Educational, Agricultural and Manufacturing growths of our country. Avoid the weather extremes of the North and East at this season of the year by taking advantage of the opportunity afforded in the low rates effective on dates mentioned by Frisco System and connecting lines via St. Louis and Kansas City Gateways. From St. Louis to Oklahoma and Indian Territories, $8.50; to Texas, $10.00. From Kansas City and Memphis, $6.50 and $8.00, respectively. Also round-trip rate of $15.00 from St. Louis and Kansas City to Texas on above dates with liberal stop-over privileges.

The Frisco System has four trains daily from St. Louis and Kansas City Union Stations to the Southwest.

AGENTS WANTED—$120.00 per month and expenses paid salesmen to sell our high grade iron-clad nursery stock. Experience not necessary. Salary and expenses paid weekly. Steelville Nurseries, Steelville, Mo.

SHARES THREE CENTS. Mines and Mill; big profits; mineral, pictures free. **Sunset Gold Co.,** 506 Mack, Denver, Col.

"The January number of the Fruit-Gorwer was the best issue of any fruit paper I ever saw. It contained much information to the planter and grower, and at the subscription price it ought to have a circulation of 100,000 copies over the Western states."—W. F. Schell, proprietor Wichita Nursery, Wichita, Kan., and horticultural commissioner from Kansas for the St. Louis World's Fair.

Good Nursery Stock.

On the first page of this issue of the Fruit-Grower appears a special advertisement of the New Haven Nurseries, New Haven, Mo. This is one of the best nurseries in the country, and Mr. Bagby, the manager, writes that the stock is exceptionally fine this season. Having visited this nursery, the Fruit-Grower knows what kind of stock is produced, and feels safe in recommending it. This firm has no agents, but sells direct to planters and those who wish to get club orders for nursery stock. The stock of commercial varieties is large, but early orders are recommended, so that the list of varieties will be complete. Fruit-Grower readers who wish to plant any kind of nursery stock this spring, and particularly commercial apple, peach or pear orchards, will do well to write to the New Haven Nurseries, New Haven, Mo., mentioning the Western Fruit-Grower when you write.

Mr. Charles A. Green.

Herewith we present likeness of Mr. Charles A. Green, Rochester, N. Y., president of Green's Nursery Co. and editor of Green's Fruit-Grower. Mr.

Green is one of the pioneer horticultural editors of the country, and very kindly furnished the Fruit-Grower the report of the meeting of the Western New York Horticultural Society which is published elsewhere in this issue.

Lee's Summit Star Nurseries.

On page 2 of this issue appears a half-page advertisement of the Lee's Summit Star Nurseries, M. Butterfield & Son, proprietors, Lee's Summit, Mo. This firm is one of the best known in the West, having been in the business for many years. The active management of the business at Lee's Summit is now in the hands of Mr. J. S. Butterfield, who is particularly anxious to send his printed matter to Fruit-Grower readers. Mr. Butterfield has issued some special circulars, on special subjects, which are very interesting. One of these is his special cherry circular, which has had a wide distribution. He believes that one should have a nurseryman who is entitled to confidence, and for that reason has strived to build up a steady business with old patrons, who come back year after year. In this he has been most successful. Look up this ad., and when you write mention the Fruit-Grower.

The Opalescent Apple.

This apple is being pushed by the Xenia Nurseries, McNary & Gaines, Xenia, Ohio. The Opalescent apple takes its name from the fact that the fruit is susceptible of a very high polish, so much so that the skin acts as a mirror, reflecting objects very distinctly. McNary & Gaines sent The Fruit-Grower a specimen of the Opalescent, and this specimen indicated that the words of praise which have been bestowed upon this variety have not been overdrawn. The apple is of good size, quality good, and the tree is said to be a very heavy bearer. The skin is light, shaded to dark crimson, with well-defined dots over the surface; flesh yellowish, with a reddish tinge near the skin. The Opalescent is a good keeper, and horticulturists who have examined it have spoken very highly of the variety. The introducers will send full description, with testimonials, to those who ask for same, mentioning The Western Fruit-Grower.

The Fairfield Strawberry.

The West Jersey Nursery Co., Bridgeton, N. J., is introducing this new berry, which is claimed to be earlier and much better than the old Michel's Early. Mr. Cole, proprietor of the nursery, is particularly anxious that Fruit-Grower readers shall test this variety, and offers to send a dozen plants by mail for this purpose to those who will send names of five fruit-growers, 25 cents in coin or 1 or 2-cent stamps, and mention this paper. This is an opportunity to test this variety at slight expense, and doubtless many of our readers will send for a dozen plants.

Tomato plants have been found to be repellants of insects. M. Silroy of France placed some tomato stalks around peach trees that were suffering from the leaf curl and also from attacks of ants. In the morning he was surprised to find that the ants had disappeared and the louse that was on the peach leaves was gone. He also steeped some leaves of the tomato and applied to roses and orange trees that were suffering from the attacks of insects. Put in hills of cumubers and cantaloupes it repelled the striped bugs.

M. Crawford, of Cuyahoga Falls, O., who has made a specialty of the Strawberry for over 40 years, is collecting information concerning "thoroughbred" or "pedigree" strawberry plants. He wants to correspond with any person who has had experience and can give facts—not theories—that will enable him to arrive at the truth. He also wants to buy a few "mongrel" or "scrub" plants of a number of well-known varieties that have been grown under neglect until they have lost, or nearly lost, the habit of blooming. He hopes, by corresponding and experimenting, to obtain information that will be of value to strawberry growers. If you can help in this matter, either directly, or by referring him to some one who can, please do so. In return Mr. Crawford will send you, in due time, some valuable information on this subject.

NOTES.

H. W. Miller of West Virginia says that the apple and peach crops of 1903 sold for the best average prices of any season since he has been in the fruit business—a period of over fifty years.

Have you secured your club of five new subscribers to the Fruit-Grower—or four new ones, with your own renewal, all for $1? You are going to do this, aren't you? Do it today.

J. B. Weir, Siloam Springs, Ark., sends names of ten new subscribers, and says: "I think the Fruit-Grower is the best paper published for the West and Southwest. Long may it prosper." And Mr. Weir helps to make it prosper by sending these new names. Have you sent your club yet? If not, do it today.

In this issue N. F. Murray, Oregon, Mo., advertises lands in Southern Missouri. This announcement will be especially interesting to those who contemplate buying fruit lands in that part of the state. Mr. Murray is well posted as to what constitutes good fruit soil, and he is also well informed concerning the lands of Southern Missouri. Intending purchasers will do well to write Mr. Murray.

And the Maine fruit-growers have a grievance, because the commissioners from that state will spend the $40,000 appropriation for the St. Louis World's Fair in erecting a log cabin, and will not give a part of the money to provide for a fruit exhibit. Those Maine fruit-growers are right, too, for we all know that Maine can erect log cabins. What Westerners would like to see are the products of the soil in comparison with our Western products.

A gentleman writing to an Eastern paper asks about the dust process of spraying, and complains because he finds no dust sprayers advertised in the papers. He takes the wrong papers. The Fruit-Grower has these advertisements, several of them. And by the way, were not the advertisements in our January number very interesting and helpful to you? Are they not so every month? And don't you find the advertisements profitable reading every month?

A subscriber asks us if we knew that apples picked just after the full of the moon will keep better than if picked at any other time. Another one tells us that the fruit crop for 1904 will be a bountiful one, because of the fact that Christmas came in the light of the moon. No, we didn't know these things. But how about the fruit crop where the mercury went to 40 degrees below zero, as it did in New England? Their Christmas came in the light of the moon, too.

The "Honest Injun" Incubator.

This is the name applied to the Hiawatha Incubator, made by the Hiawatha Manufacturing Co., Hiawatha, Kan., and it is deserved, if the satisfied users of these machines are to be believed. The Hiawatha incubators have made an excellent name for themselves during the few years they have been on the market, and have won prizes at many poultry shows. Those who are interested in incubators should send for the catalogue, which tells about the "Honest Injun" incubators an d brooders, and also quotes what experienced poultry raisers say of the machines. This catalogue, by the way, is more than an ordinary catalogue. It will be found helpful to everyone who keeps poultry, for it is full of good, interesting matter. The catalogue was printed in the Fruit-Grower office, so that we are not only proud of it, but have had opportunity to investigate its contents carefully. For catalogue or any other information address Hiawatha Manufacturing Co., 838 Oregon St., Hiawatha, Kan., and mention the Fruit-Grower when you write.

THE GRAVES DUST SPRAYER COMPANY

Manufacturers of Dust Sprayers & Insect Exterminators

This Double Bellows Dust Sprayer has been thoroughly tested and highly recommended by Fred W. Mally, State Entomologist of Garrison, Texas; also J. W. Hursten, Boll Weevil Commissioner of Independence, Texas: "The above sprayer works with accuracy, ease and speed; its constructions are apparently perfect."—T. D. L. Kinney and R. J. Spinks of Lufkin, Tex. Also J. W. and J. M. Booker of Independence, Tex.; G. Bell and O. Tilly, Bethany, Mo. The dust formula is the successful mode of dealing with the insect pests. After experimenting, Mr. W. D. Maxwell of St. Joseph, Mo., successful fruit-grower and I. B. Lawton, secretary of the State Horticultural Society at Bentonville, Arkansas, D. L. Cross, editor Benton Co. (Ark.) Sun, Bentonville, Ark., and other men of experience, endorse the process.

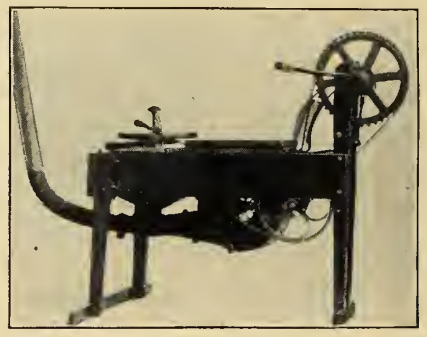
Patented June 3, 1902, No. 701560

The above sprayers will be furnished in three sizes, No. one, $6.00; No. 2, $7.00 and No. 3, $15.00. We prepare two formulas, one for fruit, vines and plants; also one for mites, lice, etc. It is effectual and cheap. The dust will be furnished in sacks at $1.00 per bushel. For further information, write for circular.

THE GRAVES DUST SPRAYER CO., Bentonville, Ark., and Pattonsburg, M

Kiser Whirlwind Duster

Patented April 16, 1901 — **LEADS THEM ALL** — Patented Dec. 2, 1902



As it is no longer an experiment to use "DUST" to destroy insects and fungi, the only difficulty to overcome is to find a machine that can do the work effectively and satisfactorily.

We have solved the problem—

The Kiser Whirlwind Does It All

It Always Pays to Buy the Best.

Use lime dust instead of water. Destroys insects and fungi. Whirlwind for commercial orchards weighs about 100 pounds, crated. Whirlwind, Jr., for gardens, weighs 25 pounds. Capacity of large machine is 500 to 1,000 trees per hour, owing to condition of wind. Write for illustrated circulars and prices to

The Kiser Whirlwind Duster Mfg. Co.

STAYBERRY, MISSOURI

Protects Orchards

Gardens, Vineyards, Flowers, Potatoes, Cotton, Poultry, etc., from Insects and Fungus.

The Best, Cheapest, Lightest and Easiest Operated Dust Sprayer on the market. Capacities 3 and 8½ quarts. Sells on sight. **Agents Wanted.** ($20.00 a week and expenses). Address for testimonials, terms, etc.

S. A. Haseltine, Springfield, Missouri

Missouri Valley Seed Co., St. Joseph, Mo., general Western distributors for Clark's Cutaway Harrows. See page 20.

"The Sure Hatch Incubator in Alaska."

Minto, Yukon, Jan. 7, 1904.—Seattle Produce Co., Eugene, Oregon.—Gentlemen: Enclosed please find eighteen dollars ($18) for another 150-egg size incubator. Please sent it as soon as possible, as I want to set it in the fore part of March. The one you sent me last fall is all right and I want to set the two in March, or sooner if the hens begin to lay. I will want some more later. I enclose 20 cents for exchange of Canadian greenbacks. On my first hatch I got 85 per cent and have not got less than 95 per cent since that time. Ship the machine to Mrs. John Fussell, Minto, Yukon, care of Mr. Wheeler, Royal Mail Service, White Horse.

Bowel Trouble Again.

This subject keeps "bobbing up" again and again, and no doubt it will continue to "bob" as long as little chicks are subject to this death-dealing disease. Still, a great percentage of the little chicks that die could be saved if fed exclusively one or the other of the prepared chick feeds. Beginners especially should not experiment but give little chicks dry feed exclusively. One of the best of these prepared feeds is Mrs. Pinkerton's Chick Feed, made in Hastings, Neb. It contains meat, bone, seeds, grit, etc., and in winter takes the place of bugs, worms, green stuff, etc. Mrs. Pinkerton is a successful poultry raiser and is always ready to answer any inquiry regarding the successful raising of little chicks.

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Anchor Posts at ends and corners will add years of usefulness to your wire fences. Made of Galvanized Steel Angles thoroughly anchored and braced in all directions. As cheap as wood posts, easier to set and will last much longer. Write for circular and prices.

CHASE COLVIN, South Charleston, Ohio.

Washington Apples.

On the third of November last we had occasion to visit one of the many commercial orchards in Ceneral Washington. About all of the country in this state lying in the basin of the Yakima and Columbia Rivers which can be irrigated and some that does not require irrigation seems to be well adapted to the growing of the apple, our King of Fruits. At the time of our visit to this orchard, which is owned by Gibson Bros. of North Yakima, Washington, they had nearly finished harvesting, packing and shipping the season's crop.

The entire crop from this orchard was contracted for by parties east of the Rocky Mountains, as were many other orchards in Yakima County and other parts of the state. Mr. Gibson in putting his apples up to ship, packed them in the orchard as they came from the trees. The apples were packed in a box whose inside measurements are 10½x11½x18¾ inches. These boxes were lined with white lining paper, in the bottom of the box was placed a sheet of cardboard 11½x18¾ inches, which cardboard was also placed between each layer of apples and one sheet on the top of the last layer, making five sheets for every box of four rows or tiers of apples. This cardboard is used to prevent the stiff stems from piercing the skin of the adjoining apple.

A box that contains four layers deep of apples and four apples wide across the end of the box is considered to be a four row or four tier box of apples; but a box that contains four layers and five apples wide is a five row box; and a box that contains five layers and four apples is a five row box also. A good packer will never make one layer four rows and another layer five rows in the same box or put four and five rows in the same layer.

Where Washington apples are shipped to China or New York City, as were many carloads this season of 1903, each apple was wrapped in tissue paper and packed like oranges. The Winesap and other fancy varieties do not seem to hold up in the salt air of an ocean voyage as well as the ill-famed Ben Davis.

Mr. Gibson informed us that from the sixteen acres of ten and eleven year old trees which he has in bearing that he will ship out very close to two carloads of peaches, seven carloads of apples and another car of pears, cherries and other fruits.

In the apple line he is growing Spitzenberg, Yellow Newtown Pippin, Winesap, and a few of the plain Ben variety.

By letting each variety sell itself he claims that the Winesap will earn him more money than the Ben. But by selling Bens and Winesaps together at an average price the Bens bring him the most money on account of their not being so bashful about bearing. His high priced apples and the low priced apples were contracted for at the same price which had the effect of causing one acre of eleven year old Ben Davis trees to net him within a few cents of one thousand dollars.

As much wood growth is made here on a healthy tree in a season by irrigation, Mr. Gibson goes through his whole orchard each winter after the hardest freeze and prunes his trees so as to produce the largest crops of the best quality. Mr. Gibson prunes his Ben trees a little stubby at the ends of the larger limbs to keep them from breaking down every year with their loads of fruit.

He claims that his tripod of success in producing every year a good crop of fine quality fruit, is intensive cultivation, barnyard manure and irrigation.

But at the same time one cannot produce a crop of highly colored fruit by irrigating too heavily at a time or too often. The apple men here who adhere strictly to the system are producing crops of apples with hardly a specimen of fruit injured by the codling moth, by spraying every twelve days carefully and thoroughly from the moment the blossoms fall till the first week in September. It appears to me a costly operation but they have found out that it pays big dividends in the fruit saved.

There is likely not a fruit-grower here but what would trade the codling moth or wooly aphis for the San Jose scale. The scale can be controlled or destroyed with much less labor and expense than the moth and his depredations.

We found Mr. Gibson, as we also did every other fruit-grower whose fruit is shipped East, complaining about the buyer removing the grower's name from the fruit packages, which allows Washington apples to be sold in the East as California apples or Oregon Red apples. E. C. DICKERSON.

North Yakima, Wash.

Planting Red Cedar Seed.

The seed of the red cedar should be gathered in the fall and winter and separated from the pulp. This can be done by rubbing the pulp through a sieve or soaking for a few hours in strong lye water and then rubbing the seeds out with the hands. After the seeds are washed out, let them dry for a day of two and then store in moist sand in a cool place. The seeds should be kept moist, not wet. They do not sprout until the second spring and are easily killed by excessive drying during the summer. A good plan is to mix the seed with sand in a small box that can be moved from place to place. In the winter the box of seed and sand can be set in the shade of the house or a shed, and in the summer placed in the cellar.

The seed is planted in the spring in beds about like onion seed and the bed cared for in about the same way. If the soil is inclined to bake on top it is a good plan to shade the bed with brush or cloth. The young plants grow best in sandy or sandy loam soil. Keep out all weeds and grass and give the land frequent shallow cultivation. The young plants grow very slowly for two or three years and may be left in the seed bed for that length of time. Transplant the same as other trees only use extra precaution to see that the roots do not become dry while exposed to the air. Cut the tops of the plants back more than is usually done with other trees when they are transplanted, as the cedar is in full leaf.

The seed may be planted the spring after it is gathered but it is more difficult to keep in good condition when so handled. The dry, hot summer is sure to destroy the vitality of most of the seed.

Delivering Letters by Telephone.

In a recent issue of the Fruit-Grower was published a paragraph from Everybody's Magazine rather ridiculing the plan proposed by Senator Fairbanks, to have postmasters read certain letters over the telephone to farmers to whom they were addressed. The clipping took the position that farmers would not want their letters read by postmasters in this way. Mr. George Vanderpile, Harriman, Tenn., writes to The Fruit-Grower to call attention to the fact that this clipping does not fairly state the case. Mr. Vanderpile says, and is correct in the matter, too, that the plan of Senator Fairbanks does not provide that all letters shall be read over telephone; simply certain "rush" letters, which have special stamps attached, just as certain letters for city residents have special delivery stamps attached.

Senator Fairbanks' plan is decidedly simple. "We have," he says, "a special mail delivery service for towns and cities, extending to their corporation limits. Though the establishing of such a service was regarded, when it was proposed, with a great deal of apprehension, it has not only proved to be one of the most popular features of the mail service, but last year it netted the government $167,727.73. I would simply extend this service beyond the town and city limits, using in delivery in the country the telephone instead of messengers. It is my opinion that the telephone will prove a more efficient messenger boy than the one we have in the cities—it will be quicker and cheaper. A special delivery stamp, possibly similar in size to the present special delivery stamp, when placed on a letter, would be notice not only for the great haste to be used in getting the letter through to its terminal post-office, but for the receiving postmaster to open the letter, step to his office 'phone and repeat its contents to the person addressed, who may be ten, fifteen or twenty miles back in the country. The letter then should be delivered with other mail matter. It will not be necessary to limit the length of telephone letters—let there be one ten-cent stamp for every one hundred or one hundred and fifty words. The service is not to be used where it would come in conflict with the present special delivery service.

'The farmers' telephone has come to stay, to expand, and to play an important part in our national life. It is true that it has not yet bound all states, not even parts of invaded states, in its meshes; but in most progressive farming sections from Maine to California, and especially in the level Mississippi Valley where farmers raise extensive crops and realize that they cannot afford to be without close communication with the world and its markets, the lines have been run out from the towns over all country districts. It is not unusual to find a telephone hanging by the side of old-fashioned fireplaces in isolated log houses. Though many of the lines that have been built by the farmers themselves, and are conducted by them in person, may be defective, as viewed by an expert electrician, they afford reliable, quick, cheap service. Let the government give the farmer the special mail service that he unintentionally has been preparing the way for, and within a remarkably short time you will find a telephone in the country home of practically every patron of the government mail service. Would this be an advantage in our national life?"

Since the matter has been more fully explained, we agree with Mr. Vanderpile, rather than with Everybody's Magazine. There is no danger of the plan being abused, for these special stamps will not be attached to letters which require privacy. No one needs use the plan unless he wants to do so, and yet the opportunity will be offered for those who desire to avail themselves of it. The plan will not hurt anyone and may be the means of helping a great many farmers who are removed from telegraph connection, and where the mail carrier is an infrequent visitor.

"Desiring to help the Fruit-Grower and at the same time help some of our fruit farmers, I secured a club, which is sent herewith. I feel sure they will continue as subscribers."—J. F. Bain, Lincoln, Ark.

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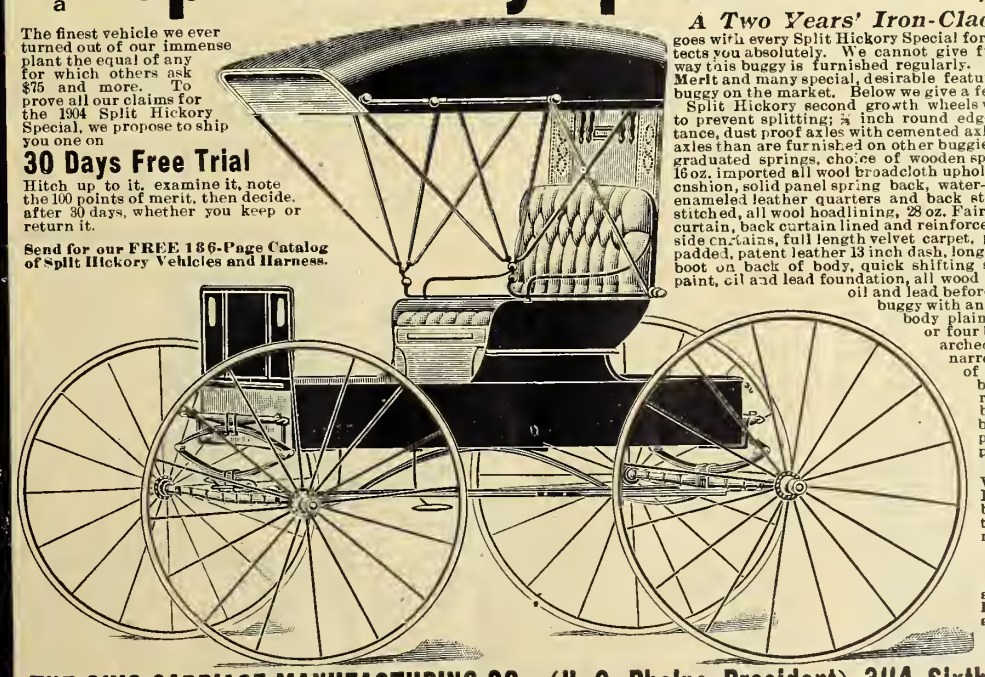

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Western New York Horticultural Society

(Reported by Charles A. Green, Rochester, N. Y.)

The annual meeting of this useful society occurred January 27th and 28th at Rochester, N. Y. The sessions were largely attended by a very intelligent class of fruit-growers. If the meeting could be criticized in any way it might be that it was too commercial, too practical, too sordid without enough sentiment. There did not seem to be a particle of sentiment. In old times these meetings were largely attended by nurserymen and others who had considerable sentiment in their make-up and expressed this in their speeches, essays and discussions. Now the almighty dollar alone is in evidence. The members do not seem to care about anything but the discussion of the few popular varieties of apples of lesser quality, how to grow the largest amounts, how to sell at the highest prices, the best package and how to destroy insects and fungus enemies. Members do not seem to be much interested in rare apples, or other fruits, or in fruits of superior beauty or quality, since their aim is to grow those common varieties oftener than those of superior quality, which for the moment command good prices in the market. The essayists and lecturers are principally professional men from experiment stations who talk of insect enemies, of fungus diseases, and the best way of combating them, without a thought of sentiment. I could almost suggest with propriety in the midst of these practical meetings, a sermon on the man the Bible tells about who felt the need of building larger storehouses in which to pile his wealth, and of the question asked by our Saviour, "What shall it profit a man if he gain the whold world and lose his soul," interpreting the word soul in this instance to mean sentiment, poetry or the desire for a love of the beautiful things of life that lifts up and ennobles us, yet may not be eminently practical or productive of dollars and cents.

Prof. Craig of Cornell University, is an excellent man to help keep things moving at a meeting like this. He is a practical man and a good, plain, easy speaker. He occupied some time in explaining comparative experiments with the liquid sprays and dust sprays. Spraying orchards with dust has not been so largely practiced in the East as in the West. The Westerners use dust sprays for the same purpose that we use liquid sprays. The machinery that throws the dust into the apple trees is called a gun. It is worked by hand. A strong current of air is forced into the dust spray which is thus carried into the foliage of large trees. The work is begun at three o'clock in the morning and continued until about seven, or until the leaves become so dry that the dust will no longer cling to the foliage. Prof. Craig found results from the dust spray slightly more effective than with the liquid spray. He made careful tests, counting the different grades of apples produced by the different sprays. It costs about twenty-two cents per tree to spray with dust, about the same as it costs to spray with liquid.

Injury by the Winter: Many members express the belief that the buds of the various fruits in Western New York were not seriously injured by the present severe winter, since conditions were favorable for the safety of the buds. It is not thought that even peach buds were seriously injured but some of them are, no doubt, injured. Prof. Craig desires that twigs of Elberta and Early Crawford be sent him from various sections so he can learn something of their condition in different parts of this state.

Bushel Boxes, or Barrels, Which?

Much interest is shown in the question of packages for apples, the majority being in favor of the old apple barrel which, however, could not be furnished to them in sufficient quantities the past season owing to the scarcity of barrel timber and the great demand for the barrels. Many were compelled to make boxes, many stored the apples in bulk and made bushel boxes. It was stated that the apple and in which they were sent to market with good success. This year boxes could be prepared cheaper than barrels could be bought. Mr. Powell used 1000 bushel boxes for his Rhode Island Greenings, Seek-No-Furthers and Lady Winter Sweets; part of them were forty-pound boxes and part bushel boxes. It was stated that the apple consumers of New York City buy apples in two, three and four quart lots only, therefore grocers there rather favor barrels at present, and yet they handle fancy apples from Oregon in car load lots, coming in boxes, selling these apples at fancy prices, and the demand was reported good. The general opinion of members was that the box was the thing for fancy apples. Apples ship well in boxes; fancy apples should be wrapped in paper before being placed in boxes. A member sold fancy apples in boxes by which method they yielded him at the rate of $7.00 per barrel. A member near Buffalo, sells his Baldwins and Greenings in Buffalo at $1.00 per bushel box and the box is returned to him, which is quite a saving. It is certainly a serious expense where the orchardist loses the apple barrels, which costs him often forty or fifty cents each. The No. 2 apples are sold to hucksters who peddle them out on the street. Prof. H. E. Van Deman spoke in favor of boxes for apples. Oregon growers ship their apples in boxes. Those going into New Orleans and Vicksburg are all in bushel boxes. Orchardists can make their own boxes during winter for the coming season.

Colorado is not considered an apple growing state and yet Colorado shipped 667,000 boxes of apples into California last year. The size of the boxes adopted in Canada is 20x10x11 inches. The number of apples is marked on each box.

Peach men claim that the Georgia carrier is the best for shipping peaches. Prof. Bailey said that many of the hilly farms in Western New York should be planted to apple orchards. New York state takes the lead as an apple growing state, but we are not progressing so fast in the way of planting new orchards as are many of the numerous other states which are planting apple orchards rapidly. It was his opinion that Western New York was still a very desirable locality for apple orchards. He wondered why there was not more enthusiasm in orchard planting here, or why there should be more enthusiasm in other states where growing had not been so well tested as here.

Question: When apples in barrels in the orchards are overtaken with freezing weather and become frozen, what should be done with them? Mr. Hooker replied, cover them heavily with corn stalks and leave them there, until spring.

Elberta peach buds were reported by a member to be three-fourths alive where the thermometer has been seventeen degrees below zero. He said he could grow Elberta at 50 cents per bushel and make as much money as he could by selling Crawfords at $1.00 per bushel.

The pear psylla is doing much damage to pear orchards in Western New York; there are localities where it has not done any injury. Mr. Wood told his experience, saying that it must be fought all the season, beginning with the spray just before the pear trees blossom, which is the time when the young insects hatch and when they could be easily destroyed, then keeping up the spraying throughout the season if the insects were not previously destroyed. He used the Anchor brand of whaleoil soap, and the first spray consisted of 1 pound of this soap to 6 gallons of water. If it does not kill the insects he goes over it again with a stronger spray, 1 to 4 of water, ending with a spray of 1 to 7. This spray of 1 to 7 he uses also for aphis.

Aphis, or plant lice, did great injury to apple orchards, also to apple, cherry and plum trees in nurseries last year. The condition of the weather was such as to encourage the growth of these plant lice. It is thought these aphis may never be so numerous again.

Export demand for apples and pears was never better than during the past year and at present, owing to the short crops in Europe and the increasing demand for our superior fruits. Arsenite of soda in place of Paris green was recommended by Prof. Slingerland.

Apples in barrels will stand some frost without injury. In cold storage houses the temperature is often kept below freezing, thus frost is found on the inside of the barrel, but the fruit is not injured.

Cold Storage Houses.

Western New York is the home of many of the largest cold storage houses in the country. It is not thought best to build cold storage houses of less capacity than 10,000 barrels, since it will occupy one man's time to attend to the cold storage house and he can attend to 10,000 barrels as easily as 1,000 barrels. It costs about $1,000 for 1,000 barrel capacity for building a cold storage houses, therefore the building of the capacity of 10,000 barrels will cost $10,000.

Question: Can good crops of apples be grown on sandy soil? Yes, if the soil possesses fertility enough to grow a fair crop of corn. Members have seen some of the best apples growing on sandy soil. Mr. Tenny would prefer a gravely soil to a sandy soil for apples. Mr. Wood would plant on sandy soil with Duchess, Wealthy, Baldwin and Twenty-Ounce. He plants Baldwin widely apart, since they grow large. Other varieties such as Duchess, Yellow Transparent, Bismarck, Wealthy and Twenty-Ounce he plants closer together. Often he uses the quick-growing varieties as fillers, planting one of them between each Baldwin. He finds this much better than planting peach trees as fillers in apple orchards. Prof. Van Deman and others counsel against planting peach trees in apple orchards. Peach trees are great feeders, they grow rapidly and tend to stunt the growth of the apple trees. Peach trees require different culture from apple

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A. G. SAMUEL, Manager. ESTABLISHED 1870.
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Tobacco dust applied about the roots of fruit trees is one of the best insecticides known for all insects which work on the roots, such as woolly aphis, etc. In addition to its value as an insecticide tobacco dust is a most excellent fertilizer for all kinds of fruit trees, and is worth more than its cost as a fertilizer alone. Use it, and keep your trees in a thrifty, healthy condition.

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Waterman Sweet Cherry

Is of Russian origin, tree absolutely hardy, immensely productive, annual bearer. Fruit superb, very slightly sub-acid, just enough to make it desirable to eat out of hand, and as a canner has no equal.

Write us for our handsome illustrated catalog and price list of **General Nursery Stock,** which will be mailed free to all. Our prices are right. Everything fully guaranteed to satisfy the purchaser. Our nursery is located in the southeast corner of Nebraska. All trees are grown on rolling upland; no lowland immature stock sent out. We send out none but thrifty, fresh dug stock. All correspondence promptly answered.

HUMBOLDT NURSERIES

BOX O, HUMBOLDT, NEBRASKA

10,000 APPLE TREES, 3-YEAR-OLD
20,000 APPLE TREES, 2-YEAR-OLD

The leading varieties are Ben Davis, Wine Sap, Jonathan, Grimes Golden, Rome Beauty, Rawle's Janet, Yellow Transparent, Penn, Red Streak, Colline Red, Duchess of Oldenburg, Minkler, Red June, Gano and some 20 additional varieties. The trees are smooth and straight and sure to please. Also have to offer 4,000 Pear trees, mostly Kieffer, some Garber, Bartlett and Dwarf Duchess De Angouleme. My peach trees are not so heavy this year. Will have about 5,000 light grades. Write for prices stating varieties and grades wanted.

L. F. DINTELMANN, Belleville, Illinois

LUSCIOUS FRUIT

Trees and Vines, noted for both productiveness and hardiness, have made my nursery stock preferable among American orchardists everywhere. It grows—it bears—it's just as represented. Send for my new catalog—it is full of truthful pictures and honest claims. It's free.

GEO. H. WHITING, Lock Box 1110, Yankton, South Dakota.

80%
Increase in the Fruit Crop.

This is the actual results of spraying with the wonderful

Hardie Spray Pumps

The "Hardie"

Is so powerful that it sends its fog-like spray to the tops of the tallest trees.

So simple in construction that a boy with a monkey wrench can take it apart and put it together again.

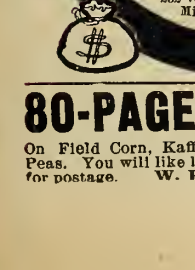
All its working parts are heavy brass, so finely fitted that there is no friction, no leather or rubber about them.

That's Why They Work So Easy.

We make them in many sizes and styles. Our catalogue tells you all about them. FREE—send for it.

THE HOOK-HARDIE CO.,
59 Main St.,
Hudson,
Michigan.

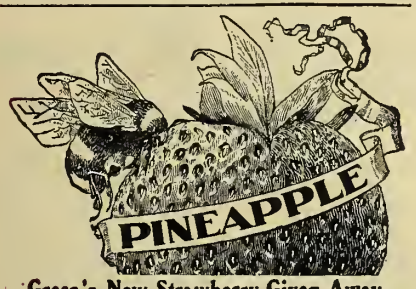
The Best SPRAY PUMP ON EARTH.



We know its merits from practical experience. Having used almost all known pumps in our own orchards, consequently we are able to judge of its superiority over all others. It is the most durable pump made. The easiest working pump; no stuffing boxes to look after. The handle is adjustable to suit the height of the operator. The agitator is a simple direct motion, and keeps the solution thoroughly mixed. A pressure of 150 to 200 pounds can be easily obtained. HAND AND GEARED VINEYARD SPRAYERS A SPECIALTY. Patented and manufactured by

LATHAM & COMPANY
Send for Catalogue. Sandusky, Ohio.

COMPRESSED AIR..... SPRAYERS
Two and four-gallon sizes. Made of heavy galvanized iron; also brass. For gardens, orchards, lawns, shrubbery, chicken houses, etc. No continuous pumping. Compressed air device sprays continually. Send $1.50 for sample. Big money for agents. Address D. B. SMITH & CO., Utica, N. Y., U. S. A., Dept. D.



Green's New Strawberry Given Away.

We will mail you six plants of Pineapple Strawberry, the largest and best on earth, pineapple flavor, most productive, vigorous and healthy, bears fruit at once, if you will send us now

25 Cents For
GREEN'S FRUIT GROWER AND HOME COMPANION
For Six Months.

Established 22 years ago. It has 108,000 subscribers. Capital $100,000. Luther Burbank says it is the best family fruit journal in America. Send 25 cents now. Plants will be mailed in April. Mention this paper, and get 100 page Fruit Book Free. Address.
GREEN'S FRUIT GROWER. Rochester, N.Y.

80-PAGE BOOK FREE
On Field Corn, Kaffir Corn, Sorghum and Stock Peas. You will like it. Send two two-cent stamps for postage. W. B. Otwell, Carlinville, Ill.

treos, thus peachos should bo plantod in orchards by thomsolvos and applo trees in orchards devotod only to apples for choico results.

Bismarck applos seemed to attract considorable attention and many wanted to know about it. Prof. Van Deman said it was of large sizo, red and ho had seon trees of Bismarck loaded down with fruit. It will keep well and bears at an early age, that is soon after planting. It is not of tho best quality, but far better than Ben Davis, about with Baldwin for quality.

Question: Having a largo barn cellar, can I keep applos therein by filling the corners of the cellar with Ice? Answer: Yes, you can keep apples in barrels in such a collar until June by having plenty of ice.

Prof. Van Deman recommended 500 pounds of Carolina rock per acre to fertilize orchards, but he said it was useless to supply commercial fertilizers in the absence of humus in the soils. You must keep up the supply of humus by plowing under Canada peas, cowteas, rye, buckwheat or some other crop that furnishes humus.

Question: What is the cause of rusty pears? Reply: Undrained soil or too much vitriol has been used in the spray.

Question: Is it practical to prepare holes for planting trees by using dynamite in each hole? Reply: Yes, where the subsoil is hard it may be broken up by an explosion of dynamite, enabling the roots of trees to pass into a better soil. An orchard near Rochester was in such rocky land, holes in the rock had to be blasted before each tree could be planted. This orchard proved a profitable one and very productive.

A ray of sunshine and sentiment was introduced when the George Ellwanger prizes were awarded for the best, most interesting and properly maintained collection of large and small fruits to Williard Hopkins and Son, $40.00; second prize to M. N. Cook, $20.00.

Another effort of a similar nature was made by a local landscape gardener, who had made designs for beautifying country homes and had spread them upon the walls. The essayist, an aged man with white hair and beard, began to read his speech after the final resolutions had been offered, and after the last question of the question box had been answered. The moment he began his essay half of the audience arose, grasping their hats, overcoats and umbrellas and made a dive for the door. A number of those who remained engaged in loud conversation among themselves, much to the embarrassment of the reader. Here was another evidence that too often we become hardened in our rush after the almighty dollar, so that we care but little for sentiment and are not interested in affairs that tend to brighten rural homes and make life really worth living. CHAS. A. GREEN.
Rochester, N. Y.

Why, Brother Green, it isn't because the growers have less sentiment than they used to have. They have simply had to use all their wits to fight the pests they have to encounter, which were not so numerous at the time to which you refer. There is not the time for sentiment. If you will control the insects and fungous diseases, we daresay the fruit-growers of today will have as much sentiment as they used to have. But one cannot go into ecstacies over the glories of the spring morning, with its beauty of cloud and sky, when the very air is filled with the webs and wiggling bodies of the canker worms. Nor can one appreciate the "warm, moist breath of summer" which the poet talks about, when he knows that this same condition is just right for the propagation of the spores of the bitter rot, which will ruin his apple crop.

No, sentiment is all right, but when a lot of experienced, practical fruit-growers get together they have to work hard to find out all that everyone else knows about the best methods of fighting their common enemies, and there is simply no time for anything else. Isn't this the case, now?—Editor.

Novelties Not Wanted.

In your December issue I notice an article from C. B. Haviland, Cynthiana, Ky., in which he tried to impress on your readers the fact that there was such fruit grown as white blackberries. I can vouch for the accuracy of the Kentuckian in that statement, because we had a few—and only a few—small shipments of this fruit consigned to us to sell on this market, and it recalls the fact that we could hardly give them away. They were stared at by dealers and citizens and regarded as a novelty, but nobody cared to invest in them and hence for commercial purposes they were not entitled to recognition. We also got an occasional shipment of the yellow raspberry that shared a similar fate. The raspberry that is neither red nor black will find few friends in any market.

The Japanese persimmon is another attractive novelty that commands admiration, looking more like a fully grown ripe tomato than anything else yet when it comes to securing buyers for it they are nowhere to be found—so for commercial purposes it is a failure. I might pursue the subject further and enlarge the list of so-called novelties supposed to be more or less valuable acquisitions. While such products may have some local value, they are practically worthless as far as growing for the leading markets is concerned. P. M. KIELY.
St. Louis, Mo.

I WILL GIVE YOU a Perfect Fitting Pair of GOLD SPECTACLES FREE.
SEND NO MONEY.

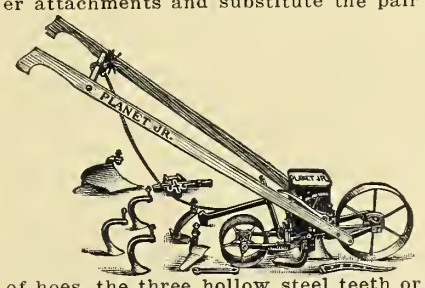
Just write me ten names of spectacle wearers and I will do this:—First I will mail you my perfect Home Eye Tester Free. Then (after you have sent me your test) I will mail you a full $2.50 family set of spectacles (which will wear yourself and family a lifetime) for only $1.00—and with this I will also send a Handsome Rolled Gold Pair Free. My regular price for this full family set of spectacles is $2.50 and your home dealers are charging from $2.50 to $5.00 a pair for them, which would make this set cost you about $10.00 if you bought them from your home merchant. I am really giving away the whole set free (the dollar I will ask you to send me with your test is only to pay for this announcement). I am doing this for a short time only, just to prove to you and all other spectacle wearers in the United States that my spectacles—the Dr. Haux "Famous Perfect," Vision Spectacles—are the most perfect fitting, clearest and the best that money can buy, and I'll give you your dollar back and let you keep the spectacles also if you yourself don't say they are the best and finest you have ever bought at any price. Address:—
DR. HAUX SPECTACLE CO., ST. LOUIS, MO. I WANT AGENTS ALSO.
NOTE.—The above is the largest spectacle house in the United States and is thoroughly reliable.

Missouri Valley Seed Co., St. Joseph, Mo., general Western distributors for Bowker's Disparene. See ad on page 18.

Missouri Valley Seed Co., St. Joseph, Mo., general Western distributors for Clark's Cutaway Harrows. See page 20.

Planet, Jr. No 4 Illustrated.

We are giving place here to an illustration of the Planet, Jr. No. 4 Combined Drill, perhaps the most popular of all the famous Planet Jr. line of garden tools. We call it drill for brevity, but it is much more comprehensive. The gardener finds in it almost every tool for hand work he needs. As a seeder, it drills and also plants in hills with greatest accuracy, and it may be set so that they shall be 4, 6, 8, 12 or 24 inches apart, as desired. It is but the work of a moment to remove seeder attachments and substitute the pair



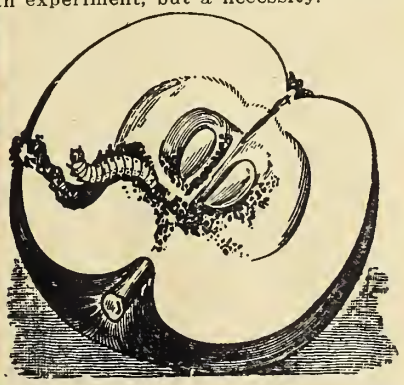
of hoes, the three hollow steel teeth or the plow, and you have an ideal wheel hoe, cultivator or plow, as the case may be. Its handles adjust to suit either man or boy. Simply raising the handles cuts off the flow of seeds instantly. As a hoe or cultivator, it may be used either in the furrow, or by means of an extension piece, when plants are small you may hoe or cultivate both sides of the row at once. With all its width of duty it is most simple and it is most durably built. An idea of its real genius cannot be conveyed in so small a space as this. It is advertised elsewhere. S. L Allen & Company of Philadelphia, the manufacturers, will gladly send catalogue fully describing. It is a good investment to send a postal for it.

Farm Telephones.

The day is not far distant when the rural districts of this country will be as completely covered with telephone systems as are the cities today. Progressive farmers, ranchmen and fruit growers are taking an active interest in telephones and they are eagerly seeking knowledge on the subject. The Julius Andrae & Sons Co. of Milwaukee, Wis., one of the largest manufacturers of telephones in the world have just issued a book containing full and complete information on telephones. They advise us that a copy of this book will be sent free of any charge to those of our readers who are interested in the subject. The book can be secured by addressing the Julius Andrae & Sons' Co., at their Milwaukee office, 232 West Water St.

SPRAYING FRUIT TREES.

The question of spraying fruit trees to prevent the depredations of insect pests and fungus diseases is no longer an experiment, but a necessity.



Our readers will do well to write Vm. Stahl, Quincy, Ill., and get his catlogue describing twenty-one styles of praying Outfits and full treatise on praying the different fruit and vegeable crops, which contain much valable information, and may be had for he asking.

400 Irish Juniper
Four times transplanted. Four feet high. Fifty cents each.

200 Rosedales
Two times transplanted. Twenty inches high, thirty-five cents each. A reduction on large orders. All packing free. Address

PINEHURST FARM
R. F. D. No. 5 Station A, Topeka, Kansas

Many Nurserymen Offer Cheap Trees. Some Nurserymen Offer Large Quantities of Trees.
I OFFER THE BEST TREES
that money, location, and experience can produce. I propagate from best bearing trees. But send me your address and let me tell you all about my stock for Spring shipment.
Write for prices. My Fruit Book is free to all customers, to others 20 cents. It is full of good, wholesome information (no advertising matter). Send for it today.
Nurseries at Carrollton and Perseyville, Ill.
JOHN A. CANNEDY
Lock Box 614 Carrollton, Ill.

Champion Peach Trees
100 Genuine Champion. Perfect little trees. Express paid to your station for $5.00. The Champion is the hardiest and best peach for general planting. A full line of other nursery stock at lowest possible prices for high grade. Write at once for descriptive list.
NEW HAVEN NURSERIES,
Dept. H. New Haven, Missouri

Best Nursery Stock
Lowest Prices at the Old Reliable
Capital City Nurseries
Established 1869. Packing and Shipping facilities unexcelled. Agents Wanted.
C. L. Watrous, Des Moines, Ia.

St. Joseph Business University
Established in 1879.
CATALOGUE FREE
A modern, progressive school, making a specialty of
BOOKKEEPING
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PENMANSHIP, TELEGRAPHY and all English and Commercial branches. Well patronized. Students enroll at any time. School in session throughout the year
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116 South Third Street and 115 Market Square St. Joseph, Mo.
Wholesale Fruits and Produce
Berries a Specialty
Dealers in Berry Box Material, Grape Baskets, Egg Case Material. All kinds of Baskets in stock. Established 1864.

$10.95 NEW STEEL RANGE.
FOR $10.95 we will sell this new, handsome, nickel trimmed, 1904 model, square steel range (with reservoir or closet, as illustrated, a trifle extra). For full particulars, how we make our steel ranges thicker, heavier, stronger, handsomer and better than any other ranges made in the world; for our three months' free trial offer, safe delivery guarantee, pay after received terms; for picture of our foundry, the largest stove foundry in the world, cut out and return this ad. and our Free Stove Catalogue of everything in steel and cast iron stoves and ranges will be mailed at once. With our Free Stove Catalogue you get the most astonishing stove offer ever heard of.
Address SEARS, ROEBUCK & CO., CHICAGO, ILL.

Arkansas Horticultural Meeting

Arkansas has added to her laurels as a fruit country by holding the best meeting in the history of the State Horticultural Society. Van Buren made friends by the heartiness of her welcome to the visitors. One distinguishing feature of this convention was the presence of new members. Many additions were made to the roll, and it is safe to say that Arkansas stands well to the front in number of members of her State Horticultural Society. We will say the increase will continue and the attention of the fruit world will more and more be directed to the state that is positively crammed with undeveloped resources.

Morning Session.

President Jno. P. Logan called tne meeting to order and prayer was offered by Rev. D. T. Stanley.

Mayor W. P. Woolum welcomed the delegates on behalf of the city. He said when he told his wife that he was to give an address of welcome he heard something fall; it was his wife! In the name of one of the best towns in the country and of the best people he welcomed the guests. "The best we have is yours—and we have the best," he said.

Dr. W. L. Gullett extended a welcome from the people of Crawford County—from the valleys where the twin crops, cotton and corn, grow, and from the hills, where the fruit grows. "We welcome you for what you are. Where fruit is produced there flourish schools and churches. Horticulture is advanced agriculture. We recognize you as the aristocracy of the country and we are proud to welcome you."

Hon. George Woods, on behalf of the business men of Van Buren, opened the gates to their hospitality. He said as a rule business men and sailors are not given to public speaking. Admiral Sigsbee was referred to as a sailor who did not make addresses. If business men do not make speeches they are all right as to capacity and honesty. "You knew you would be welcome or you would not have come here. We are glad you are here. We are a proud people, not 'stuck up,' but proud of our country—proud of our cotton, of our strawberries, peaches; proud of our churches, schools, of our railroads, cotton compress, box factory, of our banks, of our lawyers who can get one in or out of jail; of our doctors; proud of our name—that of the eighth President of the United States—the greatest nation of the earth. We are proud of our climate, water works, electric lights, of the new $20,000 Y. M. C. A. building; proud of our politics, where every man can vote his sentiments; proud of our ladies and proud of our State Horticultural Society."

President Logan was glad to see so many here. Considering we had no apple crop, the large attendance was remarkable. He was glad for the hearty welcomes. In 1850 Arkansas had 17,000 farms; in 1900, 188,000 farms. The increase in the products of the farms in ten years was 15 per cent. Value of our fruit in one year, $3,500,000. If the proper means had been used to save the apples a million dollars more would have been saved. Mr. Logan, who is superintendent of the Arkansas horticultural exhibit at the World's Fair, said a fine collection of fruits had been made; 1,300 bushels of apples are in cold storage in St. Louis. Arkansas will have nothing to fear at St. Louis, and he is confident the citizens who attend the fair will be glad they live here.

Tuesday Afternoon.

At the opening of the afternoon session Col. W. G. Vincenheller referred to the Missouri State Horticultural Society's report as to the identity of the Gano and Black Ben Davis apples. He moved that a committee of three be appointed by the chair to report on this question, from Arkansas' standpoint.

Capt. Geo. T. Lincoln stated that the Missouri committee of eminent men, after a thorough investigation, reported that the apples were identical, and he thought the verdict should be final.

Colonel Vincenheller would not reflect upon the Missouri committee. He said new evidence had been obtained and it was here. He thought Arkansas should have something to say as to the apples originated most in her borders.

Henry Wild, of Sarcoxie, Mo., suggested the motion was hardly consistent with the previous attitude of the mover.

Colonel Vincenheller wanted the searchlight of truth turned on.

It was voted that the committee be appointed. The president named Col. W. G. Vincenheller, A. W. Poole and J. E. Reynolds as the committee.

Hon. John Hamilton, Farmers' Institute specialist, of the United States Department of Agriculture, addressed the convention. He was gratified over the orchards he had seen in the Ozark country. He was glad to see that the people here think they are in the best part of the country. Plant an orchard, you who have none. It helps to anchor one. He spoke of the growth of the farmers' institutes in the United States. They come because they were needed. It now requires more than ordinary intelligence to farm profitably, in the East, on worn-out land, where harvests were reaped and no returns were made to the soil. Modern agriculture improves the land more and more, and furnishes products for export. For forty years the United States government has been endeavoring to prevent the impoverishment of land. In 1862 congress passed a bill giving 30,000 acres, for each member of congress, for the purpose of establishing and maintaining agricultural colleges. The government went back to the beginning and improved the men. Forty-two thousand men have been graduated from these schools who are devoting their entire time to the improvement of agriculture. The experiment stations have 700 men experimenting. Bulletins are issued and mailed. Last year 700 different publications were brought out; 11,000,000 copies were distributed. The only states without farmers' institutes are Arkansas, South Dakota and Wyoming. There are 900 men in the field talking agriculture and three times as many local men help in the work. Not until science came to the assistance of agriculture was there progress. The government recently appropriated $250,000 to fight boll weevil. The work of the scientific men is invaluable. In Pennsylvania 130,000 men attended institutes last year. There were meetings in every county. In New York and Ohio there was equal interest. The facts of science relating to agriculture and horticulture should be spread in Arkansas. The old way of testing iron was a slow process. Now it is done by the chemists. Agriculture is to be helped in similar way. If you want a school of agriculture, organize something in the line of farmers' institutes. The time is coming when quality, not quantity, will be demanded. The German wine maker whose vineyard covered different slopes made up the grapes separately, as they tasted differently. Plant your vineyards in reference to quality. There is going to be a change during the next twenty-five years. People are going to taste the fruits before buying—they will not buy on the looks. Some wheat has 14 per cent gluten; ordinary wheat 9 or 10 per cent. Varieties of corn differ in per cent of feeding value. In Canada, to fill the demand for a bacon hog the breed was changed from a lard producer to the present type, and the farmers are getting the highest prices in England.

The institute can revolutionize an industry. If you want good roads, work for them, through the institute. Pennsylvania had 1,300 different road laws. The farmers' institute turned in to make a change, but the mass of the farmers wanted no change, preferring to work out their taxes. If a majority understand a thing, and it is right, they get it. Men who were informed spoke at the institutes. After thinking several years the majority decided for a change, and now $6,500,000 are annually appropriated for the country roads. In some of the district schools the teacher taught twenty-seven classes a day! What happened? After five years discussion it was decided to have consolidated schools. Now any country neighborhood can have as good a school as the town. The speaker urged local organizations, then central ones. You cannot do too much for your State University and Experiment Station. Mr. Hamilton was given a rising vote of thanks.

I. Henthorn read a paper, "Observations By the Way." It is a mistake to plant trees on wet land or on hard-pan land. Select good land for orchard, plow thoroughly, set trees 30x30, buy good trees even if they cost two or three prices. Spread out the roots in planting, especially the fibrous roots of the yearlings, pack the dirt around them, lean the trees towards the 2 o'clock sun; prune in two and a half feet; cut roots to 8 or 10 inches; cut branches at least one-half; look out for borers; grow corn or cow peas between rows; not too close to trees; give trees plenty of air. It is well to grow one or two rows of cow peas next the trees. Don't use a turning plow near trees; remove dead and broken limbs; spray every year. Don't do heavy pruning; do a little every year. Never leave a stub, as it will not heal over. In cutting off a large limb cut underneath first. Some orchards have been ruined by planting too close together. Don't plant peach trees in an apple orchard. Live in your orchard as much as possible.

Mr. Williams thinks it is a mistake to lean a tree. It is not so in the woods.

Prof. D. Compton's subject was, "A Chapter in Mistakes." Mistakes, in their consequences, are as disastrous, sometimes, as crimes. Bad examples may be used to excite our fear and so serve a good purpose. The speaker had been over-worked and he moved from the East to the Ozarks, bought 100 acres of rough land. It was a mistake to buy so much land. He planted some poor trees, cultivated corn instead of cow peas; lost fertility by washing by rains. Another mistake was failure to protect the trees; finally used wooden wrappers, but teh borers got in in spite of these. The past season he dug out the borers and the trees were not injured by the cutting. Orchard of forty-five acres now free. A timely expenditure of

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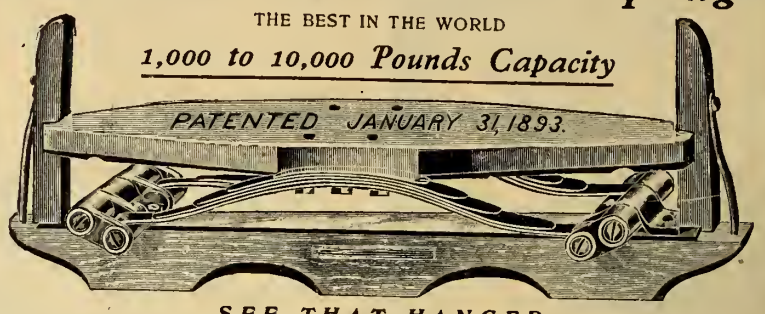
The Reiter Patent Bolster Spring

THE BEST IN THE WORLD

1,000 to 10,000 Pounds Capacity



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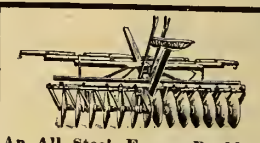
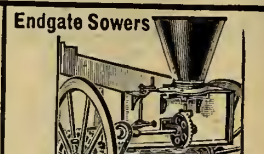
PITTSBURG BOLSTER SPRING COMPANY
P. O. BOX 1083, PITTSBURG, PENNSYLVANIA

SAVE MONEY On HIGH GRADE IMPLEMENTS

Only $10.65 for a 14-inch Double Shin Steel Beam Plow, warranted in every way to give satisfaction or your money back. Implements of all kinds in our Special Implement Catalogue, yours for the asking.



An All Steel Frame Double-Lever Disc, complete with eveners. Chilled Bearings throughout of the anti-friction pattern. Our Implement Catalogue shows a complete line.



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$19.95 is our price on Combined Lister and Drill, f. o. b. Kansas City. This is a strictly up-to-date machine of the latest improvement. Our Implement Catalogue describes it fully.

High Grade Harrows Steel Lever $4.95 per section. Can furnish you with a channel steel guaranteed U-Bar Harrow. Either two, three or four section. Other styles in our Implement Catalogue.

Fitted Lister Lays $1.25

buys a 14-inch guaranteed fitted lay to fit your Lister without any work whatever. This is a saving of over 50%. Full line of Fitted Plow Lays, Cultivator Shovels, etc., shown in our Special Implement Catalogue.

Our Price Book No. 17 for 1904 containing 800 pages and brim full of high grade merchandise at the lowest figures you ever heard of, is ready for distribution. In addition to our implement line, it contains prices and descriptions of goods of every class imaginable. Enclose 10c to pay half the postage and we will forward catalogue FREE. Before laying this paper aside make out your order for one of our mammoth 1904 catalogues. Your investment of 10c will be returned a hundred times, on your first order. Send at once: in fact, DO IT NOW. The Special Implement Catalogue free on request.

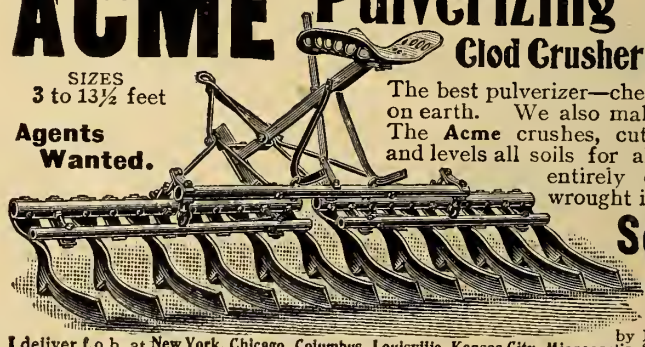
O. L. CHASE MERCANTILE CO., Dept. M8, KANSAS CITY, MO.

ACME Pulverizing Harrow

Clod Crusher and Leveler.

SIZES 3 to 13½ feet

Agents Wanted.



The best pulverizer—cheapest Riding Harrow on earth. We also make walking ACMES. The Acme crushes, cuts, pulverizes, turns and levels all soils for all purposes. Made entirely of cast steel and wrought iron—indestructible.

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To be returned at my expense if not satisfactory. Catalogue and Booklet "An Ideal Harrow" by Henry Stewart, sent free.

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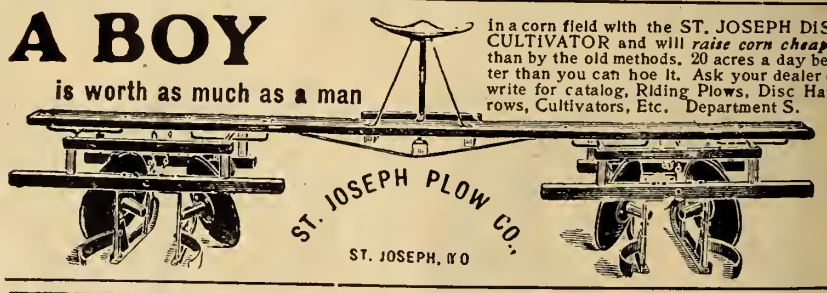

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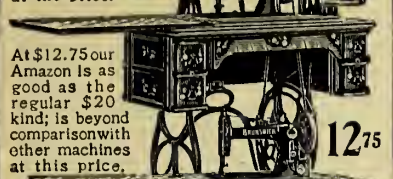

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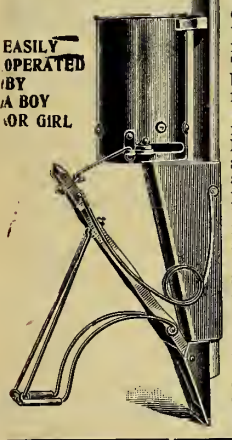

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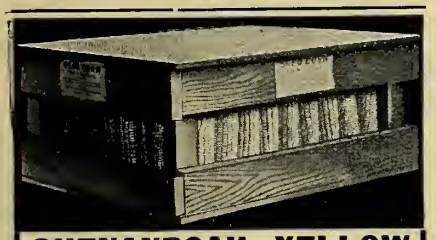

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THE EAR SEED CORN MAN

WIRE $1.40 PER 100 LBS.

SMOOTH GALVANIZED WIRE put up 100 lbs. to a bale, gauges from 11 to 14 inclusive. Lengths running up to 250 ft. Per 100 lbs. $1.40. **Fence Staples,** all sizes, per 100 lbs. $2.00. **Wire Nails,** assorted in a keg, per 100 lbs. $1.70. **Barbed Wire,** per 100 lbs. $2.60. **Poultry Netting, Field Fence,** etc., at low prices. **Ask for free catalogue No. 899,** on merchandise of all kinds from Sheriffs and Receivers sales

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Make Your Own Fertilizer

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From 1 to 40 H. P. Also **Bone Cutters,** hand and power, for the poultrymen; **Farm Feed Mills, Graham Flour Hand Mills, Grit and Shell Mills.** Send for catalogue.

WILSON BROS., Sole Mfrs., Easton, Pa.

Five Million Fruit Trees

painted with **OTWELL'S TREE PAINT** last year. Trees benefited and pests kept away. More farmer agents wanted. Terms and circulars free. **W. B. OTWELL, Carlinville, Illinois**

$25 in one instance, would have saved $1,000. He will fill in the washouts. He made the mistake in delaying planting small fruit. His strawberries paid well. He would have made money had he planted raspberries earlier; was advised this fruit would not pay. In 1898 he put in 1,000 peach trees; later seven acres more were set. In 1892 he had 1,600 crates and realized a profit of $1,000. If all his trees had been true he would have cleared $2,000. The word "Mistake" is evident from the car windows along the K. C. S. R. R. for miles owing to worthless trees.

Last spring he found many borers. He dug them out and washed the trees. If the coming season shall give us no peaches he may be tempted to burn the trees, so uneven and untrue are they, and plant raspberries and blackberries. He shipped some grapes, but they did not pay. He finally made a barrel of wine and it sells readily. He made a mistake in planting so many varieties of little value.

In reply to question as to best time to hunt borers, Mr. Compton said: "As soon as you know there are any in the tree, August is a good time."

Major Holsinger: "Don't you find paper wrapping protection against rabbits?"

Mr. Compton "Paper answers every purpose. It should come 15 inches above the ground."

Question: "Do not borers go for stunted, unhealthy trees rather than health yones?"

Mr. Compton "I have found no difference. My best trees were attacked. The beetle deposits eggs in May, also in August."

F. M. Farris has found that eggs are deposited above the ground; has taken them out from under the bark. On one occasion he observed an insect making deposit. Seventeen years ago, when worming an orchard, he discovered a beetle crawling on the ground; he watched it an hour; it was very shy, and tried to hide. He kept very still; finally the beetle crawled up a small tree, made an incision through the bark, then deposited the egg and covered it over. Going to the tree he found the egg and took it out.

Tuesday Evening.

In the evening Prof. Geo. G. Hedgcock, United States Department of Agriculture, gave an illustrated lecture on "Fruit Tree Disease." This was a valuable presentation to all present, the pictures on the screen adding to the lecture. After the lights were turned on numerous questions were asked.

"Is root-gall necessarily fatal?"

Professor Hedgecock: "It is with peach and several other trees, and with the grape. Apple trees may live, but don't plant a tree that has root gall. A tree affected with crown gall is a doomed tree."

Root-rot rots out the center of the tree. Cedar rust will not kill fruit trees unless it kills all the leaves. It affects the leaves, not the wood.

"Bitter rot is found as far north as Vermont, but has not been discovered in Nebraska.

"Sometimes a peach tree will thrive in the spot where root rot killed the apple tree."

"You can't afford to throw away any fertility. It would pay, even, to fertilize Mississippi bottom land."

"The codling moth is your worst enemy."

"Would it be dangereus to bury mummied apples in an orchard?"

"Yes; unless you lime them. The finest orchard I ever saw was disked both ways. Never over-crop an orchard."

Professor Hedgcock knows his business; is never at a loss for an answer to a query. His address was highly appreciated.

Wednesday Morning.

President Logan announced the following committees:

Resolutions—W. W. Turner, Nashville; J. M. Cook, Fayette; J. W. Corbell, Charleston.

Legislation—R. D. McMuller, Dardanelle; O. W. Patterson, Gentry; E. S. Foreman, Green Forest.

Exhibits—I. Henthorn, Bentenville; A. V. Swaty, Texarkana; William Norwood, Rhea.

Constitution—G. T. Lincoln, Bentonville; M. F. H. Smeltzer, Van Buren; L. S. Shibley, Green Forest; J. H. Nalor, Mena.

Special committee to ascertain the origin and identity of the Black Ben Davis and Gano Apples—W. G. Vincenheller, Fayetteville; A. W. Poole, Ozark, Mo.; J. E. Reynolds, Green Forest.

President Logan suggested that it would be well to have a committee to arrange a program for next meeting. As it is there are too many papers; more than can be read, even. There is too little time for discussion. Heretofore many on the program had failed to prepare papers. This year nearly everyone responded.

O. W. Patterson moved that a committee of three be appointed. Carried.

Those interested were invited to send for Bulletin No. 40 on bitter rot. Address Superintendent of Publications, Department of Agriculture, Washington, D. C.

"Fruit-Growing in Northwest Arkansas" was the subject of an excellent article by W. J. Peirson, president of the Rogers Horticultural Society. Fruit-growing is now leading industry. With an elevation of 1,500 feet, and other conditions favorable, there is no reason why our section should not be prominent in the future. He referred to the late Stephen B. Wing as one of the leading men in Northwest Arkansas, and a good man. He recommends planting tested varieties, thorough preparation of soil, subsoiling, prune to 24 inches, cultivate thoroughly. If corn is grown between the tree rows, plow in the stalks. Later grow cow peas or clover. Early Michel strawberries and Ben Davis apples have lifted more mortgages and created more bank accounts than anything else. The name of the grower should be put on his package. There should be intelligent work all along the line.

Mr. Gullett said subsoiling was not wise on the mountains.

Mr. Rhinehardt said Winesap and Mammoth Black Twig are the best apples for Crawford County.

The subject of G. A. Atwood's paper was, "Possibilities and Responsibilities." In no other part of the country does the text so aptly apply. It is a section of the greatest diversity. All the fruits of the temperate zone, corn and cotton and vegetables are natural products. The climate and water are all that can be desired. Wonderful results have been made by fruit-growers. With such possibilities citizens should improve them and make this the garden spot of the country. A land of beautiful homes, of schools, of an honest, noble citizenship. Efforts for the protection of the people should be persistent. Where horticultural products are to be so immense growers are responsible for their distribution.

E. S. Foreman told of the advantages of fruit-growing along the line of the Eureka Springs railroad. Until the railroads reached us we were little known. The railroad battered down the walls that hemmed us in. Now we want to be shown how to grow fruit, and you have helped us. The White River railroad is also opening up a new country for horticulture. The Creator was so partial, in making Arkansas, He put some up edgeways, and filled it with mineral. The quality of our fruit will compare favorably with any part of the world. Our exhibits won highest honors at St. Louis in 1903. We have a delightful place to live, a jolly, hospitable people, no tramps, no millionaires.

"Observation of Five Years in Commercial Peach Orchards in Arkansas" was the subject of an enteresting address by F. M. Farris. The largest orchard five years ago had 2,000 trees. Now over fifty orchards have 1,000 or more and some have over 10,000 trees each. In Johnson County there has been great progress. A neighbor in 1902, from 1,300 trees sold 2,900 crates. Now he has 25,000 trees in bearing. A German hada few Triumph trees and 175 Elbertas, in 1902. When his wife suggested he should pay some attention to his peach trees, he said he had "no time to fool away with peaches." But his wife attended to the crop and received $338 for it. He knows a number of orchards that paid, at four years old, $100 per acre. Cost of land, $10 per acre. He spoke of Mr. Scott's orchard at Hackett, which contradicts theories. He has thirty acres in peaches, also thirty acres in Delaware grapes. In 1901, when trees had been planted two and a half years, they were loaded with fruit. He picked 4,500 4-basket crates; crop in 1902, 12,000 crates; in 1903, 1,500 crates. He has received $80 per acre from his peaches for every year since the trees were planted. Mr. Scott never prunes, has not hunted borers, but he gives his orchard good cultivation. Arkansas has not been a factor in the past, but she will be known in the future. He hopes the railroads will give a smaller minimum weight for carloads, so growers can supply some of the smaller markets.

O. W. Patterson, the able manager of the Gentry Association, presented the claims of the raspberry. Nothing responds better, in his experience, to cultivation, than raspberries. One day, in 1902, he instructed his pickers to gather the berries clean. These were evaporated and sold at 17 cents per pound. In fourteen years his berries were damaged by frost but once. From five acres in 1902 he made $615.05. Rolling land is preferable and thorough cultivation essential. Rows north and south are 7 feet apart; east and west 3½ feet. The plants can be cultivated as easily as corn. Plants for spring planting should be set in trenches; do not set deep. His varieties are Palmer and Kansas. Cumberland has not been tried extensively, but it is well thought of. Cultivate till berries begin to ripen; give at least two cultivations after berries are packed. In fall cut out old canes and burn them. Leave but 3 or 4 canes in hill.

Maj. Holsinger spoke highly of the Cumberland. In the six years he has had the Cumberland there has been no anthracnose in the patch.

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June Budded and One Year

Peach Trees

Elberta and all the good kinds. We pay freight and guarantee trees to arrive in good condition. Our trees grow and bear fruit. **Write for** catalogue and price list.

SOUTHERN NURSERY CO.
WINCHESTER, TENN.

Send to LITSON'S NURSERY

For prices on High Grade Nursery Stock including Apple, Crab, Apricot, Pear, Plum, Cherry, Peach, Quince, and all kinds of berry plants, Gooseberry and Grape vines. Evergreens, Roses, ornamental shrubbery and Shade Trees. **Prices low.**

W. H. LITSON
Nevada, Mo.

SURPLUS

APPLE TREES

ROOT GRAFTS

FOREST SEEDLINGS

A full line of Shade and Ornamental trees and shrubs. Write for prices.

Youngers & Co.
GENEVA, NEB.

Opalescent!

Is the New Century Apple. It's choice. Look it up. Write the introducers.

McNARY & GAINES
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How About It?

Will you plant Apple, Peach, Pear, Plum, Cherry, Grape or small fruit? If so sent list of wants for prices. One of the largest and finest assortments in the country. Prices right.—**The Wolverine Nurseries, G. E. Prater, Jr., Prop., Paw Paw, Mich.**

Cumberland

Raspberry Plants

While I do not expect to go extensively into the plant business yet, being unable to supply my numerous applicants last year, I will again offer upwards of 40,000 Cumberland. Also where it is desired in connection, a limited quantity of such reliable Strawberry plants as Splendid, Warfield, Vories, Excelsior and Johnson's Early. Address

T. H. VORIES, WATHENA, KAN.

Fruit Trees

of all kinds. Small Fruit Plants, Flowers, Shrubs, Evergreens, etc. CHEAP.

HAWKEYE NURSERIES
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TREES

Fruit and Ornamental, Shrubs, Roses, Bulbs & PLANTS

TESTED 50 YEARS.

Send for Descriptive Priced Catalog FREE
600 Acres. 13 Greenhouses. Established 1852.

PHOENIX NURSERY CO. 1285 Park St., Bloomington, Ill.

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CAMPBELL'S EARLY . The Best Grape
JOSSELYN . . . . The Best Gooseberry
FAY . . . . . The Best Currant
Small Fruits . . . . . Catalogue Free.

GEO. S. JOSSELYN, Fredonia, N. Y.

Invitations were now invited for location of next meeting.

Very earnest appeals were made by the friends of Nashville, Poteau, Waldron, Mena, Sylvan Springs and Rogers.

Rogers won, partly because of the unwritten law that meetings should be held alternately north and south of the mountains.

Afternoon Session.

Capt. Lincoln, of committee on constitution, reported, recommended that a committee of three be appointed to prepare and report revised constitution and by-laws at the next meeting. Carried. Pres. Logan was added to the committee.

A leter written to J. A. Taylor from England giving results of shipments of 100 crates of peaches to that country, was read. The peaches arrived in good condition and netted the Indian Territory shipper $1.50 per crate.

The election of officers now took place, Capt. Lincoln in the chair.

Hon. John P. Logan was unanimously re-elected president; Capt. M. F. H. Smeltzer was unanimously elected first vice president; Capt. G. T. Lincoln, second vice president; A. W. St. John, third vice president; Prof. Ernest Walker, secretary; J. W. Vestal, treasurer; W. H. H. Shibley, I. Henthorn, D. Compton, S. E. Ware, J. E. Reynolds, executive committee.

Mr. Harrison, who is connected with the U. S. Department of Agriculture, addressed the convention on "Good Roads." He invited the delegates to inspect the road being constructed near Ft. Smith. Judge Faulkner of that city gives $1 for every dollar contributed by the public. Three-fourths of a century ago Webster, Calhoun and Clay worked for good roads. Clay was successful, and Kentucky had good roads. First organize road societies, then go to the legislature and get help.

Dr. R. R. Dinwiddie's paper was on "Parasitic Fungi." It is hard to interest ourselves in something we cannot see. The souring of milk, spoiling of meat, rotting of timber, is due to bactaria. The orchardist must be something of a book farmer. A cropper can raise corn as well as his father, but he cannot raise peaches. Bacteria are the smallest living organisms, are of one cell, they swarm in the soil, in the water, in the air. Their powers of reproduction are enormous. Fungi are minute plants. One way to prevent spread of plant diseases is by increasing the robustness of trees by cultivating, pruning and spraying. The man who sprays but negiects cultivation neglects the most important part. The farmer should be a reader. He belongs to a learned profession, though he may not think so.

A. W. Poole explained his method of pruning and gave a practical demonstration of his method on some young trees. Neglect of proper pruning has caused more loss than all other causes combined. Peach trees should live 25 to 30 years. He has had 20 years' experience. It is conceded that the apple tree has to take a year to make fruit buds. He has found that by pruning the apple will bear like the peach. There was never a tree killed in Arkansas by pruning at the proper time in the right way, if one-third of the branches are left. Never dehorn a tree until after it is in bloom, or the leaves are starting out. If the bark is one-fourth off the tree it will live. He bought 16,000 trees of Col. Vincenheller one year, root pruned them and did not lose but one-tenth of one per cent. The second year he pruned three feet from the ground. He prunes his peach so that the fruit will be but four inches apart. Do not clip off the ends of the limbs, not for several years. One of the dearest lessons he ever had was when he propped the branches to keep them from breaking down from their load of fruit. Proper pruning and thinning of fruit, and no propping should be practiced.

Side branches when the trees are grown should be 18 inches apart as they hang directly over each other.

No report can do justice to Mr. Poole's lecture. One must hear him and see his demonstration to appreciate him. The delegates gave him close attention and he was voted thanks.

Thursday Morning.

Dr. Hartzog moved that the society urge the legislature to provide for the publication of the proceedings of the State Horticultural Society. It was so ordered.

Capt. Lincoln reported for the committee on legislation, recommending protection for birds; for inspection of nursery stock and of insecticides; for better freight rates, urging provisions for farmers' institutes; for new bureau of labor; memorializing congress to dispense with distribution of seeds and the using of the seed appropriation for good roads. The report was adopted.

The special committee on identity of Black Ben Davis and Gano apples reported through Col. Vincenheller.

The report stated that the Black Ben Davis originated on the Black farm in Washington county, that the committee had new testimony that had never before been used. Date of homestead entry of Alexander Black was in 1869. Patent issued November, 1874. Farm sold to W. Ely in 1877; sold to John D. Moore and sold by Moore in 1883 to Reagan. Reagan testified that when he bought the farm in 1883 there was a scrubby seedling apple near a cedar tree. Mrs. Reagan testified that after they lived on the farm four years the scrubby tree bore a few beautiful apples which attracted attention of neighbors and a few trees were grafted from scions from the tree. The tree was not in a row with other trees. Reagan is a Baptist minister.

A number of the statements were read, one from Wm. Norwood, stating there is a difference in the apples in question in shape and coloring. The committee reported that the original Black Ben Davis tree was a seedling and the variety is distinct from Gano. A motion was made to adopt the report of the committee.

Henry Wild read from Col. Vincenheller's nursery catalogue, issued after the latter retired from the office of State Commissioner, protesting against the renaming of Arkansas apples. Also from bulletin 49, also from resolution passed by Arkansas State Horticultural Society held at Bentonville, protesting against renaming and favoring the old names for apples, and said that this society had named the apple in question, Reagan's Red.

A motion by Captain Lincoln to lay report on table, to continue committee with instruction to bring apples and report to next meeting, was defeated.

Col. Vincenheller's motion to adopt report of committee was thereupon adopted.

Geo. Woolsey, chairman committee on finance stated that there was no money for printing report and urged a contribution. Numerous subscriptions of $5 to $15 were made.

It was resolved to ask the trunk railroad lines in the state to contribute $100 each; 10,000 reports should be printed and circulated at World's Fair.

Pres. Hartzog of the State University spoke on the "Horizon of Horticulture." He said in a year of adversity we hold the most interesting meeting of the society. He praised Missouri apples but thinks Arkansas apples are a little redder, a little larger and a little juicier. Missouri excels in "grafting." (Laughter.) The horizon of the orchard cannot be limited by the fence around it. The orchard has connection with the world. Our apples go to Europe. If King Edward wants good apples he orders a barrel with the Ozark brand. The market is practically unlimited. In 1790 three and a half per cent of our population lived in cities of 8,000 or more. In 1900 33 per cent lived in those cities. The marketing of the apple crop will require men of experience. He hopes much from the Ozark Fruit Growers' Association. Some mistakes may be made at first. It must be managed by business methods. He referred to the Grange movement. It did not long survive but it exerted great influence in securing railroad and other legislation. Let us attempt to imitate some of the successful business methods. This can only be done by co-operation. Now, you have made your crop; It is ready to take to the railroad; here comes the good roads question. He pictured the roads that came to us from the Indians, a road pressed by the foot of man, which grew better the more it was used. But these roads grew worse by being pressed by the foot of the mule. The roads in slavery times were mostly used for hauling cotton, but you can't transport wheat over a wagon road more than 17 miles and make any profit. Such hauling made it necessary to begin and end work in the night. Good roads will enable you to lie abed later and you can live 20 years longer. Good roads will enable us to market our stuff in bad weather; will enhance the value of real estate. He had traveled much but found a sad people. Too many go around with a dagger ready to assassinate joy. Good roads will enable us to get acquainted with each other; will help us to good schools; they cost money but save money. The hill robber takes 40 per cent of the energy of the horse, takes money from our pockets every day. And there is the mud robber!

Referring again to the Ozark Fruit Growers' Association he said: "George Washington was proud of the diploma he won for the best jackass, and because of the fact that he put up good flour. We must put up good fruits and the people will want them."

S. W. Stewart read an interesting and practical paper on "How to Grow and Prune a Peach Orchard." He showed from experience that it was not necessary to grown corn in an orchard to make trees form fruit buds, as another grower urged. He had twice as many peaches on two year old trees that were cultivated till September 15 as were grown on the orchard in corn. He had 1½ to 2 bushels per tree. Grow cow peas instead of corn. He favors thorough cultivation and growing of leguminous crops. Cultivate more in dry weather than in a wet season. Do not plow deep in an orchard. Cultivate as near trees as you can without skinning tree. Prunes but little after tree has made one year's growth except to take off ugly limbs and cross limbs. Leave 3 to 5 spokes. Don't cut off the end of limb unless it has been injured. He urged thinking to 4 inches and proved it paid to do so.

Mr. Poole said the in-pruning theory would bring no peaches after a few years.

Mr. Mendenhall said Roland Morrill,

There are a Good Many "Dust-(at)-ers" but There is But One

Jumbo Duster

Absolutely the best machine for applying insecticides and fungicides in powder form using lime dust as a conveyor.

Powerful & Convenient

May be mounted on sled or used in wagon bed. We also have many smaller styles for lighter work. Also a full line of dry powders.

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THE OZARK

DUST SPRAYERS

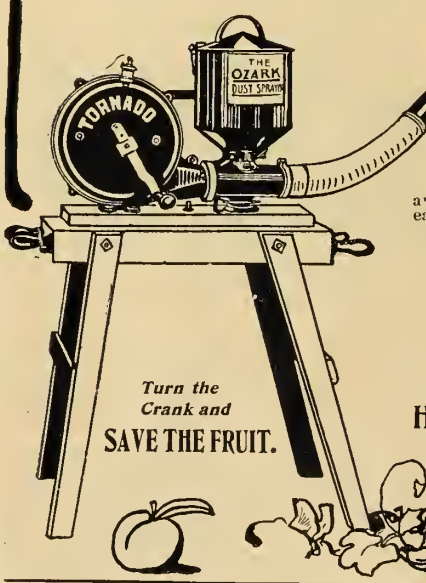
For applying Insecticides and Fungicides to Orchards and Gardens, have supplanted Liquid Sprayers wherever tested.

In Hundreds of Orchards

last year, sections on which the OZARK SPRAYERS were used showed

More than Double the Yield

Of similar sections sprayed with liquid, and the work was done easier and for **thirty-three and one-third per cent less.**



The Ozark Dust Sprayers Are made in Three Sizes

And are adapted to the smallest Garden or to the largest Commercial Orchard. They are the lightest, simplest, cheapest and most effective of all. Are easy to carry, easy to operate and do the work thoroughly.

Write for Illustrated Booklet, telling all about them. It is FREE for the asking.

Turn the Crank and

SAVE THE FRUIT.

Haldeman Manufacturing Co.,

102 Sanford Bldg., SPRINGFIELD, MO.

Do You Keep Bees?

If so, why not make the Bees keep you? The AMERICAN BEE JOURNAL tells HOW. 44th year; weekly; $1.00. Sample Copy FREE. Experts make their Bees PAY. Read, and be an expert. It's easy. Women succeed, too. "Sisters" dept. in Am. Bee Journal. "Honey as a Health-Food," 16-p. pamphlet for 2c stamp. Tells value of Honey in Cooking and as a Remedy. Address, George W. York & Co., 144 Erie St., Chicago, Ill.

100 Evergreen Trees

$3.50

From ¼ to 1 ft. high, nursery grown, transplanted—$3.50 prepaid. They include 5 of our best, hardiest varieties. We are not doing this for profit but to show you the quality of stock and get acquainted. We will give free a packet of evergreen seed with each request for catalog describing our full line "blizzard belt" nursery stock.

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TREE PROTECTORS

Will protect your treos from rabbits, mice and borers; will also protect the stoms from sun scald and can be left on during the summer, and will not injure the tree.

The cut represents our Tree Protector after having been applied.

Same are made of veneer, and aro pronounced the cheapest and easiest applied of anything ever used.

St. Louis Basket and Box Co.

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ST. LOUIS, MO.

One Million

Choice Apple and Peach Trees to offer for Fall. Also a full line of all other kinds of nursery stock. Get our prices before placing your order. We will save you money.

Tree Protectors at $5.00 Per Thousand

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Baldwin Cherry Trees

The largest, sweetest and best, is being planted from Maine to Oregon, and the supply of trees is being rapidly reduced. My Special Offer is good for only 30 days. 200,000 other fruit trees at wholesale. New descriptive catalogue free.

Baldwin, Nurseryman, Seneca, Kas

S. Benning, Huntington, Ark., sends five subscribers and says: "I would not be without one copy of the Fruit-Grower for what an entire year's subscription costs."

of Michigan, cultivated every ten days.

Mr. Poole quits cultivating August 15.

One of the very best papers of the convention was Prof. Joseph Bachman's on "Grapes, Best Varieties for Arkansas, and How to Grow them." For family use he recommends Green Mountain, Campbell's Early, Delaware, Moore's Diamond, Hicks, Fern Munson, Brilliant, Banner and Stark Star. For commercial varieties Campbell's Early, Delaware, Niagara, Moore's Diamond, Headlight and Stark Star.

Plant rows 10x10 or 10x12 feet and give thorough cultivation. Pruning and spraying is necessary for good results. He advises liquid spraying for grapes. Make grapes that do not sell at a profit on the market into wine or sterilized grape juice. Prof. Bachman has a wide reputation as a grape specialist. He has originated several very valuable varieties, the Stark Star being one of these. The Delaware he claims is the best money making grape for Arkansas.

(Prof. Bachman's vineyard at Altus, Franklin County, is a model in every respect.—Reporter.)

"How Can Arkansas Be Benefited by the World's Fair" was explained by Hon. H. T. Bradford, commissioner of Agriculture. His contrast between the pioneer and the present period of Arkansas was interestingly told and the great possibilities of the future of the state made every citizen proud of his possessions and wider awake to his possibilities. The necessity of making a grand display at St. Louis for aiding in the further populating and development of Arkansas was set forth.

"Apple Culture," by Hon. C. H. Williamson, of Quincy, Ill., was ably treated. He made a good point against too large plantings of apples. The large orchard is often not well tended. Fertilization is necessary as many of the orchard diseases are perpetuated by unfed trees. One who plants an orchard should have the capital to care for it. The importance of spraying was strongly presented. Mr. Williamson is an extensive apple grower and he is gifted as an orator.

G. T. Tippin of Missouri told of the "Expense of Marketing and the Gap Between the Grower and Consumer." He said the expense of marketing is too great. He favors a cheaper package than the barrel which has advanced 25 to 33 per cent in three or four year. As much as 50 cents was paid per barrel in New York and Michigan this season. He recommends a box that will hold half a barrel, with a partition which will make it inflexible, size of case 28½ by 13¼. Baskets with cover were largely used in Michigan the past season. Freight rates should be adjusted. We must remember the consumer; if the price of apples is high, consumption will be curtailed. At present cost of package, labor, and transportation and a reasonable price of the apples to the grower the cost to the consumer is not less than $3.15 per barrel. Mr. Tippin is investigating the matter of packages and will report.

"Improvement of Our Land, or Is It Better to Improve or Move?" was treated by J. D. Rinehardt. As might be expected of so thorough a fruit grower as Mr. Rienhardt he urged that it is our duty to improve land and not wear it out. By growing cow peas and using stable manure he said we can be steadily improving our soils.

"Relation of Railroads to Horticulture" was the subject of D. E. King's paper. The gentleman is division freight agent of the Iron Mountain railroad and he has labored unceasingly for the development of horticulture along the line of the Iron Mountain. He showed the great benefit to the railroads from fruit growing and contended that freight rates were being reduced.

Several important papers sent in by several on the program who could not attend the meeting were not read for lack of time. These will appear in the published report. The business of the convention was expedited as much as possible but there was not time enough for the whole program.

Reports were presented on exhibits, on finance and on resolutions. Thanks were voted and on motion the meeting adjourned.

Notes.

The special entertainment Wednesday night deserves unstinted praise. It was unusually good and reflected great honor upon Van Buren. L. S. Shibley presided. Every number was well rendered. The recitations, the vocal and instrumental numbers and the play captivated the crowded opera house. Indeed, too much credit cannot be given to those taking part in the complimentary entertainment.

R. J. Tallman, who recently took possession of the Collins Hotel, and his good wife, more than come up to expectations. It was quite an undertaking to serve one hundred guests at a meal but it was done, and all were satisfied with quality and quantity. Mr. Tallman is a fruit grower himself, having 6,000 peach and 1,000 cherry, plum and apple trees, also 25 acres in berries.

Capt. Smeltzer was a busy man, helping to look after the guests. His reputation as a fruit grower is known far and wide.

One feature of the convention was the number of fruit growers who had never attended a previous meeting of the society.

In another issue we will give some notes which will show that there is more horticulture in Arkansas than is generally appreciated.

G. A. ATWOOD.

Springfield, Mo.

The Grape Root Gall in New Mexico.

The grape crown or root-gall has been discovered in a few vineyards at Bernalillo and in the Mesilla Valley. The disease can be easily recognized. It produces a sort of an abnormal, sponge or wart-like growth on the plant. In the earlier stages and during the early part of the season this growth is light in color and quite watery. As the gall grows it gets darker and hardier. It is found on the roots, crown, and tops of the vines. The most common place of attack, however, is at the crown of the plant just below the surface of the soil. At the crown the galls are not only more common but more numerous and larger than at any other part. The disease does not seem to be very injurious at first and does not materially injure the plant until the galls have encircled the crown of the vine. The galls, which are practically an epidermal growth, are easily removed by hand. Such treatment, however, is only of temporary good, since the germs are not all removed. In a short time new galls appear practically in the same place as the old ones.

This disease was first reported to the Experiment Station during the past spring by Brother James, president of the St. Nicholas Academy, of Bernalillo, who discovered it on a large part of his vineyard. There is very little known about the grape root gall, especially in New Mexico, but valuable information is now being collected. Mr. G. G. Hedgecock, an expert on gall diseases of plants, of the U. S. Department of Agriculture is making a study of this grape disease. Some treatment experiments are being started in Brother James' vineyard under the direction of Mr. Hedgecock.

On an examination of a number of vineyards at Bernalillo and Mesilla Park by Mr. Hedgecock and the writer, it was found that only a few of them were infested. In every case the diseased vines in these plantations were plants of varieties bought in California. On the other hand, we were unable to find a single Mission grape vine diseased in all of the large vineyards of this grape. The chances are that the Mission grape vines have not the disease, for if it had, undoubtedly, it would have been observed by this time. Indications point very strongly that the grape root gall has been introduced from California with some of the vines bought there.

While the disease is not doing any material harm yet, except in one vineyard, about five to six acres of this vineyard are practically ruined by the disease. It is time to begin to think and plan against this trouble before it is too late. It is well to mention in this connection that since the disease is usually found below the surface it is practically incurable by any of the fungicides now in use. A root disease is always a difficult thing to treat directly by the ordinary remedies. Therefore the next best thing to do is prevention, and this is the best remedy. It can be kept out by not introducing it into our grape growing districts. This means that great care should be taken in the importation of grape vines into the territory. Most of the foreign varieties of grapes come from California and the disease is found altogether on vines brought from there. As a matter of protection to our grape growing industry it is well and proper for those who intend buying their foreign grape vines outside of the territory to look into this matter and not introduce any more diseased plants. Prevention is the best remedy.

FABIAN GARCIA.

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Eight months' time was consumed in the preparation of this work and the edition cost over $10,000. All will readily recognize the fact that we cannot afford to distribute indiscriminately and free of charge; but we want everyone really interested in fruit-growing to have a copy, hence we make the following offer:

Send us 50 cents (1 or 2 cent postage stamps accepted) and we will send you one of these handsome books, postage paid, and with it a Rebate Ticket which will permit you to return the book by mail within 60 days, in good condition, and we will return the 50 cents. Or, if you mail to us, within one year, your Rebate Ticket with your order for nursery stock amounting to $12 or more, we will credit you with $1.00 as part payment on your order, and you keep the book FREE.

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CARROLL IRON WKS. CHICAGO

Apple Trees for Cold Climate.

As the season for selecting and buying nursery stock is approaching, a few words will be appropriate on the subject of apples trees. As your paper circulates among farmers, I write my experience, believing it will lead to a betterment of the efforts put forth every spring to raise apple trees.

Farmers have planted trees so long (in sod) in vain. They often say you can't raise apples in Iowa. But they can be grown if handled properly.

Insist on a two year old tree—that is, two years from surface of ground, and should be four or five feet in height, grafted on a short piece root, with scion eight inches or more long cut from2 bearing trees; the scion should show roots emanating therefrom. Select a straight tree without limbs or as few limbs as possible, the fewer the better, as they will be all found on the first year's growth, and I think they should be on the second year's growth and I remove them and train the growth in future, so as to grow a top to suit me.

Under no circumstances would I leave a stub of limb three or four inches long; cut it off entirely. Plant tree sixteen inches deep in well cultivated and mellow soil; do not plant in sod as such soils lack moisture as a rule; give trees plenty of room to grow, they should have 900 square feet to grow in, and yet I find lots of trees planted twenty feet apart or less, giving only 400 feet; this is too close and no mistake. I find nearly all want to give the tree an extra boost and to do so they use manure in hole or under tree; this is all a mistake, as it is absolutely not needed in our fertile fields and causes death to lots of trees.

If you can procure trees true to label, get them in early spring and heel them in for two weeks and then plant in favorable weather. Keep well cultivated and mound up silghtly in fall. Wrap screen wire about tree in fall, use a piece that will reach to the limbs.

In the list of hardiest of apples for northern planting we find Duchess, Hibernal, Charlamoff, etc. We have a list that insofar as the tops are concerned are perfectly hardy but the fact I wish to urge is that when you plant a budded or common grafted tree you have one tree on top and another less hardy below the ground, as the root is a seedling and is an untested and unknown quantity below the ground.

During the winter of 1898 my neighbor and myself lost all the Duchess we had and it was due no doubt to the tender roots, and this is no unusual case here. Some times they do not fall down for a year or two after having been killed.

I also had other trees supposed to be more tender, to-wit: Amson, Swinsovka, Recumbent, Antonovka, Wolf River, Longfield, Borovinka. Winter Sport, Lead, Persian, Kaump, Bergamot, California Aport, Varonish, Rosy, and Whitney, in young trees in orchard and lost not one tree as they all stand today. Now why? Surely not because they are hardier than Duchess. My answer is that they were on their own roots. DELANO SANFORD.

Scotch Grove, Iowa.

Notes on the Hardiness of Varieties of Fruits for Cold Climates.

I wonder if here in New England there are those who take the Western Fruit-Grower and are as much interested in it as I am. If so, possibly others are trying, like myself, to raise the more tender fruits in spite of the adverse conditions here. For several years now, conditions for fruit raising have been bad. In 1902 many lost their strawberries by the frost, and last year was far worse in this respect than the preceding year.

One year ago, after a warm autumn, the thermometer dropped suddenly (in December) to about 15 degrees below zero. The peach trees had not put on their winter flannels—in other words, the sap had not really settled into the roots ready for cold weather—and the result was a solid freeze up of nearly all the new growth of branches. Such conditions as these led me to make a careful examination of both trees and plants for the purpose of finding out if some varieties stood the test fairly well where most failed. Perhaps these observations may help some one in like circumstances.

Some one of authority, possibly Mr. Crawford, one told us that it is more in the man than in the variety that makes strawberry raising a success. This is largely true, I suppose, and yet a Jersey cow is bound to give good milk in spite of herself and a grayground will run whenever he gets a chance to follow a trail, and my experience has been that a Crescent strawberry is bound to bear fruit under even adverse conditions, while other varieties like Nick Ohmer have never given me a single crop or even fourth crop of fruit; neither can I caise Crawford or Globe peaches with much success because of climatic conditions.

But to return to my peach orchard. On January 2, 1903, I made a careful examination of all the varieties and most of the trees. Apparently every fruit bud was killed and most of the previous summer's growth badly colored. On the southern slope of the hill on which the orchard is situated the trees were in as good condition as on the north side and in some cases even better.

I will quote from my note book as to the relative degree of injury done to the new wood itself of the various varieties. Carman, bad; Elberta, bad, pith dark brown; Globe, very bad; Mountain Rose seem to be bad except young trees which are fair; Old Mixon, fairly good; Champion, fairly good to good; Early York, fairly good to good; Crosby, fair; Stump, fairly good; Fitzgerald, fairly good to good; Triumph, fairly good; Late Crawford, about like Stump; Chairs Choice, not worse than many others; Greensboro, all good."

May came and a few trees blossomed in spite of the weather. Greensboro was fullest of blossoms of any variety, next were naturals, a few Carman, Old Mixon, Champian and Elberta also blossimed slightly. Many of these trees have never borne fruit.

The vital question, after all, is what varieties have lived and borne fruit well in past year, even here in bleak Massachusetts?

Of the varieties I have observed both in my own orchard and neighboring ones the following varieties, named in order of ripening, have been a success: Early Canada (very hardy), Early Rivers, Mountain Rose, Champion, Crosby, Old Mixon, Stump, and in very favorable years even Crawford and Elberta have fruited well.

As to the present winter the awful cold of about New Years, followed a long, moderately cold spell. The thermometer registered about 16 degrees below in my orchard and in many places even reach 22 degrees below zero. After a superficial examination I find the wood but slightly injured, I doubt if nearly all the fruit buds are killed, although some are. Greensboro is still at the front and some young Kalamazoo trees are bright as a dollar.

As to my strawberries I found a similar condition caused, not by the extreme winter cold, but by heavy frosts both early and late in spring. Heavy frosts utterly ruined the buds on Nic Ohmer, Brandywine were a close second, soon after they started and long before they bloomed out. A large percentage of the buds had turned brown right in the crowns almost as soon as they poked out of the ground.

Pistillate varieties, except Seaford, stood the frost finely until in full bloom and even then far better than the staminates. Haverland and Sample were best of all, the latter giving us about all the berries we had in spite of the continued frosts that caught everything in full bloom.

Up to the time of the opening of the blossoms Senator Dunlap, Pocomoke and Excelsior, all staminates, stood the frosts all right and Parson's Beauty bore some berries even though the frosts did continue.

In the year 1902 Nick Ohmer and Brandywine failed utterly by reason of frosts, while right beside them Glen Mary and Sample bore very heavily, but the frost was too much for Glen Mary last year. Hardier varieties, I believe, must be our aim if we hope to succeed. ALBERT F. TENNY.

Ipswich, Mass.

"I enclose herewith a 'block of five' subscriptions to help a fruit paper which I prize very highly. I requested four of my neighbors to subscribe, and they did so promptly. As I grow nothing but fruit they evidently thought I ought to know a good fruit paper. I wish the Fruit Grower were published more often. Each number makes me hungry for more."—J. H. Queen, R. F. D. No. 2, Topeka, Kan.

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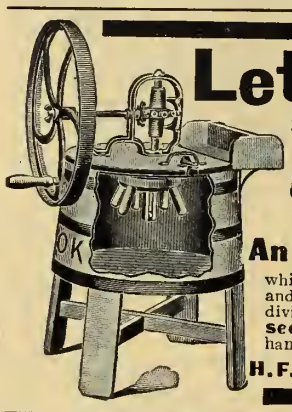

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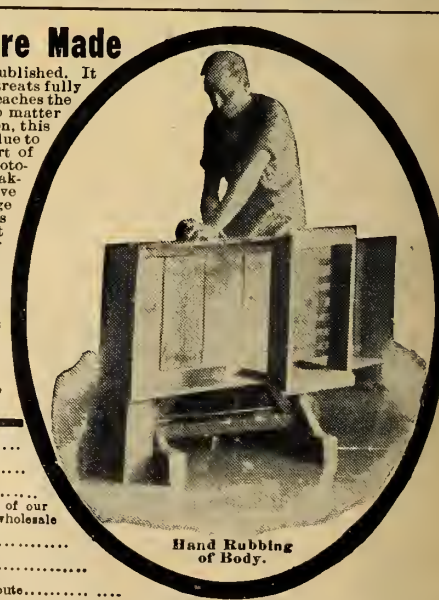

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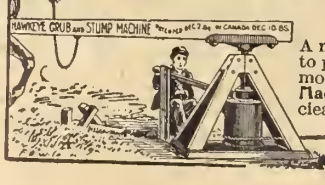

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Double Action Cutaway Harrow Used by Clark
For Large Hay Crop.

Fowls in the Orchard.

While it may not be wise to permit the hogs to have the run of the garden, the cows the clover, the colored individual the watermelon patch or wood pile, yet the chickens in the orchard are the real thing.

We have a 12 acre prune orchard and have run 500 fowls on it for the past two years, at considerable saving in expense over the old way, and material advantage to the orchard. We use the colony system, having 25 fowls in a colony, and 20 colonies. The houses which are placed about two per acre are 6x16 feet, with 2½ foot posts. Six feet is the maximum width we can use because of the limited space between tree rows. The mild winters here preclude the necessity of extremely warm quarters, which fact enables us to construct the houses very cheaply. All the material, with the exception of the building paper and nails, is found on the place. The Douglass fir, commercially known as "Oregon Pine" here, grows to perfection. It splits easily and straight.. Clap-boards are riven out ½ in. by 3 ft.; these are used for siding and roofing.

The frame is made of poles, which are peeled to promote seasoning and prevent destruction from worms. The house is lined inside with building paper, and then white washed. A partition is run in the center making a roosting room with nest boxes, and a scratching shed 6x8 ft. The scratching shed is open on one side, and the ground is covered with straw litter upon which we feed. No floors are needed.

A house so constructed is durable and at the same time light, which is important in this system. The two 16 ft. sills of the house are of grub oak with natural crook at one end; these act as runners to which the team is attached in moving the house. We move them once a week, and about one-half their length. This saves house cleaning and leaves droppings where we want them to fertilize the trees. The move results in such a slight change of location of the quarters that the fowls do not become bewildered in finding their places, and little difficulty is experienced from getting the colonies mixed and houses overcrowded.

The fowls run among the trees, enjoying the shade in warm weather, picking up bugs and insect pests, and bathing in the dust. There are two springs in the orchard which furnish water for the two colonies nearest to them, and water is carried to the others. A cover crop of vetch is sown in the orchard after the last cultivation. This furnishes an excellent supply of green food during the winter and early spring, and is clear gain, as the vetch is sowed primarily for the benefit of the orchard.

The benefits of this system of running poultry are manifold. The only objection we have experienced is in cultivating the orchard, which is done every ten days during the growing season. One has to drive around the houses in cultivating both ways. And again at harvest time, a box of fruit setting under a tree is too tempting a dish for a brown leghorn to resist, hence the fruit has to be loaded and hauled away as soon as gathered. This, however, is no drawback with us, as the drier is close by, where all the prunes are dried.

Our hens averaged us about 165 eggs each last year which sold at an average price of 17½ cents per dozen. Incubators are used for hatching and the brooder house is located outside the orchard. Cockerels are sold as friers, the demand for broilers not being very brisk here.

In summing up, I would suggest the following advantages over the usual method of poultry keeping:

1. Double use of land.
2. Saving expense of cleaning houses and hauling droppings on land.
3. Fertilizing the orchard, and subduing insect pests.
4. The trees provide shade for the fowls and at the same time shelter and harbor of refuge from the predatory hawk.
5. Cover crop of vetch furnishes green food during winter and early spring; also our trees being low headed it is impossible to cultivate close up to the tree, therefore a small square of grass is left around each tree which furnishes green stuff during summer time.
6. No expense for division fences of colonies is necessary in the yard system.

CHAS. A. WALKER.
Eugene, Oregon.

Care of Grafting Wood.

As there is much interest on the subject of top grafting of the apple or other fruit trees during the spring months, especially in this northern portion of the fruit belt, and as the condition of the scions used has much to do with the success or failure of the work, and as few comparatively know of anything of keeping scions in perfect condition, that is to say perfectly dormant, for any great length of time, except by placing in good cold storage, and unfortunately with many people, including myself, cold storage facilities are not conveniently at hand, and so for the benefit of those who would be pleased to do such grafting if they could be sure of their scions, I will give my method of keeping scion wood of whatever kind :

I am not aware who originated this plan. A good brother told me, and after testing it, I am passing it along as a good thing. Obtain a box (one in which rubber boots have been shipped to the shoe stores, is good), reasonably tight, and say about thirty inches long, fourteen in width and eighteen in depth, and without cover. Cut three or four narrow strips, exact length of inside width of box. These should be nailed in across the box equal distance from each other and the ends, and down inside two inches from the top edge all around. Now turn box bottom upwards. Close to one end saw a hole about ten inches square, also obtain a piece of board twelve inches or more square to serve as a movable cover over this hole. In a convenient spot of high, dry ground, dig a hole just large enough for this box to be pushed down into, having at the bottom for it to rest upon, a couple pieces of 2x4 placed crosswise; box should come only a few inches above the natural surface and have the earth filled up to its top around outside, as there will be a little slope downward in all directions to insure good drainage.

Put scions through the hole onto the slatted bottom which will keep them four inches above the earth bottom. Fill the box entirely if you wish so much scion wood, but with nothing else. Put trap door over hole, with a little fine earth around its edges to exclude air, then cover over all straw or hay three feet deep, in form of a long stack, or rick, and broad enough to exclude frost, also outside heat in warm weather, and where there is much rainfall there should be too board sides, separable, but leaning together when in use like a steep roof, simply to shed off rains or snow. To get at scions dig away the straw at the end over the trap hole, remove cover and your scions are at hand. After removing the straw at this end once it is afterwards very easy to pull away enough to get at the box.

Now, as to results. With absolutely no farther care the scions are in perfect condition, almost absolutely dormant for many months. As a matter of exact fact, early this winter when putting in new scion wood I threw out quite a quantity of wood which had been in a year and apparently in as perfect condition for grafting with as it was last April, and some still good that had been in two years. Am still retaining some old wood in the graft box. Peach will not keep as long as other kinds of scions, and I think it could not be kept past midsummer, much of it not that long, unless thoroughly well ripened wood.

While freely admitting that ordinary winter weather does not very seriously affect scion wood of our hardier variety of fruits here, I must still say decidedly that I prefer cutting all scions in November before the more severe freezing weather occurs, for then I feel assured that I have eliminated all elements of chance of unripened wood and minus 30 degree temperatures. Of course a few degrees of latitude further south the question of frost injury would be less significant, but another factor must then be looked after, the early starting of the sap and swelling of the buds long before time for active growth and your scion has passed beyond the proper condition necessary for the most successful growth.

FRANK O. HARRINGTON.
Williamsburg, Iowa.

Occasionally there are protests from different portions of the country against the use of money for the geological survey of the United States government. This branch of service is now at work making soil maps of different portions of the country, and is doing a most excellent work. Down in Georgia some of the gentlemen connected with this survey have recently prevented a possible epidemic of disease, in a most interesting way. At Quitman, Ga., in boring an artesian well an underground stream of water was struck. The well was cased up and the drill sent through this underground stream to a much lower depth, where another flow of water was secured. The city authorities, believing that the first water struck was a strong underground stream, desired to turn the sewage from the town into this stream, which was found to connect with an old "sink hole" near town. Now, the wells and springs of that portion of the state are very much used by the people, and at once a protest went up, for fear the sewage emptied into this underground stream would contaminate all these wells and springs. The governor was appealed to, and the geological survey was asked to make an investigation. A strong brine solution, using two tons of salt, was made and this was emptied into the "sink hole," to see whether or not the saline solution would be found in any of the wells in that section. Samples of water were taken from a great number of springs and wells, and while the water of none of the springs showed any traces of the salt, three wells in Quitman were strongly impregnated with the brine, and it was proved that to use the underground stream as a place in which to empty the sewage would have contaminated all the deep wells in that section. And of course the sewage was not disposed of in this way.

Missouri Valley Seed Co., St. Joseph, Mo., general Western distributors for Bowker's Disparene. See ad on page 18.

Missouri Valley Seed Co., St. Joseph, Mo., general Western distributors for Clark's Cutaway Harrows. See page 20.

THE DAVIS WIRE FRUIT
Tree Protector
The Best in the World. Easy to put on. Trees grow natural and never bothered by rabbits. Write for circulars. Pat. Jan. 1, 1901.
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Solicit Consignments of all Kinds of
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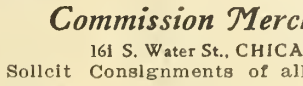

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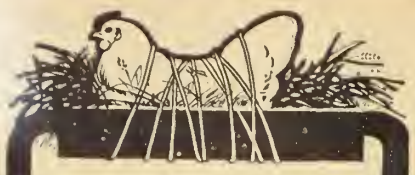

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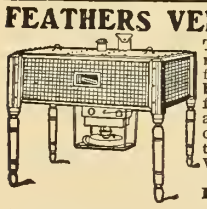

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provides automatically a constant current of odorless, warm air at a uniform temperature—chicks pip, hatch and thrive under its nature-like conditions. Send 10 cents and get our 20th annual catalog—full of poultry information.
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the perfect hatcher, sent on 80 days' trial. Absolutely automatic. Test it yourself. Big poultry and poultry supply book free.
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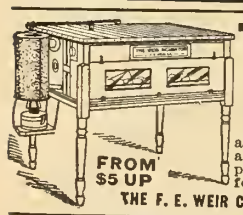

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GRANDEST FEATURE
"The removable chick tray is the grandest feature an incubator can have." Mr. Ellison, Poultry Judge, said that about the

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Poultry Gossip

Poultry Keeping for Fruit Farmers.

The article in the January issue of the Fruit-Grower on the subject of keeping poultry on a fruit farm has been well received by our readers. We believe that the article in this issue will be read with interest also. We want more articles of this kind. Tell of the advantages of keeping poultry on a fruit farm, and tell just how you handle the business. We believe no two industries are more closely allied than poultry keeping and fruit growing; we know, too, that many of our readers are successful, and we want them to tell of their plans.

Little Chicks Help to Control Insects.

A few years ago the editor of the Fruit-Grower visited the place of one of the best market gardeners in Missouri. At the time of the visit we noticed a number of chicken coops—the old-fashioned "A" coop—distributed through the field in which egg plant was growing. We asked about them, and the gardener told us that he had found from experience that the best way to keep the insects off of egg plant plants was to confine a hen in these coops and allow the young chicks to run among the plants and feed upon the insects which may be found. The chicks do no harm in any way, and the old hen cannot get out, so that the scheme works to perfection. Not every farmer grows egg plant, but are there not other insects which can be held in check by this same plan? It is worth investigating.

Warm Poultry Houses.

In one of the poultry papers a writer recently expressed the opinion that giving poultry warm, clean quarters will do more to induce the production of eggs during cold weather than any other one thing. Certainly this is the point which is too often neglected. Hens cannot lay when all their energies have to be directed toward keeping from freezing.

The West Virginia experiment station gives a timely and interesting report showing the difference in egg production where the same food and same care was given two groups of pullets. One group was warmly housed, while the other was sheltered in a cold house. There were five periods of time accorded the fowls of thirty days each. The record was as follows for eggs produced:

First Period.	
Warm house	725
Cold house	425
Second Period.	
Warm house	1,083
Cold house	866
Third Period.	
Warm house	1,150
Cold house	858
Fourth Period.	
Warm house	1,000
Cold house	1,033
Fifth Period.	
Warm house	1,281
Cold house	904

It will be seen that the hens in the warm house laid 1,103 more eggs than those in the cold house during the time allotted to this test, which should be conclusive evidence of the advantage of warmth in the production of winter eggs. It is a profitable investment as well as more humane to provide warmth for the biddies.

With windows properly prepared and a drop curtain of some kind to exclude cold on midwinter nights to cover them there will be a saving of food and a saving of sufferings with farm fowls.

The Feeding Question.

A good measurement for feeding whole grain is a quart for twelve hens.

An excess of buckwheat in the diet will produce white flesh and light colored eggs.

Cooked vegetables mixed with ground grain are excellent for a change, but if given to excess they are apt too loosen the bowels.

In feeding grain in the run outside the house, always scatted it as widely as possible, or else the bullies of the flock will crowd out the more timid ones.

Beans are highly nitrogenous, and make an excellent egg food. Milk can be fed in any condition; sweet, sour or buttermilk. In any form it is an egg producer.

Linseed meal will promote digestion, regulate the bowels, and brighten the plumage. It is however, highly nitrogenous, and very fattening, and should be judiciously fed.

Proper feeding is of more importance for good results than is the breed. The best laying variety in existence would be poor layers under indifferent treatment.

Green bone is an excellent egg producing food, but it should not be given oftener than twice a week, and then not more than an ounce for each fowl. Too heavy feeding of green bone will produce worms.

The old advice of feeding a fowl all it will eat up clean will hold good according to what you are feeding. To feed a fattening food for egg production, or an egg food for fattening, would be poor economy.

Feeding clover is a preventive of soft-shelled eggs. The morning mash in winter should be warm, hut not piping hot as one writer puts it. It should also be given in a crumbly state, never sloppy.

A good plan to feed clover hay is to cook it about an hour before feeding. If this is not easily done, it can be scalded at night and allowed to steam until morning. Of course the vessel must be covered so as to retain the steam.

Never feed broken crockery to fowls for grit. There is more or less of lead in the glaze, which is dangerous to the health of the fowls eating it. Grit can he purchased so cheaply that it is almost a waste of time to bother cracking any.

We prefer morning mashes to those fed any other time of the day, especially during the winter months. Mashes are quickly digested, and to feed them at night during winter does not impart the warmth to the body that whole grain does. We are likewise opposed to feeding mashes oftener than once a day.

The scientists tell us that corn bran has 16.45 per cent ash; 7.12 per cent protein; 50.38 per cent carbohydrates; 5 per cent fat. The starch of feeding stuffs is known as carbohydrate, the hydrate meaning water in a crystaline state. Wheat bran has 5.80 per cent ash; 15.40 per cent protein; 53.90 per cent carbohydrates; 4 per cent fat.

During the summer all mash that is not eaten should be removed, as it will quickly sour. Corn should be fed very sparingly during summer as it is entirely too heating; during winter it should be one-half ration. Never throw mash upon the ground. It not only is a waste, but it compels the fowls to mix it with filth. Always give soft food in troughs.

Don't have a feast today and a famine tomorrow. Always give about the same amount, excepting when it is noticed that the quantity given is not eaten with a relish. The feeder must in this respect govern himself according to conditions. There should be as great a variety as possible in the bill of fare. A variety tempts an appetite more than does anything else. Hens that are laying require more feed than those that are not laying. It is a waste of feed to give rye. Fowls do not like it, neither does it seem to do them much good.

This is a subject upon which men

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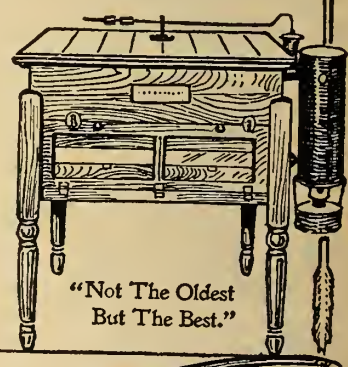

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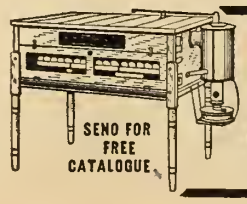

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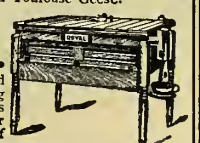
M. M. JOHNSON, Esq.,
Clay Center, Nebr.
DEAR SIR: Yes, OLD TRUSTY can be trusted. The machine has hatched for me every fertile egg. It is easily operated.
Yours truly,
T. L. NORVAL.

For Standard **Poultry** of the highest quality, write to Royal Incb. Co.

LIST OF WINNERS:
S. C. & R. C. Brown and White Leghorns, Barred, White and Buff Plymouth Rocks, Light Brahmas, Black Langshans, Pekin Ducks, Bronze Turkeys, Embden and Toulouse Geese.

Incubators and Brooders.

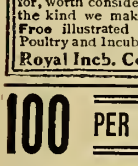


Aren't those that are good enough to try before paying for, worth considering? That's the kind we make. Send for Free illustrated catalogue of Poultry and Incubators.

Royal Incb. Co., Dept. 53 Des Moines, Iowa.

100 PER CENT HATCHES

Our new catalogue contains hundreds of them obtained by **BUCKEYE INCUBATOR** users in all parts of the U. S. Send for a copy and read the proof. It is free.
Buckeye Incubator Co., Box 47, Springfield, O.



EASY MONEY
is made by installing a **Hawkeye Incubator.** Little cost, little care, results sure, profits large. **30 Days' Free Trial.** Catalogue free. Mention this paper.—**Hawkeye Incubator Co., Box 28, Newton, Iowa.**

THIS ONE SAVES YOU 1/3

Write today for **Free Catalog and Poultry Book** describing **NEW IDEA INCUBATOR.** Most durably built, best regulator, heater, lamp tanks, etc. Complete at only two-thirds cost of other high-grade machines. Write today. Address **CHANNON, SNOW & CO. Box R Quincy, Ill**

$9,000 Poultry Catalog

40 kinds Turkeys, Geese, Ducks, Chickens, fowls and eggs cheap. 100 grand pictures, 20 house plans. We make hens lay, cure disease, etc. Send 10 cts. for mailing catalogue.

100 page Incubator Catalog free.

Incubators 30 days free trial
J. R. Brabazon Jr. & Co., Box 111 Delavan, Wis.

THE FAMOUS WEINER INCUBATOR.
The latest and most complete Incubator out. Your money back if not satisfactory. Address **D. Stutzman, Ligonier, Ind.**

$12.00 Buys a Hoosier Incubator and Brooder. No better made. Easy to run, hatches sure. Satisfaction guaranteed or your money back. Catalogue free. **Hoosier Incubator and Brooder Co., Columbia City, Ind.**

ACME FRUIT AND POULTRY FARM.
White Leghorns, extra stock, direct from famous N. Y. best laying strains. Ckls., pullets and eggs at $1.50. Hens have not been kept for winter eggs, and will lay superior eggs for hatching. Ask bank for references.
P. HOSTETTER, EAST LYNNE, MO.

Pure White Pekin Ducks
For Sale. Also eggs for hatching. Address **Mrs. A. A. Parker, 313 Parallel Street, Atchison, Kansas.**

A SAMPLE BOX OF
The Best Headache Cure
ever offered for sale for 12c postpaid.
A sample Box of the **Safest** and **Surest** Corn Cure on the market for 12 cents postpaid. Agents wanted.
BALLAGH & COMPANY
NEVADA, MISSOURI.

No More Blind Horses
For Specific Ophthalmia, Moon Blindness, and other sore eyes, BARRY CO., Iowa City, Iowa, have a sure cure.

greatly differ. We do not wish to dictate just what should be fed, but rather what should not be given. The first principle that must not be overlooked is not to overfeed and neither to underfeed. One is as bad in results as the other. Charcoal in some form or other should be given at least once a week. We further believe that a mash should be fed from January to January, and all meals should be given at regular hours. We do not believe in red pepper, or anything that is highly stimulating, and for that reason we avoid giving too much carbonaceous food.—American Poultry Journal.

Raising Small Chicks.

My experience is that chicks two weeks old are half raised, as far as mortality goes, of course, rats, minks and skunks also some of the family cats do not care whether the chicks are two weeks or four weeks old. Right here I will mention that cats sometimes are very cunning and get away with lots of little chicks before they are suspected. Yes, cats kill rats, but for poultry men one good rat dog and spade is worth a whole dobzen cats. This is my experience and that's what I am writing about.

We should not undertake to raise chicks among rats; kill the rats and as a precaution have the brooder house or coops some distance from barns, cribs and other rat harbors, and still more, the brooders and coops should be rat proof and the dog encouraged to make war on all varmints.

I am confident that not over 50 per cents of the chicks hatched out ever reach marketable age. In some instances perhaps 10 per cent escape and live and in other instances where care and watchfulness is the rule 80 to 90 per cent are raised.

A little more about rats; they often do their greatest damage in daylight, pick the chicks up in the weeds or wherever they can get them. Keeping the weeds mowed down is a precaution and especially so around the barns and cribs; eternal vigilance is the price of success in the little chick business.

The same method for minks and skunks as recommended for rats will do. A few steel traps, the trusty dog and a shot gun will discourage the hawks and crows.

Now about feed. The kind of feed is most always blamed for little chick ailments.

I think the greatest number of experienced poultry raisers will coincide with me in saying that bowel trouble and other small chick ailments are more often due to other causes than the kind of feed; overheating, overchilling, wet and cold, etc., are the vital obstructions to success. Mites and lice are blood-suckers and I will repeat it again that coops and brooder houses for small chicks should be some distance from the old vermin-breeding hen houses and other buildings.

A good feed for small chicks can be made as follows: Take 2 quarts coarse corn meal, ½ pint coarse sand (or fine broiler teeth grit), ½ pint fine cut beef scraps; mix and bake as a corn cake, only bake it twice as long or just as dry as you can, then crumble it up fine and feed it once each day. For the other feeds provide nicknacks in the way of cut wheat, cut oats, common fan or mill tailings, some millet seed and some curd cheese. Light bread soaked in milk and squeezed dry is good for them, and, regardless of the cautions we sometimes see, dampened corn meal in light doses is good. The writer can remember back to forty years ago when corn meal was a popular diet for small chicks and the mortality was not so great as now. However, the nature of the situation suggests that what small chicks naturally needs is a variety and lots of exercise in procuring it.

M. M. JOHNSON,
Clay Center, Neb.

A Profitable Market Poultry Farm.

The following article from the Des Moines Register will show the immense profit that is possible in the raising of chickens:

Sixty-five acres of good rich farm land on which nothing is raised but fruit and chickens is something a little out of the ordinary in this part of the country, but such a farm is owned and conducted by James Heath, a brother of A. C. Heath, manager of the Great Western Cereal mills at Fort Dodge.

The "chicken farm," as it might be called, is located about three miles from Des Moines, between Valley Junction and the city, and the produce from the farm is shipped into Des Moines every day to supply the people with fresh eggs and fat chickens.

The farm is well equipped with hot water houses, brooders and incubators with a capacity of 2,400 eggs, and there are no chickens raised there but the white and Barred Plymouth Rock.

In addition to the number of chickens that are kept on the farm all of the year, Mr. Heath during the last year has sold in the city over 3,000 chickens and the two months left before the new year will probably bring this amount close up to 5,000. These chickens when disposed at from nine to twelve cents a pound on the market makes the cash returns something of importance.

Eggs are gathered and sent into the city every morning and when they are being packed ready for shipment each egg is stamped with the name of the farm and the time it was gathered and shipped, thus giving the purchaser a guarantee that the egg he is buying is fresh. This one method often brings as high as five cents more on the dozen than the regular market price. People know that the eggs they are buying for their own use are fresh and nearly all of them would prefer paying the additional five cents just to be sure on this point.

Then, too, the shipments of eggs from the farm every day are something unusual. It is estimated that there are about 200 dozens of eggs gathered, stamped and shipped to the city market every day, and there are probably many people disappointed because there are never enough of them on the market, and they must eat eggs that they are not sure are fresh.

Incubation Don'ts.

Don't use oil less than 150 test.

Don't help the chick out of the shell.

Don't set the incubator near the window.

Don't fail to fill the lamps every evening.

Don't worry with moisture gauges or hygrometers.

Don't use the same wick for more than one hatch.

Don't turn nor cool the eggs after they are pipping.

Don't neglect cooling the eggs; it makes strong chicks.

Don't add eggs to the incbator after the hatch has started.

Don't turn the flame high enough to smoke or gather soot.

Don't let the bulb of the thermometer rest on an infertile egg.

Don't fail to clean out the incubator thoroughly after eaeh hatch.

Don't forget to see that the burner is kept clean and free from dirt.

Don't leave the incubator doors open while turning or cooling the eggs.

Don't fail to test repeatedly, so that you may know the size of the air-cell.

Don't trim the wick with a scissors; scrape off the charred part with a match.

Don't try to hatch duck and hen eggs in the same incubator.

Don't think you are smarter than the manufacturer of the incubator, for you have a lot yet to learn.

Don't have the large ends of the eggs pointing in different directions; have them all pointing one way.

Don't have a mixture of brown and white eggs in the incubator at the same time, as the difference in the thickness of shells makes the hatch very unsatisfactory.—M. K. Boyer, in A. P. J.

WIRE SCREEN NURSERY FLOOR

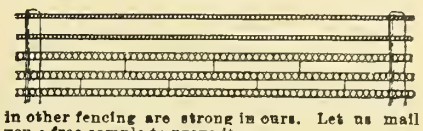
This exclusive feature of the Great Scott Incubator is of great utility. A burlap carpet is laid on this floor which is easily removed when soiled; besides, it gives the little chicks a firmer floor than burlap alone. This valuable feature is not the only one peculiar to the

Great Scott Incubator

It needs no applied moisture—is self regulating—supplies moisture and ventilation automatically—needs little attention—and gives high per cent hatches. Beginners make money with a "Great Scott" from the very first. Write for our new catalogue—it's interesting.
Scott Incubator Co., Box 95 Indianapolis, Ind.

DON'T YOU WANT
to try a better fence this year than that you bought last year? You'll find it in The PAGE.
PAGE WOVEN WIRE FENCE CO., Adrian, Michigan.

The Weakest Points

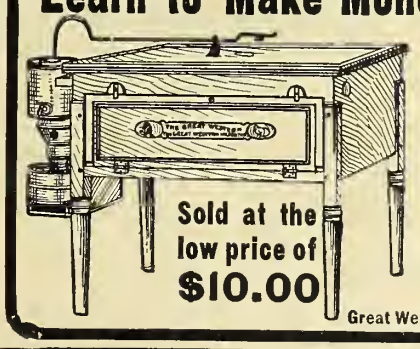


in other fencing are strong in ours. Let us mail you a free sample to prove it.
The Truss & Cable Fence Co., 618 Cuyahoga Bldg., Cleveland, O.

FENCE! STRONGEST MADE. Bull Strong, Chicken-Tight. Sold to the Farmer at Wholesale Prices. Fully Warranted. Catalog Free.
COILED SPRING FENCE CO. Box 125 Winchester, Indiana, U. S. A.

850,000 GRAPE VINES
100 Varieties. Also **Small Fruits, Trees, &c.** Best Rooted stock. Genuine, cheap. 2 sample vines mailed for 10c. Descriptive price-list free. **LEWIS ROESCH, Fredonia, N. Y.**

Learn to Make Money with an Incubator



The 1904 MODEL of our **100 EGG Great Western INCUBATORS**

Sold at the low price of $10.00

will be sent to anyone anywhere on **Forty Days Free Trial,** to demonstrate that it is the easiest to operate and most profitable machine on the market. We have spared neither material nor workmanship to make this incubator the most productive of results of any on the market. Made of first grade, thoroughly seasoned poplar, with 12 ounce cold rolled copper boiler and water pipe heating system, with perfect moisture and ventilation system, and regular metal deflector and safety lamp of the most improved pattern. Take advantage of this opportunity and send for catalog to-day of our Incubators and Brooders
Great Western Incubator Co., 915 Liberty St., Kansas City, Mo.

200-Egg Incubator For $12.80 Fully Guaranteed

The wonderful simplicity of the **Wooden Hen** and the greatly increased production forced by its immense sales, makes it possible to offer this perfect hatcher for **$12.80.** Self regulating and guaranteed to hatch as large a percentage of eggs as any other hatcher at any price. Send for the free illustrated catalogue with 14 colored views. **GEO. H. STAHL, Quincy, Ill.**

WIND BREAK **AMOUR BERBERRY HEDGE** **STOCK PROOF**

A hedge that serves many purposes — hence its great value to the farm. Grows 12 to 15 feet untrimmed. Will turn stock of any kind and break the wind well. Bears a fruit equal to currants for making jelly or wine. As an ornamental hedge it is very fine. A remarkably fast grower. Very hardy—grows well in any soil. A hedge that's a money saver to the farmer. Sample rod strong plants for 25c postpaid, just to get you acquainted with a nursery house that pleases its customers every time. **Gardner Nursery Co., Box 710 Osage, Ia.**

Horticulturists' Rule Book

A 75 Cent Value for Only 25 Cents

We have on hand at this time just fifty copies of the Special Edition of the Horticulturists' Rule Book. This is a paper-bound edition of that important work by Prof. Bailey, the cloth-bound edition of which sells for 75 cents.

Our Special Edition, while it lasts, will be mailed postpaid to **paid in advance subscribers only** at 25 cents. When you remit on subscription send 25 cents extra for the Rule Book. Remember, first come, first served. Only fifty copies left. Address
THE FRUIT-GROWER CO., ST. JOSEPH, MISSOURI.

Train Load of Manure Spreaders—40 Cars.

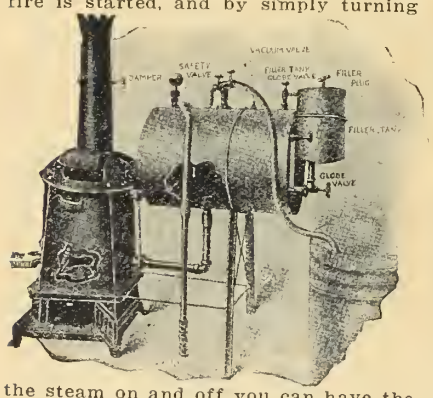
On the last day of the old year, December 31st, 1903, there was made from the city of Syracuse, N. Y., the largest individual shipment ever made from that city and the largest shipment of manure spreaders ever made in the world. It was a train load of 40 cars, 1800 feet long, of "SUCCESS" Spreaders, the new machine of the Kemp & Burpe Mfg. Co., of Syracuse. The photograph from which the above half tone was made was taken just west of Syracuse, when the train had got under way on its journey into the Great West. The train of 40 cars, containing 500 spreaders and moved by three engines, ran solid over the Lackawanna, Nickel Plate and St. Paul railroads to the Mis-

sissippi River, where it was divided, part going to the John Deere Plow Company at Omaha and the remainder to the Deere & Webber Co. at Minneapolis. The train was bannered from end to end and ran only in the day time. Great interest was manifested in the unique shipment all along the route. The value of the load was given as $55,000; the freight bill was $5,400. The Success Spreader is a distinct improvement in several particulars on the celebrated Kemp Spreader manufactured by the same company and which has become a familiar sight on farms in nearly every section of the country. The shipment marks the limit of capacity of the enlarged Kemp & Burpe factories for fifteen days. The signal appreciation of the new Success Spreader, wherever its advantages are known, is shown by the fact that another shipment of like character to other western points is to be made the latter part of this month.

Rippley's Spray Mixture Cooker and Steamer.

As the season of preparing to spray is upon us, we call the attention of our readers to the advertisement of the Rippley Hardware Co., box 217, Grafton, Ill., manufacturers of spreayers, cookers and prepared Spraying mixtures.

The Rippley people have solved the problem of cooking the lime, salt and sulphur wash, in a correct manner, by using one of their steam cookers. By the use of one of these cookers two barrels of spray mixture can be prepared at the same time with little expense and labor, as the cooking is all done by steam, no danger of burning it, as is the case where iron kettle and pan cookers are used. It only requires a few minutes to get us steam after the fire is started, and by simply turning



the steam on and off you can have the mixture prepared just as you want it. Not only are these cookers used for cooking the spray mixture, but it can be used the season through on a farm; they are used to steam feed, heat water in stock tanks at a distance of 200 to 300 feet, heat poultry and hog houses, running dairy separators, washing dairy utensils, washing clothes, heating water to scald hogs, etc. You can not invest a like amount of money to a better advantage than to purchase one of these cookers. They are constructed of boiler steel and cast iron, are fitted with guage glass and safety valve, and are very simple. They can be used outside or attached to a chimney.

This cooker is used and recommended by H. A. Surface, economic zoologist, of the Department of Agriculture, Harrisburg, Pa. It is also used at the Iowa, Wisconsin, Georgia, Virginia and New Mexico State Experiment stations, for various used, where it is highly recommended.

We advise any of our readers who are in need of a cooker to write to the above address at once for a copy of their 100 page catalogue of sprayers and cookers.

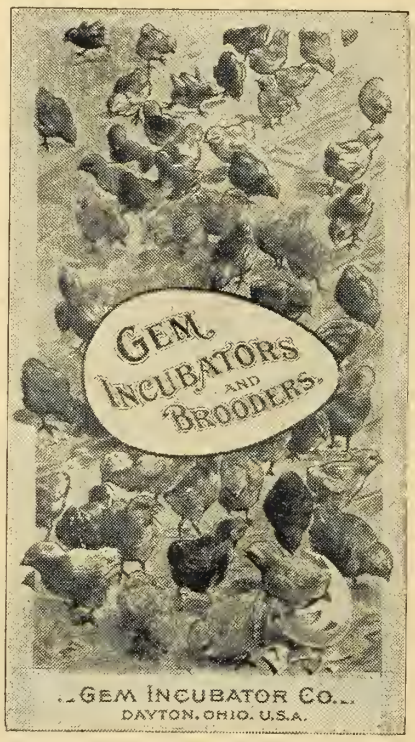
Trees and Plants.

On another page will be found the advertisement of the Phoenix Nursery Company, 1285 Park St., Bloomington, Illinois. This nursery is now in its fifty-second year of existence, and has been for over 27 years under the same proprietorship and management, and we can assure all our readers who may send to this company for trees and plants that they will be treated honorably and fairly in all dealings they may have with them. The fact that this company has been in existence so long is a guarantee that their stock has given satisfaction. During all these years they have sent out millions of trees and plants to all parts of the country. There are thousands upon thousands of orchards and gardens over the country bearing fruit from the trees and plants sent out by this company. There are also endless numbers of lawns and parks which trees from this company are beautifying today, and which speak for themselves as to the quality and class of trees and plants sent out by the Phoenix company. Please mention this paper when writing them.

The kind of garden tool you use has about everything to do with the success of the crop, as well as the pleasure people get out of the calling. The line of Planet, Jr., tools is suited to every purpose. The users all tell the same story. One of them in Iowa, C. F. Sanderson of Linn Junction, puts it in this way: "I purchased a No. 4 Drill of Hamilton Brothers. It is the best tool of the kind I ever saw. It can be used in so many different ways. You can discover a new use for it every time you use it." Don't fail to note the Planet, Jr., advertisement elsewhere.

A Beautiful Book.

The view below is a photo-reproduction of the front cover on the 1904 catalogue now being sent out free by the Gem Incubator Company, of Dayton, Ohio.



It is done in several colors, and is very beautiful, in fact it is a work of art.

The book has numerous illustrations, and tells in a most interesting way all about the Gem Incubators and Brooders which have been improved and enlarged for the coming season.

As fruit culture can be carried on most conveniently with the raising of poultry either for market or the home, we suggest that our readers send a postal card at once, mentioning Western Fruit-Grower, and they will receive one of these handsome books by return mail.

Missouri Valley Seed Co., St. Joseph, Mo., general Western distributors for Clark's Cutaway Harrows. See page 20.

Poultry for Profit.

Miller of Freeport, "The Man Who Knows," gets out a pretty good poultry book every year. He usually has something to say and says it in a terse, convincing way without flub-dubs or folderols. This year his book is better than ever before. It's a handsome thing, but it is more than handsome. There's a lot of good poultry information in it, including excellent suggestions and advice on the use of incubators, the treatment of poultry diseases, plans for poultry houses, etc.

Of course it describes Miller's famous Ideal Incubators and Brooders, as well as a full list of poultry supplies and standard bred poultry from the famous Millhook Poultry Farm.

Mr. Miller makes one of the broadest and most liberal offers we have ever seen on his incubators. He will send the Ideal to anyone anywhere on thirty days free trial. You can take off a hatch and then decide whether the Ideal is the machine you want or not. He guarantees his fowls and eggs, as well as his poultry supplies and has, perhaps, the largest list of enthusiastic, satisfied customers of any poultryman in the business.

If you raise chickens, few or many, you ought to have Miller's book "Poultry for Profit." Send 10c to cover postage and address J. W. Miller Co., Freeport, Ill.

Missouri Valley Seed Co., St. Joseph, Mo., general Western distributors for Bowker's Disparene. See ad on page 18.

Bound Volumes of the 1903 Fruit-Grower for $2.00

We can furnish only a limited number of copies of the Fruit-Grower for 1903, neatly bound in cloth, with index, complete, at $2.00 per volume, postpaid. This price merely covers the yearly subscription price of 50 cents, the remainder covering the cost of binding and mailing. Send early if you want a copy.

Unbound Volumes for 1903, 50 Cents

If you prefer to have the Fruit-Grower complete for 1903, unbound, we will send the twelve numbers, prepaid for 50 cents. We reserved just 100 copies of each edition of last year's Fruit-Grower, and we prefer to get them in circulation rather than hold them in stock. A great many copies have already been sold, so write at once if you want the year complete. Address THE FRUIT-GROWER CO., ST. JOSEPH, MISSOURI.

Are you raising alfalfa? Feeding alfalfa? Or thinking of raising alfalfa? On few other crops can you gain so much by profiting by the experience of others.

THE TWENTIETH CENTURY FARMER

tells how those who have made a study of alfalfa have met with profit and success

NORTH LOUP, Neb., Jan. 16, 1904.
Twentieth Century Farmer:—Enclosed is a dollar to renew my subscription. I need your paper. In 1886 we sowed our first alfalfa without nurse crop, getting a good stand, but it died the first winter. Then we became discouraged and quit. Through reading your paper, we learned that our methods were at fault, and started again. We now get from 4 to 6 tons of cured hay per acre. We are now following advice given in your paper on preparing soil, seeding, cutting and stacking alfalfa. We got a gain of 1½ pounds per day on Shorthorn calves fed on hay alone during the winter.
Yours very truly, M. E. McCLELLAN.

Send 25c for 3 months subscription—we will send a sample copy and handsome booklet—free—if you write for them.

Splendid prizes for getting new subscribers—Premium list free.

Address THE TWENTIETH CENTURY FARMER,
1734 Farnam St., Omaha, Neb.

Schulze Trees Fruit Where Others Fail

Result of the O. K. Whole-Root Process Pedigree Trees. We are offering a splendid line of two and three-year old stock. Will save you money by ordering direct from us. We do up-to-date packing and guarantee safe arrival.

WE PAY FREIGHT to any point in the United States. Write for Planters' Guide and Fruit Book Improved (free), showing sixteen new and rare sorts in beautiful, high-colored plates, and will teach you all about Black Ben Davis, Champion, Senator, Apple of Commerce, Delicious, Liveland Raspberry, and why we can grow same and offer for sale to the public the genuine stock. Will tell you how our stock is improved and how to plant, take care of trees. Write today and investigate us.

We still offer 25,000 Peach Trees, 40 per cent Elberta. Trees well graded and in a good storage cellar, ready for early shipping. Trees are from seven-sixteenths to three-fourths inch and up, in four grades. Get our prices on this lot before placing your order elsewhere.

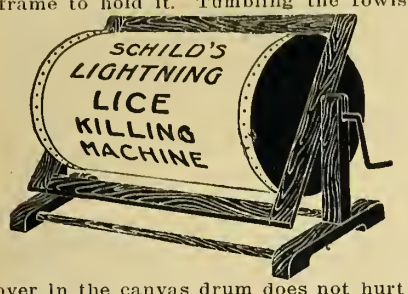
MORE SALESMEN WANTED SCHULZE BROS., Brussels, Illinois MORE SALESMEN WANTED

Fruit Growers, Send 10 Cents

and the names and addresses of 10 fruit growers to SOUTHERN FRUIT GROWER, Chattanooga, Tenn., for 6 months' subscription. Regular price, 50 cents a year; 24 pages each month. You should not be without it. Sample free if you mention Western Fruit-Grower.

Virginia has 800 barrels of apples in storage, to exhibit at St. Louis next year, says an exchange. Our 1,000 barrels of Missouri fruit doesn't look so big, after all. If Virginia has 800 barrels.

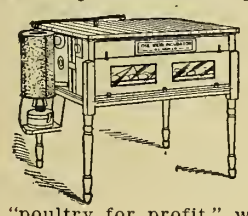
If you never saw the Lightning Lice Killing Machine you might imagine that it would be necessary to catch the lice first before undertaking to kill them. This, however, would be a mistaken conclusion. All you have to do is to put the fowls in the machine, six, eight, or ten of them at a time, according to size, sprinkle a teasponful of powder over them, turn the crank twelve times, and you will have the happiest lot of fowls in the world. The machine is simply a canvas drum, with a crank to turn it, and, of course, a frame to hold it. Tumbling the fowls



over in the canvas drum does not hurt them, but it makes a hen ruffle up every feather on her body, and that is the time when the powder gets in its work. It goes everywhere, and gets every louse. The process is so harmless that 50 or 60 little chicks can be put through at a time without injury to them. The machine which is made by Chas. Cchild, of Ionia, Mich., is endorsed by the leading poultrymen of the country, and is used on hundreds of poultry farms. Mr. Schild's new catalogue gives a volume of expert information on lice, explaining all the symptoms, and the evils of neglecting fowls. Not satisfied with his sure method of exterminating body lice, Mr. Schild supplies Lice Murder, a powder for the poultry house, to kill off the mites; as well as other poultry supplies. It's a good opportunity to learn a lot of things that everyone interested in poultry ought to know. Send for catalogue mentioning Western Fruit-Grower.

The Weir Incubator.

There is a lot of chicken talk in the catalogue of the F. E. Weir Company, Ligonier, Ind., which could only have been written by people who have lived with poultry all their lives. There is as much good nature in the book as the cackle of Biddy over her first egg of the season, but the good nature, which finds its climax in the chicken phrase "My mother was an oil stove" leads up to a lot of practical



talk on "poultry for profit," which, of course, means that you ought to have a Weir Incubator and Weir Brooder. Weir machines are moderate priced, but they are illustrated and described in a manner that indicates careful, substantial construction and good hatching qualities. It is explained that the Weir Incubator is not a "soap box on stilts," but a handsome, solid durable machine with a case of California redwood, oil finished, carefully fitted together and glued to stay, and in every respect a perfect product of painstaking workmanship. The detailed description gives some indication of the care that has been taken in designing and manufacturing the Weir machines.

We take pleasure in calling the attention of our readers to Armstrong's Iowa White Wonder Seed Corn, the longest ears of which are 15 inches in length and weighed over two pounds at picking time. This is a new variety of field corn now being introduced for the first time by the old reliable pioneer seed corn firm of J. B. Armstrong & Sons, at Shenandoah, Iowa, who claim for it, that it is the longest eared pure white corn and heaviest yielding variety known to the farmer of today. The Armstrongs write us that their field of this variety went over 100 bushels to the acre of good sound corn and that the men who husked it averaged 110 bushels per day the field through and they did not claim to be crack huskers either. The Armstrongs have issued a very complete catalogue with fully illustrates and desribes 21 of the yielding varieties of seed corn as well as other choice farm seeds, and they are very desirous of placing a free copy in the hands of every subscriber of The Western Fruit-Grower who is interested in growing pure bred seed corn. Write for one today. They send it free. Address J. B. Armstrong & Sons, Shenandoah, Iowa.

Judicious Spreading of Manure.

Probably no branch of farm work is of as much importance to the progressive farmer of today as the distribution of manure in such a way as to derive the most benefit, consequently his attention has turned to the more adequate way, that of spreading by machinery.

Several of the manufacturers of farm implements have put manure spreaders on the market in the last few years, and among these we feel that the one that has come nearest to reaching the height of perfection is the Great Western Endless Apron Spreader, advertised elsewhere. There are many strong points in favor of this machine, any one of which might serve to put it in a class by itself. Principal of these would seem to be the endless apron, which admits of reloading without the trouble of stopping to crank it back and of hauling about double the amount of manure that can be handled by a half apron machine.

The combined hood and endgate serves the dual purpose of keeping the manure from beater while loading, and acts as a hood or shield while in motion, and is changed from gate to hood by moans of the lever which throws the machine in operation, without leaving. The beater will not carry over hard chunks or bunches of manuro until they are thoroughly torn to pieces or pulverized. In fact, ovory detail for spreading all kinds of manure, lime, wood ashes, plaster, and commercial fertilizer, has reached a surprising degree of completenoss in this machine. It also spreads straw, chaff, sawdust, etc., for mulching strawberry plantations, etc.

We might say a great deal more for the spreader but feel you will get more good from the large illustrated catalogue which the Smith Manure Spreader Company will gladly mail if you ask for it. See their advertisement in another column for address.

A Fine Incubator Catalogue.

"Here's Its Name; Inside Its Fame," is the title of the new catalogue of the Iowa Incubator Company, Des Moines, Iowa, which is just out. The cover is an artistic conception—the above phrase encircling a map of the State of Iowa, printed in yellow and blue. It is a worthy piece of advertising literature for the incubator with "No cold corners," and the many friends of this famous machine will want a copy for preservation.

The Iowa Incubator has made the name of the state in which it is manufactured known all over the world. The catalogue tells about a number of per cent hatches and ought to be in the hands of every one who raises chickens. It is mailed free of charge to those who wish it.

Successful Incubators.

The improved incubators now on the market are encouraging farmers to more and more entrust the hatching of chickens to these machines. The makers of Successful Incubators and brooders, the Des Moines Incubator Company, have undoubtedly done much toward bringing the incubator up to its present popularity and efficiency. That the leading poultry raisers of the world recognize the high value of Successful incubators and brooders is shown by the steady flow of orders for the machines. The company has been compelled to enlarge its plant from time to time, until it is now one of the most complete incubator plants in the world.

A feature of the Des Moines Incubator Company worthy of note is that they are not alone manufacturers, but are in the poultry business on an extensive scale themselves. They have one of the largest and best lots of fowls of various breeds to be found anywhere. In the poultry world their establishment is known as the Royal Poultry Farm. Over 100 pens of fine fowls of all clases are included.

Catalogue of fine poultry or of incubators and brooders, or both, will be sent to those who address Des Moines Incubator Co., Dept. 553, Des Moines, Iowa.

Northern Grown Farm Seeds.

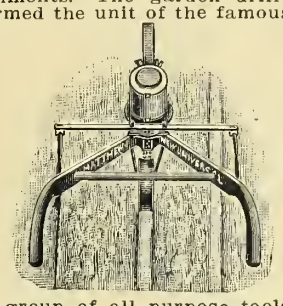
During the past ten years there has been an enourmous demand for Michigan grown farm seeds. The wonderful yields that have been secured from Hammond's selected varieties of Seed Potatoes, Oats, Corn, Japanese and other Millets, Barley, Speltz, Spring Wheat, Rape, Spring Rye, Soja Beans, Bromus Inermus, Grass and Clover Seeds are something phenomenal.

The Hammond Seed Co., Ltd., do an enormous business in Seed Potatoes, probably the largest growers and shippers in America. Their crop the past season aggregated 274 carloads which would make about eight good solid train loads. At an average planting of ten bushels per acre their seeds will plant 13,540 acres. On farm seeds another large train would be required to haul the above named seeds, to say nothing of tho tons and tons of vegetable seeds sold, such as Onions, Radish, Lettuce, Beet, Mangel, Peas, Beans, Sweet Corn, Carrot, Cabbage, etc. It is simply marvelous the reputation this house has built up on the superior quality of its seeds. And they have sold at such low prices they have drawn an immense trade from all parts of the United States and Canada. Any one wanting seeds, either vegetable, field or flowers should not fail to write to Harry N. Hammond Seed Co., Ltd., Bay City, Mich., for their handsome 100-page seed catalogue. It is mailed free for the asking.

Missouri Valley Seed Co., St. Joseph, Mo., general Western distributors for Bowker's Disparene. See ad on page 18.

New Universal Garden Tools.

By way of calling attention to the excellent line of hand garden tools manufactured by our advertising patron, the Ames Plow Company of Boston, we are producing herewith a cut of their Matthews' New Universal Seed Drill. The Seeder drops so the operator can see the seed in the ground before the action of covering and rolling attachments. The garden drill might be termed the unit of the famous Matt-



hews group of all purpose tools. The plow for furrowing and ridging is one of them. The wide and narrow tooth cultivator is still another, followed by the hoe for weed cutting and top soil stirring, and rake for pulverizing and smoothing. The Seeder may be purchased alone, or for a small amount a combination tool, combining all the above in one may be had. Wheel hoes are made for both straddle row and between row cultivation. Whatever the special need of the gardener, it is admirably met by one or another of the tools in this line. The Ames Company catalogue illustrates and describes each in detail. The company is a good one to look to for anything in the line of plows, harrows, cultivators, corn planters, hay tedders and a long line of other up-to-date implements and machinery.

Missouri Valley Seed Co., St. Joseph, Mo., general Western distributors for Clark's Cutaway Harrows. See page 20.

Missouri Pacific Railway

Best Line Between Missouri River Points and St. Louis

Five Trains

Each Way DAILY.

The Missouri Pacific lines traverse a vast section of rich, undeveloped country, presenting varied conditions of soil and climate adapted to every character of product. Booklet on Missouri, Arkansas, Louisiana, Texas, Indian Territory, Kansas and Nebraska will be furnished free on application.

H. C. TOWNSEND, St. Louis, Mo.
Gen'l Pass. and Tkt. Agt.

Grand Island Route

SHORT LINE

Between

ST. JOSEPH and KANSAS CITY

Direct line to Hiawatha, Seneca, Marysville, Kan.; Fairbury, Hastings, and Grand Island, Nebraska.

Quick Time to California and the Pacific Northwest.

C. T. HUMMER, C. P. & T. A.
S. M. ADSIT, Gen'l Pass. Agent.
BOARD OF TRADE, ST. JOSEPH, MO.

Ruptured

Send for our RADICAL CURE TRUSS *On Free Trial*

SINGLE $1.60 DOUBLE $2.00

"THE ONLY PERFECT TRUSS." Totally unlike anything made. You Pay When Satisfied. WE TAKE ALL RISK.
F. BUCHSTEIN CO., 608 R 1st Ave, S., Minneapolis.

RUPTURE CURED IN 10 DAYS By a Scientific and Never-failing Process. No knife, no pain, absolutely no danger. IN TEN DAYS THE PATIENT IS SOUND AND WELL—cured to stay cured. Write for proofs, booklet, etc., FREE.
DR. O. H. RIGGS, 205 L, Altman Bldg., Kansas City, Mo.

RUPTURE

A Permanent, Lasting and quick Cure Guaranteed. No cutting, no pain, no detention from business. No anisthetics given. **You pay Nothing Until Cured.** Call or send for our free **Book,** which tells all about Rupture, with hundreds of testimonials. Consultation and examination free.

DR. ERNEST HENDERSON, 103 West 9th Street, Kansas City, Mo.

PILES NO MONEY TILL CURED. 25 YEARS ESTABLISHED. We send FREE and postpaid a 200 page treatise on Piles, Fistula and Diseases of the Rectum; also 100 page illus. treatise on Diseases of Women. Of the thousands cured by our mild method, none paid a cent till cured—we furnish their names on application.
DRS. THORNTON & MINOR, 1023 Oak St., Kansas City, Mo.

FREE BREAKFAST, DINNER or TEA SET

$1000 PAID TO ANY PERSON WHO CAN PROVE WE DO NOT MEAN WHAT WE SAY—A chance of a lifetime. An honest proposition—No humbugging. No beating about the bush. We will give away **1000 Beautifully Decorated Breakfast, Dinner or Tea Sets.** Each set **56** pieces. Latest design **full size for family use**—to quickly introduce Carbolettes, the greatest Remedy on Earth to **regulate the Bowels, stimulate the Appetite, and beautify the Complexion.** A good set of dishes costs $20 or $30. Don't waste money. We will make you a **present** of a **complete 56** piece set, beautifully decorated in Pale Blue, Brown, Green or Pink, exactly as we claim or forfeit our money. Take advantage of this if you want to get a **handsome set of dishes absolutely free.**

This is all we ask you to do

Send us your P. O. and Express Office address and agree to sell only **12 Boxes** of Carbolettes at **25 cts.** a box. We will send them at once. They sell like hot cakes. When sold send us **only $1.50** and keep the other **$1.50** of our money **until you receive the dishes.** No two ways about us. We talk straight from the shoulder and we are bound to introduce our Remedy, no matter what it costs. When we say we will give away these magnificent **sets of dishes we will do it.** This is a great opportunity.

Remember our Dishes are beautifully decorated and are packed, boxed and shipped, Free of Charge.

ADDRESS **Manufacturers' Supply Dept. 446H 61 Park Place, N. Y. City**

100,000 Seedlings

Sugar Maple, 1 yr. at ..$2.50 per 1000
Black Walnut, 1 to 2 ft..2.50 per 100
Red Cedar, 4 to 10 in... 2.50 per 100
Red Cedar, 4 to 10 in...20.00 per 1000
Native Pine, 1 to 3 ft... 3.00 per 100

New Blackberry—MADISON.

Very large, hardy and good—dozen, 50 cts.; 100 for $2.50.

STRAWBERRIES—Varieties:
Splendid, Clyde, Sample, Warfield, Crescent, Senator Dunlap.

Native Hardy Persimmons, 15c each

Send us a list of any fruits you intend to set and see if we can't

Save You Time, Trouble and Money

TIP TOP FRUIT FARM
Box 44, Marquand, Missouri.

None Better Than the Best

Our Fruit and Shade Trees, Evergreens and Hardy Shrubs, Vines and Small Fruits, Field-Grown Roses, etc., are unexcelled. Immense stock. No agents. We sell direct. Magnificent catalogue free.

BON AYR NURSERIES
MT. SELMAN, TEXAS

Texas Trees

A hundred varieties of plums; over a hundred of peaches. Fortunes in some new Texas varieties. I have the best for the different sections of the country. Catalogue. I pay express. Steady salesmen wanted.

THE AUSTIN NURSERY
Austin, Texas

General Nursery Stock

Apple, Peach, Pear, Cherry and Plum trees, Berries, Grapes. Hardy Roses, Shrubs, Vines, Evergreens, etc. Strictly first-class. Satisfaction guaranteed. Write for prices. Agents wanted.

E. MOHLER, Plattsburg, Missouri

GRAPE VINES

Currants, Gooseberries, Blackberries, Raspberries, Strawberries. Price List FREE.

Send 2c stamp for illustrated descriptive catalog.

T. S. HUBBARD CO. Fredonia, N. Y.

A TRADE SECRET

Successful fruit and produce shippers everywhere concede that much of their success is due from constant reading of

The Kansas City Packer

It costs **$1.00** per year

Worth $50

The editor of the Fruit-Grower will tell you of the great work The Packer has done and is doing in ridding the markets of crooks and It costs $1 per year—worth $50.

"Up-to-the-Hour" hay, grain, seed and fuel shippers and dealers will find in their line the Journal of Commerce is another "winner." Have you seen a recent copy?—$1.00 per year. Exposes frauds among hay and grain men, gives ALL the news and the latest markets.

SPECIAL CLUB OFFER.

Remit $1.00 and you will receive both for one full year—104 copies, everyone a hummer. But first—send for FREE samples and see how good they are.

Barrick Publishing Co.

21 E. Missouri Ave.

KANSAS CITY, MISSOURI

BUILD YOUR OWN INCUBATOR

You can do this easily with common tools and **Save More Than Half.** Our Complete Book of Plans instructs fully. We sell you at cost all fixtures like Tank, Lamp, Regulator, etc. No Experiment. Handsome Catalog Free. CHANNON, SNOW & CO., Dept. R Quincy, Ill.

HULL'S ANTISEPTIC STICKING SALVE

The kind you bought 40 years ago. It doesn't disappoint. Sample 1ct large stick 15c. Agents wanted everywhere.

Hull's Salve Co., Augusta, N. J.

Various Strains of Wild Goose Plum.

In your report of the discussions of the Kansas Horticultural Society, on January issue, Professor Waugh and Major Holsinger disagree as to Wild Goose plum. They are both correct. I wish to tell what I know about it, for the benefit of the horticultural world, because there is a constant complaint of this plum. I am seventy-two years old. I don't know the exact year when it was brought to notice by Mr. Downer, but it was about 1856. I lived at a small town in the southwest corner of Logan County, Kentucky, Keysburg by name. Downer's nursery was at a small town west from Elkton, the county seat of Todd County, which lay west of Logan County, Fairview by name, distant from Keysburg about fifteen miles. At Keysburg lived a remarkable man in several ways, Robert F. Reeves by name, a Cumberland Presbyterian preacher. He and his wife taught a sort of high school and he had a small nursery. He knew all about the best varieties of fruit, put his knowledge to use and grew everything. I never saw up to that time such success. He was absorbed in all lines of horticulture and about that time was made president of the Kentucky State Horticultural Society. I was intimate with and I saw him constantly. He was always talking horticulture. Everybody knew both him and Mr. Downer, at least by reputation. To my certain knowledge the two gentlemen were intimate and fast friends.

Well, in one of our talks I remember distanctly, he told me that Mr. Downer told him that there was one tree he was propagating from and sending out as Wild Goose and it was far superior to any other in the vicinity. But people were coming from everywhere and digging sprouts anywhere in the grove and calling them Wild Goose.

Now, is it any wonder there are two strains in Kansas. The wonder is there is not ten when the whole grove where it was found was dug, scattered and called Wild Goose. Some years ago I tried to trap some of the spurious ones by sending back to that country for sprouts. But when they fruited they proved to be the same as what I had previously got from the old Phoenix nursery, which fruit singly or in clusters. It has never been my lot to have any of the spurious ones. But I know from people's talk there are too many scattered over the country. The reasonable remedy for its unsatisfactory behavior is careful propagation. If there can be a reform in this, I believe in a few years all will be well, when a good strain can be had I believe it will do best on its own roots. It is being carried too far north of its own latitude and is not hardy on its own roots. It can renew itself by suckering, which it does very freely.

Albany, Mo. J. W. TURNER.

Missouri Valley Seed Co., St. Joseph, Mo., general Western distributors for Bowker's Disparene. See ad on page 18.

Missouri Valley Seed Co., St. Joseph, Mo., general Western distributors for Clark's Cutaway Harrows. See page 20.

Telephones for Farmers.

In an article elsewhere in this issue entitled "Delivering Mail by Telephone," reference is made to the lines which are built by farmers. A great many of these lines are built, and many more will be built just as soon as farmers generally understand how easily a line can be constructed and put in operation. We have before us a book entitled "Telephone Facts for Farmers," which will prove very interesting along this line. It is issued by the Stromberg-Carlson Telephone Manufacturing Co., Chicago, Ill., and not only tells about the telephone appliances made by this firm, but also tells how to form a mutual telephone company, build a line, etc. This booklet will be of great assistance to anyone contemplating putting in a telephone, and will be sent free to all who ask for same. The book is certainly worth having. Address Stromberg-Carlson Telephone Manufacturing Co., Chicago, Ill., and ask for Book F-32. Mention the Western Fruit-Grower when you write.

40 Years a Seed Grower.

R. H. Shumway of Rockford, Ill., is an old time seedsman, having been in the business for upwards of forty years. He is both seed seller and seed grower. The most striking thing about his advertisement elsewhere is the remarkably low prices at which he is selling. This can only be accounted for by the fact that he grows his own seeds. The purity and freshness of Shumway's seeds are not to be distrusted because his prices are so much lower than others. In his forty years he has built up a seed buying trade that would not think of patronizing anyone else. He is satisfied with small profits from the people who are sure to become permanent customers. He can't afford to sell them anything but the best. He issues a large and beautifully illustrated catalog. Is most liberal with extra packets of new varieties. Everything is fully illustrated and accurately described. His is a catalogue you should not fail to get before placing seed orders. Mention this notice in writing him and he will send it free.

Northern Grown Nursery Stock.

The reason so much nursery stock that is set out every year dies, is because it is not sufficiently hardy. It is bought by people living farther north than the place where it is grown, and is unable to withstand the winters in its new home. For this reason one should be very careful to get northern grown stock. Mr. Geo. H. Whiting, of Yankton, S. D., has filled a long-felt want by furnishing such nursery stock, and is making a well-deserved success. Mr. Whiting is right when he says that if his trees will grow in South Dakota, they will grow anywhere in the Middle West, and the way his sales increase every year, leads us to believe that the people appreciate his efforts to give them trees and plants that will not be killed by a cold winter. He says he will send a catalogue to anyone writing for it.

A $75,000 Prize.

Some public spirited men in St. Louis, to promote interest in the great World's Fair which opens in May, have organized a contest which is open to everyone in the world, as to the number in attendance at the Fair.

A fac-simile letter from the treasurer of the Missouri Trust Co., of St. Louis, in the possession of the publisher of this paper:

"Certifies that the World's Fair Contest Company, incorporated, has this day deposited with this company, $75,000.00 in gold for the payment of the awards in its contest on a total paid attendance at the Louisiana Purchase Exposition, 1904, and that such deposit is held in trust by this company, to be paid by it to such successful contestants as the Committee of Awards may direct."

The judges and other officials of the contest are men who are high in financial and business circles, and men who are prominently connected with the Fair as officers, and also directors and officials in prominent banking institutions in St. Louis.

It is quite an interesting contest, and we suggest that any of our readers interested write to the World's Fair Contest Co., for full information, addressing your letters to St. Louis, U. S. A.

To Get Rid of Lice.

It is highly important that the poultry raiser guard against lice in his poultry houses and among his flock. Start in time, and keep them out. As a preventive, or as a remedy, nothing is better than Lee's Lice Killer, manufactured by the Geo. H. Lee Co., Omaha, Neb., which is advertised on our poultry pages. This company sends out a valuable book on poultry diseases and other troubles which afflict the poultryman, and everyone should have it. The book is entitled "A Thousand Dollar Egg and the Hen That Laid It," and will be sent free to those who mention the Western Fruit-Grower when writing.

***The* SUDDUTH PEAR**

Fruits when all other varieties fail. History and price list free. Agents wanted. **Augustine & Co., Nursery, Normal, Illinois.**

E. H. Sherman, Council Bluffs, Iowa, Agent for the sale of Sudduth Pear in Pottawatomie County, Iowa.

200,000 fine Delaware-grown Peach Trees

of the leading new and old varieties in assortment for Spring, 1904. We sell direct to planters, at very low prices.

THE DELAWARE NURSERIES
D. S. COLLINS, Mgr. ,Milford, Delaware

Pecan Trees and Nuts

Budded, grafted and seedling trees (1, 2 and 3 years old). **The G. M. Bacon Pecan Co., Inc., DeWitt, Georgia.**
Mention Western Fruit-Grower.

WANTED At Willis Nurseries
Ottawa, Kansas

Customers for the best selected lot of Nursery Stock in the West. Catalogues free on application.

Cholera Proof

Hogs, old and young, made cholera-proof for life by Ridgway's **New 1903 Method.** One cent a head; 500,000 successful tests. Will at my own expense ship and expose sow and pigs in any cholera herd in the U. S. Sold on written guarantee. $10,000.00 security. Agents wanted; circulars and book free.
Robert Ridgway, Box E, Ambey, Ind.

***The* Fruit-Grower in Blocks of Five for One Dollar**

We call special attention at this time to our Special Proposition, wherein we accept the names of five new subscribers, for the **first year only, at 20 cents each**—in blocks of five—for One Dollar.

If you will send in ten new names on this basis, with remittance of $2.00, we will advance your own subscription one year without charge.. Or you may send in four new subscribers and include your own renewal in a block of five for One Dollar.

IS YOUR NEIGHBOR A SUBSCRIBER?

If not, he certainly should be. Show him a copy of the January number and we think you will book him for a year's subscription—and think of the good you will do—you will do your friend a favor, you will favor us, you will help the cause of horticulture and help yourself—for every new subscriber we receive will enable us to give you a better paper.

WILL YOU HELP US REACH THE 50,000 MARK?

You readily can if you will. Send for a few sample copies. We are holding one thousand copies of the January number to send to the friends of our regular readers. How many will you have use for? Write at once, for they are in demand.

The Fruit-Grower Co., St. Joseph, Mo.

WRAGG TREES WE GROW AND GUARANTEE THEM

All the varieties known as "best" are from our nurseries

FULL LINE OF SHRUBS, VINES, ROSES, BULBS, ETC.

EVERGREENS, 2 and 3 year Transplanted, A SPECIALTY

Handsomely Illustrated Catalogue FREE if you mention this paper

The Old Reliable CENTRAL NURSERIES

J. WRAGG & SONS' CO., WAUKEE, IOWA

SPRAGUE CANNING MACHINERY CO.

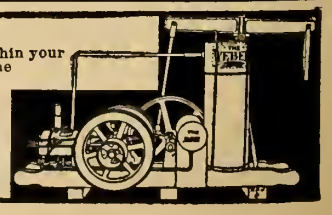
Sales Office, 802 Masonic Temple, Chicago, Illinois

THE INCONSTANT WIND

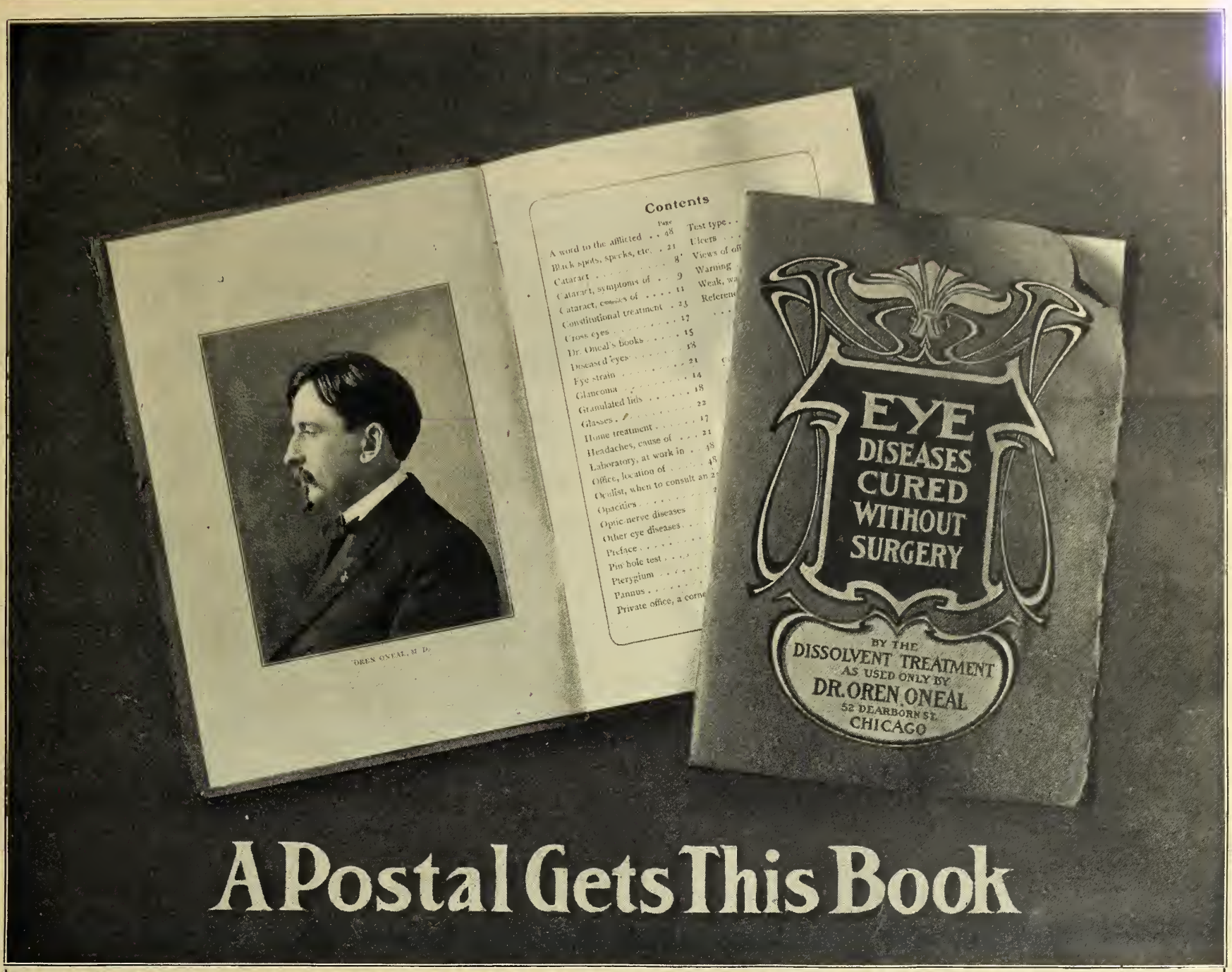
may refuse to blow when you need water most. A force that is within your control, always ready, which never goes back on you, is the

WEBER JR. PUMPING ENGINE.

A most substantial little machine of 2½ actual h. p. with walking beam, equal to every reasonable duty. Cost of running is next to nothing. A few cents worth of gasoline does the work of 30 men. Then you have the model power for any other use, as the repair shop, sawing, grinding, churning, etc. We make all kinds of engines for all purposes up to 300 h. p. Write for our free engine catalogue.



Weber Gas & Gasoline Engine Co., Box 718 Kansas City, Mo.



A Postal Gets This Book

I WANT the name and address of every person,
Man, woman and child,
In every country on the globe,
Who is troubled in any way with their eyes.
If you are not afflicted send me the names of your neighbors or friends who are.
You will be conferring a favor on them.
I will send to each name and address
My book (24th edition) illustrated above.
It contains much valuable information.
About the eyes, diet, bath, exercise, etc.;
Tells how sight can be restored to the blind
And all eye diseases cured
At patient's own home
Quickly and at small expense.
I have for more than twenty years been
Treating and curing all manner of eye troubles in all parts of the world.
Those who are afflicted in any way with their eyes are
Welcome to my opinion free of charge.
Just write me a short history of your case
As you understand it.
I will write you a personal letter of advice which with
My book will be of great value to you.

Some Symptoms of Serious Eye Troubles.

Dimness of vision
Seeing spots, specks, etc., dance before your eyes
The atmosphere seems smoky and foggy
Seeing better some days than others
Seeing better sideways than straight forward
Seeing better in the evening or early morning than at midday
Seeing objects double or multiplied
Seeing a halo or circle about a lamp light
Pain in or about the eyes
Constant or periodic headaches.
If you have any one of the above symptoms
You should seek my advice at once.
I have never made a promise which I did not fulfill
If you should at any future time require my services, and I do not fulfill every promise I make to you I will refund every cent of money you pay me.
My liberal offer may mean much to you.
Every reader of the Fruit-Grower knows that I am thoroughly responsible or my advertisements could not appear in these columns as they have regularly for years.

I have Restored Sight to Thousands

HERE are two letters which tell the invariable experience of my patients:

78 Niagara St., Buffalo, N. Y., Oct. 24, 1902.

Dr. Oren Oneal: Though my mother has only been using your treatment for three months, I take great pleasure in sending a letter expressing our gratitude for the relief you have afforded her. I have never had any faith in advertised remedies, but shall always be thankful that I made the exception in your favor and wrote you. As you know she had nearly lost the sight of the left eye, and the Cataract was half over the right. Now she can use both eyes with no difficulty whatever, reading and sewing with ease, and the relief from fear of total blindness is in itself worth many times more than the amount your treatments cost. I wish I could reach everyone suffering from cataracts and beg them to consult you at once, and have the greatest of all blessings—sight—restored to them. Hoping that you may be spared many, many years to come to carry on the good work, I remain, Gratefully yours,

Mrs. M. H. Southwick.

One Year Later.

Dear Doctor:—I enclose you herewith a few addresses of people who have written me for information regarding my mother's case. Am interested to know how many had faith enough to commence treatment. I know my lack of faith, as I classed your ad with the many one sees in magazines and newspapers, and only for its being the last chance would never have tried it. My mother's health has been poor all winter; the greater part of the time she has been unable to sit up much. The condition of the sight remains the same, and her only means of passing the time is to read, and without regard to print. This is pretty positive proof that the growths have been dissolved. I have had a number of people call on me in regard to her case, who came for friends, and all seemed to be satisfied that the facts as stated in my letter were true. I believe you understand me well enough to know that my efforts in your behalf have been solely from a desire to help others, and were prompted by gratitude. I am sending you a picture of my mother, Mrs. Rifle, being the only one we have of this style, except our paintings. Sincerely yours,

Mrs. M. H. Southwick.

THIS book will tell you
How to care for your eyes,
How to diet, bathe and exercise.
How you can cure yourself at home of
Blindness resulting from
Cataracts,
Optic Nerve Diseases,
Glaucoma,
Iritis,
Opacities, Scums, Scars and Films,
Eye Strain,
Granulated Lids and Pannus,
Pterygium, etc.
In from one to three months.
Here are the names of a few I have cured. Write them and convince yourself:

Mrs. S. C. Willard, Libertyville, Ill., cured of Cataracts of 20 years' standing; William Cronoble, Winslow, Ill., cured 10 years ago of Cataracts; Mrs. Anne E. Simmons, Hobart, N. Y., Paresis of Optic Nerve; Mrs. E. M. Cooper, Ridgeway, Minn., cured of Stenosis of Tear Duct; Mrs. Herman Burdict, Richland Center, Wis., cured of Hemorrhage of the Retina, which had blinded her; Albert J. Staley, Hynes, Los Angeles County, Cal., cured of Cataracts of 22 years' standing; rs. C. H. Sweetland, Hamburg, Iowa, cured of Paresis of Optic Nerve; Mrs. Jane Hunt, Binghamville, Vt., cured of Granulated Lids and Iritis; Miss Ella E. Heacox, Box 224, North Yakima, Wash., cured of Weak Eyes and Congested Optic Nerve; Mrs. Julia Lambert, 29 Whitney St., Nashua, N. H., cured of Cataracts; E. Laye Allison, care Bank B. N. A., St. John, N. B., Canada, cured of Congested Optic Nerve; Mrs. Emma I. Carter, Tenstrike, Minn., cured of bad case of Granulated Lids and Optic Nerve Paralysis of 22 years' standing.

Just send for the book.
Don't send any money—not even a postage stamp is necessary.
Physicians either advise the "Knife" or say "Nothing can be done" when consulted in such cases as Mrs. Rifle or the others whose names are given here.
I cure such cases in the patients' own home, easily, quickly and at small expense.
Just at present all I ask you to do is to send for the book.
It will be sent free of expense to any part of the world.
If you wish my advice
Describe your case the best you can and
I will write you a personal letter.
The book and advice are both free and may be all that is necessary to effect a cure in your case. Address

OREN ONEAL, M. D.

Suite 926, 52 Dearborn St. Chicago, U. S. A.

STARK BRO'S NURSERIES & ORCHARDS Co

Capital Stock $1,000,000.00—All Paid Up

Oldest Nurseries in the West

Established 1825

Largest Nurseries in the World

4,675 Acres

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PEAR, Standard: Leading sorts, in- cluding Fame, Alamo, Ozark, Kieffer, Lincoln (true Lincoln of Ill.), Garber, Bartlett and many others. **Dwarf:** Duchess, Anjou, Howell, Fame, Bartlett, etc.—**extra fine trees.**

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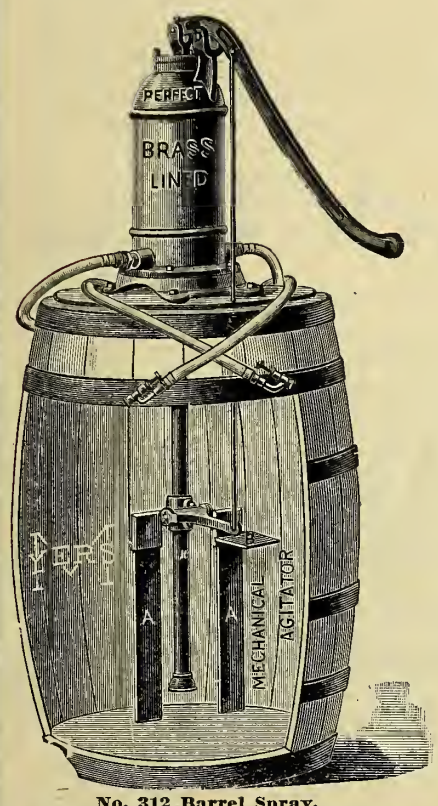

No. 312 Barrel Spray.
No. 312—Barrel Spray Pump, with Mechanical Agitator (see Fig. 655) ..

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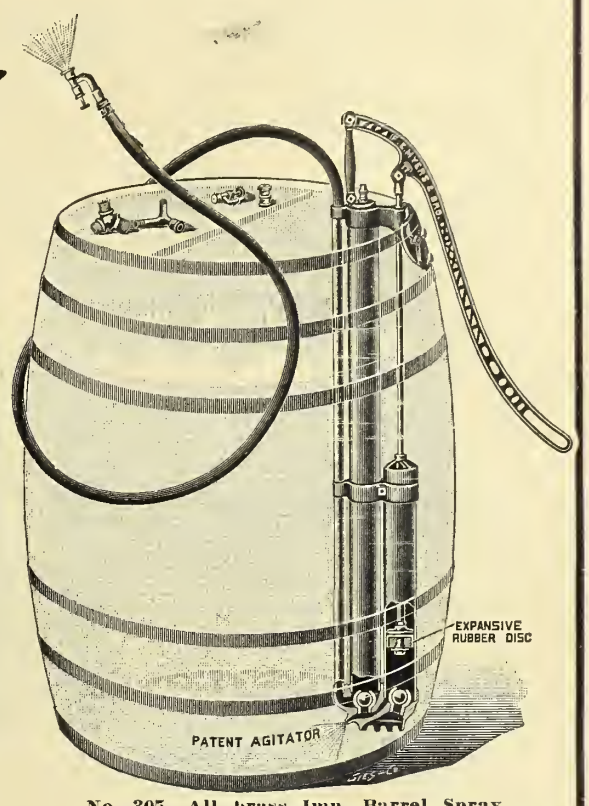

No. 305—All brass Imp. Barrel Spray Pump. (Fig. 623.)

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It Has Got to Do the Work

Your protection a **Guarantee.** You try the food—a five pound box. Use it all up. Take your time about making up your mind. If it fails to live up fully to all our claims, demand your money back. Return us nothing. You simply say, "I am not satisfied" and your money is promptly refunded, and we pay the express charges.

Our catalogue has valuable information about poultry raising and our line of poultry supplies, etc. Write us for it.

Address our New York Office, No. 1 Hudson Str.

PURITAN POULTRY FARMS & MFG. CO., Stamford, Conn.

"Black Death" To Eat Thereof Is to Die

Bug Killer and Fertilizer. Two years of unprecedented success wherever introduced all over the United States has proved **"Black Death"** to be an absolute annihilator of all insects, bugs or beetles that prey on vegetation. It positively **kills** Potato Bugs, Squash Bugs, Pumpkin Bugs, Watermelon Bugs, Rose Bugs, Currant Worms, Cabbage Worms, etc. It will kill all kinds of creeping things that eat the leaves of vegetables or plants.

What is **"Black Death?"** It is an inexpensive powder as fine as flour and extremely diffusable, and completely covers with a fine dust all plants over which it is sprinkled. In addition to being powerful in its effects to kill all insect life, it also acts as a fertilizer, thereby very materially increasing the crops of potatoes, etc., to which it is applied.

Its points of superiority over all other bug poisons may be summed up as follows:

Good Points

1st. Absolute Death to all insect life; 2d. Cheaper than any other insecticide known; 3d. A Good Fertilizer; 4th. Any Child can apply it; 5th. Not Dangerous to handle; 6th. Ready for immediate use, no mixing; 7th. Every pound of uniform strength.

"Black Death" is put up in one, three, five, ten, fifteen, twenty-five and fifty pound packages, and in 100 pound kegs and 300 pound barrels.

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We are the Agents for **Myers' Spray Pumps, Puritan Chick Food,** and **Black Death. Catalogues** and descriptive matter of all above lines **free** by applying to us. Also **Planet Jr.** and **Iron Age Garden Tools. Poultry Supplies, Oyster Shell, Grits, Bone, Blood and Meat Meal, Seed Screenings, etc. Write Now.** Address

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BERLIN, MARYLAND

Small Beginnings sometimes lay the foundations for great enterprises? It was in 1884 that J. G. Harrison bought a farm in Maryland on which was located a small peach orchard. On this the returns were scarcely more than enough to pay the fertilizer bills. In 1887 he purchased some peach seed, and employing an expert budder and his two sons, Orlando and George A. Harrison, tied in the buds of some **Two Thousand Trees, the nucleus of the Harrison Peach Orchards** of today. They were budded from bearing trees—the sure method of getting right varieties. The same three heads have continued to manage and look after the budding, cultivating, pruning and digging from year to year until now when they have budded over

Two and a Half Million Peach Trees

in a single season. The growth has been gradual and steady from the quarter acre orchard to the twelve farms of trees they are growing today. During their early struggles, and before Harrison peach trees had their present day reputation, they engaged in strawberry growing to pay interest and fertilizer bills. The demand for their plants has increased so rapidly that they are now supplying thousands of customers, requiring

60 Acres of Strawberry Plants

to be grown yearly on new ground to supply their customers. In 1895 they began growing apple trees as an experiment. But a few thousand were planted to test their soils for apple culture. The test showed that no more favorable soil or climate is to be found in America for apple tree development. This resulted in over

3 1=2 Million Apple Trees Planted Last Year

The growing of pears, begun at the same time with apples, has been attended with equal success. Two years ago cherry growing was started and our blocks now compare favorably with cherry trees grown anywhere. Keeping everlastingly at it, aided by incomparable climate and soil conditions, has kept the wheel turning and brought about fruit showings in our nurseries that are not surpassed, and scarcely approached, elsewhere in America.

All Varieties Apple Trees made good growth the past season and are in prime shape for planting. Shapely, strong, healthy, well rooted—as good as the best wherever grown.

We Grow Our Own Trees and Sell Direct to Planters at First Cost

No agents will come to you with the Harrison fruit stock. You deal direct with us and we are responsible direct to you. We invite closest investigation—personal inspection wherever possible—of this spring's stock.

A Hundred Thousand Peach Trees

budded on seedlings from natural seed, were trenched in sand in our storage house during the winter and are ready for shipment any day. Fresh, smooth, well rooted, not subjected to damage from outside exposure during the recent cold winter. Another block standing in the row in the same excellent condition. Your choice in ordering.

Kieffer Pears of our propagating are one of the most profitable fruits—the kind to plant in quantities. Sure to grow and bear and keep. Our stock cannot be surpassed.

Plum Trees grow fast and bear young—the fruit for early and abundant returns. Our stock insures your success.

Our Strawberry Showing fixes the attention of all visitors. Sixty ares on new ground. Fresh dug for every shipment. Guaranteed to grow and bear as great quantity of fruit as any grown in America.

Of all the above fruits we have all the varieties that have proved to be worthy—for general and particular localities. We also grow **Grapes, Asparagus, Shade and Forest Trees,** etc. Our general catalogue gives reliable detailed information on all. Write us for copy. It is FREE.

HARRISON'S NURSERIES, Box 32, BERLIN, MD.

The Western Fruit-Grower

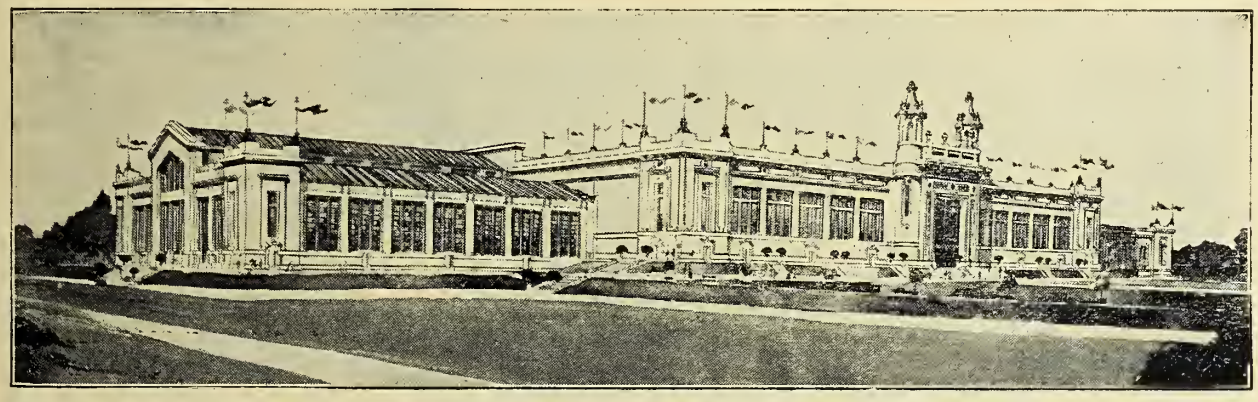
An Illustrated Monthly Magazine For Progressive American Farmers

Volume Fifteen ST. JOSEPH, MISSOURI, MARCH, 1904 Number Three

Horticulture at the St. Louis World's Fair

Herewith The Fruit-Grower presents a picture of the Horticultural Building of the St. Louis World's Fair, which has just been completed, and in which exhibits are now being installed. This is one of the buildings which will attract fruit farmers to St. Louis, and it deserves the interest of everyone.

The Horticultural Building stands on Skinker Hill, 250 feet south of the Agricultural Building. The structure is in the shape of a Greek cross with a center pavilion and two wings. The center pavilion is 400 feet square; the wings are each 204 feet by 250 feet. They are divided from the center pavilion by glass partitions and the floor of each is 9 feet lower than that of the center pavilion. This difference in elevation produces a monumental effect, which is further heightened by the use in the main entrance on the north front of two towers about 150 feet high.



The eastern wing of the building will be almost entirely of glass and will be used as a conservatory.

The west wing of the buiding will be used for general horticultural exhibits. In the basement cold storage will be provided for fruit to be exhibited in the building, and for this reason the cellar has double walls packed with sawdust. In the basement there will also be an unpacking room which will keep the shipping debris out of sight. Three sides of this wing will have galleries, two of which will be used as restaurants. Tables will be set here so that the visitor may observe the exhibits below while taking luncheon. The gallery is easily accessible by stairs from the center pavilion and from the main floor. The southern gallery will be used as offices for the working force of the Department of Horticulture.

The space between the Horticulture and Agriculture Buildings will be laid out in a highly ornate garden in which exhibiting florists and nurserymen will maintain beds.

Chief Taylor of tne Horticultural Department writes us as follows: "The Department Horticulture at the Louisiana Purchase Exposition on Washington's birthday received possession of the beautiful palace which is to be devoted to the Horticultural exhibits. Within twenty-four hours a large number of permanent allotments had been made and several permits issued to begin construction. The states participating in the pomological exhibits have made splendid provision for material which shall enable them to maintain an unbroken series of exhibits from the day of the opening until the lights go out on the last night. There are on store in St. Louis now between 20 and 25 carloads of fruits and in addition to this several states have considerable on storage in cities within their own borders. This fruit will be used not only to make a great demonstration on the opening day, but to throw in at such times during the season as the supply of fruit for any reason falls low. Thus there are often ugly gaps between the time of the appearance of various small fruits—there is also a time between the ripening of the earliest and of later peaches when practically nothing is coming in. At all of these times there will be at St. Louis material available for covering up the tables with fine exhibits. Those who had charge of exhibits in Chicago or at other expositions will understand how much this will mean to the various state superintendents. The plan worked out by the Department of Horticulture for a plate upon which to exhibit fruit which shall be used uniformly throughout the building is made with the highest approval of the various state superintendents and the plates are being manufactured now under a contract that they be delivered in ample time before the opening of the Exposition. The plate selected is what is known in the trade as a six-inch plate, although it actually measures 8-12 inches in diameter. Its outer surface is concave like a plaque instead of being the ordinary shape of an ordinary dinner plate. The color is apple green except about 4½ inches in diameter in the bottom of the plate which is left white and the edge is given a very narrow band of gilt.

In addition to the regular assignment of space to the state exhibits it is intended that there shall be maintained a number of tables in an easy accessible part of the building where shall be kept up a conparative exhibit of varieties. To this exhibit will be brought by all of the states samples of the varieties which are being put on at any particular time so that comparisons as to the form, size, color, etc., as illustrated by the fruit from the different states may be made. It is believed the pomologists and horticulturists will welcome this opportunity to study any certain variety with relation to its demands under different conditions of climate, altitude, soil, etc. The work of the department is well under way and unless some entirely unforseen conditions arise there will be an absolutely complete and perfect exhibit on the opening day.

Missouri Horticultural Society's Summer Meeting.

In connection with the foregoing article in regard to the fruit exhibit to be made at the World's Fair, attention is called to the following letter from Secretary Goodman of the Missouri Horticultural Society which states that the society will hold its summer meeting on the World's Fair grounds in St. Louis, on June 7, 8, 9 and 10. Secretary Goodman says:

"The meetings will be held in the Missouri Buiding, in the forenoons of each day, thus giving time for seeing the fair in the afternoon.

The program will take up small fruits and market gardens on the first forenon; apple orchards on tne second forenon; stone fruits on the third forenoon; vineyards on the fourth forenoon. Some prominent man from outside of the state will give an address on the topic under discussion each day. A number of papers by our best fruit-growers will be given and a general discussion will be had on each subject. A grand strawberry show will be one of the features and $150 will be offered under our usual rules; on twelve special varieties; largest; best commercial seedling; new variety; firmest; five commercial; five family; ten varieties, crate arriving in best condition.

"The executive committee of the society visited the Horticultural Building and Missouri's space in that building, where they found the work of installation begun and well under way. A carload of the glass jars was in the building and were being examined, getting them ready for installation, the first in the building. The extent of the exhibit and the position Missouri occupies brings out more and more the necessity of earnest and combined work in helping to make a grand exhibit of all our fruits next summer as they ripen. The executive committee are in favor, more and more as the time approaches for the opening of the exposition, of making a grand display, the best that we have ever made and they now call upon every fruit-grower of the stae to do his full duty this year, in keeping up this great fruit display.

Prospects for Fruit.

Reports from various parts of the Mississippi Valley indicate that peach buds have not been as badly injured as was at first thought to be the case. In Missouri it is said there will be a full half crop, if nothing happens to prevent, the bulk of the crop being in the southern part of the state, where the larger orchards are located. In Nebraska and Iowa, it is said, there are a great many live peach buds, particularly in Western Nebraska.

All other fruits promise unusually well, except perhaps that raspberries have been slightly winter-killed in some places. Strawberries are in most excellent condition, except where they were injured by dry weather last fall. Other small fruits promise well—better than for a long time.

As to the apple outlook, it is most excellent in the Middle West, but not so good in the East, where the crop was heavy last season. One danger which is feared by some is that the apple scab, which was so prevalent last season, may appear this spring and materially shorten the crop, and for that reason there is more interest in the subject of spraying than there has been at any time for many years.

On the whole, thet fruit farmer in the Middle West has every reason to be encouraged at this time, and should strive to save his crop by spraying and by every other means possible. Next month the Fruit-Grower will have full reports from all over the country as to the condition of fruit buds. If your section has not been represented in these reports in recent years, send us a postal card giving report of conditions.

"Don't stop the Fruit-Grower. Can't spare it, for our home would be lonesome without it."—M. Johnson, West Fork, Ark.

C. B. Green, Sedalia, Mo., says budded peaches are about all dead there.

HAMMOND'S SLUG-SHOT — I SLAY BUGS — KILLS INSECTS SAVES FOLIAGE — 1880

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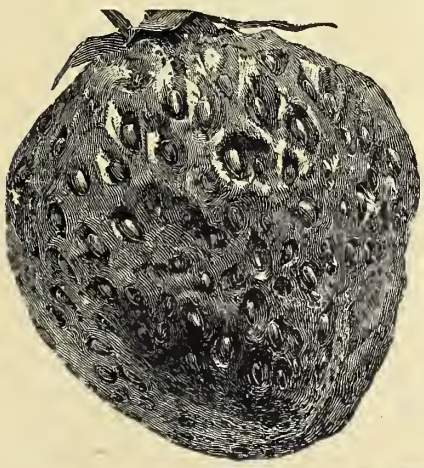

IF YOU WANT THE BEST EARLY STRAWBERRY

You must plant them. Thompson's Earliest is the best. If you want the two very best Strawberries ever introduced, plant Thompson's No. 2 and Mark Hanna. This illustration is one of my new Seedling Strawberries which I have named Thompson's No. 2, originated by me four years ago. I claim it is the most perfect Strawberry yet introduced; that it is without a fault for either the amateur or commercial grower. Its great points are larger size; beautiful color; the appearance of being varnished; large double calax like Gandy; immensely productive, the ground being literally covered. Owing to the enormous crop of berries, its season is 4 to 5 weeks. Very richest and best quality, best of shipper, has a very touch skin, not easily broken by handling. It retains its beautiful dark green healthy foliage all through the season; not a spot of rust with a perfect blossom, it, with my Mark Hanna, are no doubt the two most wonderful berries in cultivation.

Send for my wholesale price list.

MARK T. THOMPSON, Rio Vista, Virginia

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State your wants when writing and get the very lowest prices. Everything guaranteed. Strongest references. Payment extended on large orders.

NORRIS CITY, ILLINOIS

HAVE YOU RENEWED?

The past month has been a record breaker in the subscription department of the Fruit-Grower. We have received more new subscribers and more renewals within the past month than for any month in the history of the company and the majority of old subscribers send "blocks of five" with renewals. **SEND A DOLLAR** to cover your renewal and subscriptions of four of your neighbors for one year. Delinquent notices will be mailed to all subscribers who are in arrears, April 15th, and if you will remit before that date you will save considerable trouble for us in our subscription department.

THE FRUIT-GROWER CO., ST. JOSEPH, MISSOURI

Hardy Roses for the Home

The earliest suggestion of spring breezes and balmy days naturally brings forth that latent desire which is present in the hearts of all men to "go forth and till the soil."

The desire to beautify the home is growing more and more pronounced each year, and the cost is so small for the results attained. The first question which occurs to the thoughtful man desirous of beautifying his home is, "how and what shall I plant?" To most people the answer to this would be, "the rose, of course." And, yet, to many, the cultivation of the rose is beset with difficulties because of the mistaken idea that it is difficult to grow but I maintain that given a proper selection of varieties and sound, common sense in cultivation and better results can be obtained from the rose than any other plant. The impression seems to generally prevail that a certain kind of soil is absolutely necessary for sucess; that it must be heavy; that it must be adhesive and very rich. This idea is long since exploded. The writer has seen as grand roses grown in the light, black, sandy soil of Illinois as ever grew in the mica-laden loam of Pennsylvania. Where, however the soil available is poor and worn out from long service, it is wise to fill in the future rose bed with strong, new soil, composted with well rotted cow manure.

But to the intending rose grower another and most important point arises and that is what kind and varieties shall I plant? For we all know the rose is divided into many families and long years of cultivation and hybridization have multiplied these until their name is legion. In this article we will treat only of those which are hardy and succeed best in this section of the country, for it must be remembered that a hardy rose which stands with impunity the rigors of a New England winter is not necessarily at home in the West. Our winters may not be so severe, it is true, but our summers are hotter and dryer and this is where the mischief is done. Then, again, while our winters are not so steady and prolonged, we are subject to occasional thaws and periods of spring-like weather in the midst of winter. This excites the sap and the cold freeze which inevitably follows is death to the rose unless carefully covered and protected.

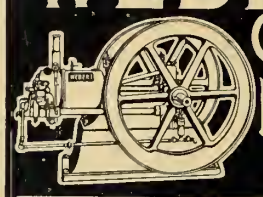
Among hardy roses, for of such only we shall deal in this article, the Hybrid Perpetuals are the best known, and most sought after. The name "Perpetual," however, in this case is a misnomer. It does not, as we would naturally suppose, refer to the blooming properties of this particular class, but to certain characteristics of growth and habit, which have been fixed by hybridization. For it is a well known fact that many of the varieties belonging to this class are anything but perpetual bloomers. Very often one crop of flowers in June and a few stragglers in late fall are all the anxious grower gets for his trouble. An instance of this is Mad. Plantier, one of the finest white roses grown, but only in June does she vouchsafe to show her beauty. But there are a few varieties which are exceptions and these are the ones the amateur should plant if he desires a continuity of bloom. In whites we find Coquette des Blanches and Perfection des Blanches, both pure white, and, while not perhaps so large as some of the dark varieties, they are wonderfully free and beautiful. Mad. Chas. Wood and Dinsmore roses, almost identical of a brilliant red, are both as free and perpetual as tea roses. Then we have Mad. Masson, reddish crimson; Magna Charta, bright, clear pink; Francois Levit, rose color; Paul Neyron, one of the largest and most prolific; and among the darker varieties may be mentioned Fisher Holmes, Baron Bonstettin and Prince Camille de Rohan. This latter is probably the darkest and richest rose grown. All these mentioned are perpetual bloomers and no one can make a mistake in planting them. It seems like sacrilege to ignore our old friend, General Jack, in this last, but truth compels us to say that the General is a very erratic individual and anything but a perpetual bloomer. This is a pity, for nothing richer in shade is found in the rose family than the bloom of General Jack. It may be here mentioned that there does not exist a good yellow Hybrid Perpetual. Some years ago Gloire Lyonnaise was sent out as a Yellow Hybrid, but it is very litle more than a dirty white.

There is also another class of roses upon which the intending planter can draw upon with almost certain chances of success. This is the class commonly known as Hybrid Teas. Many of the varieties in this class are of recent introduction, but all are valuable and the majority hardy as the name implies. They are the result of a cross between the tender Teas and Hybrid Perpetuals. They inherit the good qualities of both parents, in fact many of them surpass either in beauty and size of flower. Prominent in this family will be found the well known La France, and who does not love a La France? The brightest of satin pink, with a silver reverse to the petals and a fragrance unsurpassed have made this rose a household word wherever roses are known and grown. Either as a bud or as a fully expanded flower it is still beautiful and the lasting properties of the La France are great; there is no rose that retains its freshness so long after cutting. We have also the white and red La France, the latter known as the Duchess of Albany, both counterparts of the original, except color. To this class also belongs Kaiserin Augusta, the grandest of all whites, also the American Beauty, which every one knows and admires. Hermosa and Mad. Schwaller are two well known pinks in this class, also Burbank, a recent California introduction of great merit. Champion of the world and the old-fashioned Appoline are also desirable varieties in this class of strong growth and never failing bloom. Among yellows, always a scarce color, we have Etoile de Lyon, almost identical with Perle des Jardins. This list would not be complete without mention of Helen Gould, named for the American Florence Nightingale. The color of this rose is a glowing carmine, with buds as long and pointed and sweet as General Jack, and in addition it is a perpetual bloomer in the literal sense of the word and withal perfectly hardy. We must not forget either Grumerin Treplitz, "the red Hermosa," as it is often called. This rose is of German origin and is a credit to the raisers. The flowers are of a most vivid scarlet and produced during the entire summer in extraordinary profusion. The young growth is of a deep rich bronze and the contrast between the flowers and foliage is striking.

There is still another class of hardy roses, which should not be overlooked and that is the Polyanthas,. The bushes of this family are dwarfer than those of other class and the flowers smaller, but are produced in never ending supply. Mad. Clotilde Soupert is the best known variety in this class and no rose is more valuable. As a bloomer it is without a rival and while the flowers are not large, they are of a most pleasing shade of pink and deliciously fragrant. There are also the yellow and white varieties of the same name equally desirable. These roses are particularly useful for cemetery planting because of their great hardiness and freedom of bloom.

Another class of roses to which the amateur naturally turns in his search for the ornamental is the climbing section. And these are most beautiful objects trained on trellis or porch. Strictly speaking there is no such thing as a climbing rose, because a plant to climb must have tendrils to adhere and these of course a rose does not possess. But as climbing roses they are known and will continue to be so called. The best known and most desirable of these is the Crimson Rambler. It is only a few years since this rose was introduced and the popularity

WEBER GASOLINE ENGINES



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MEAD is a perfect-flowering variety.
MEAD is as perfect in form as Clyde.
MEAD is of highest quality.
MEAD is of rich, glossy red on outside and has red flesh all the way through.
MEAD is a great cropper, ranking with Clyde, Sample and Glen Mary.
MEAD is a good shipper, like the Gandy.
MEAD will thrive on light land, as on any other.
MEAD has no small berries—all the late formed ones come up to good size.

Is not Mead the Strawberry you have long been looking for. I certainly think so!

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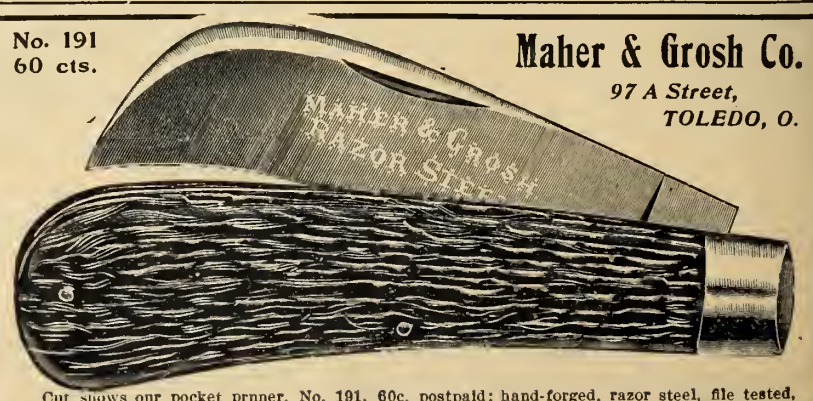

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43 varieties at $1.00 per thousand and up. Price list free. **R. E. ALLEN, Paw Paw, Mich.**

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They cut with ease parts several times larger than can he cut with any other kind. Every user of pruning shears huys them at sight. Yon can easily make $5.00 a day. Cost nothing to try. Send for particulars at once, and go to work.
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it has attained is wonderful. And it deserves it too, for a more beautiful object than a plant of this rose in full bloom would be difficult to imagine. Of a dazzling crimson, entirely different from any other rose, it forms a striking object. There are also pink, white and yellow Ramblers, so called, but they are not nearly so meritorious as the crimson. Unfortunately the roses are not perpetual bloomers—nor, for that matter, are any of the hardy climbers. The old well-known Prairie Queen is grand, too, but one crop of flowers is all she gives us in a season; but they are beautiful and fragrant. Baltimore Belle is another well-known climber, of rapid growth, with flowers of blush white. Martha Washington or Washington Cluster, comes very near being an ever-blooming, but the flowers are small and lacking in substance. Climbing Meteor and Climbing Wootton are two grand reds, but alas! they are not hardy here, except in particularly sheltered positions. Most useful in a way are the memorial or evergreen roses, a branch of the climber family. For covering rock work or old walls or unsightly mounds they are invaluable. They creep along the ground rooting at the joints like ivy and often branches from 15 to 20 feet are formed in a single season. Many of them retain their foliage throughout the winter. The flowers of this class, while not large or double, are pleasing and fragrant, somewhat resembling the wild rose in form and color. They flourish in the poorest of soils and no winter is too severe to injure them. They are especially valuable for cemetery planting.

As stated in the beginning of this article, the soil necessary to grow good roses is not nearly so important as we are led to suppose. The natural soil of the west will grow good roses providing it is properly prepared. And this preparation consists of thoroughly spading and pulverizing it. If this is done in the fall the frosts of winter will mellow the soil and help it greatly. If the soil has been used before and needs a fertilizer, well-rotted cow manure is the best to apply. This should be well mixed with the soil before planting. When to plant is another point. Spring, say I; many advocate fall planting, but I never could see any advantage in it. As early in the spring as the soil is fit to work. Of the plants to put out, strong two-year-old field-grown plants are the best. Plant them two feet apart each way and be sure to make the soil firm round the roots. Budded or grafted plants are being advocated by some writers, but I would not recommend them. They are short-lived and the suckers are a never-ending nuisance.

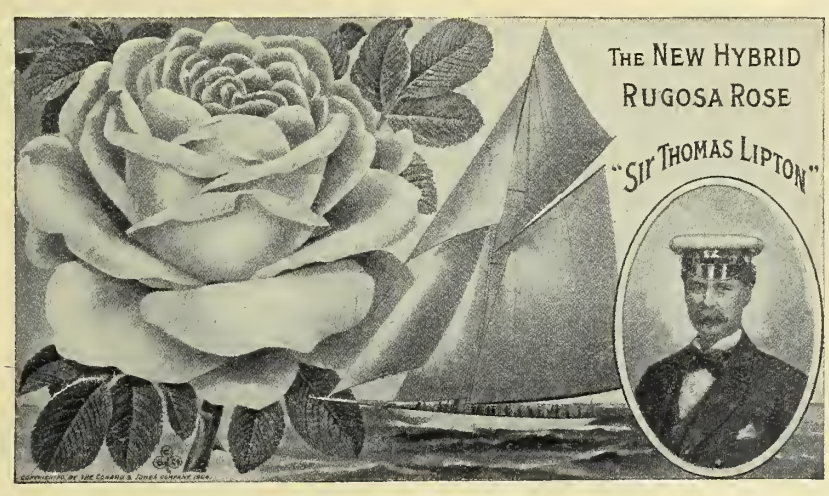
With regard to protection, all hardy roses do not require it, but they are the better for it. Dont cover up too soon in the fall and don't uncover too early in the spring. Litter of leaves make the best covering and should be put on to a depth of 18 inches. This will leave the tops of the plants exposed, but it is far better than the practice of tying up the plants in bundles of straw. Many roses are killed by being smothered with over protection. When the covering is removed in the spring the dead points should be cut back and some of the weaker shoots removed. The surface of the soil should be then stirred to a depth of two or three inches and a light scattering of manure worked in. During the hot summer months a light mulching of litter or the grass clippings from the lawn can be spread over the surface with advantage. And don't make the mistake of deluging your roses with water on every possible occasion. Except in period of protracted drought they will not require watering. Indeed it is a question whether surface watering is ever beneficial. Sub-irrigation is the only proper method of applying water and, where the beds are not arranged for this, it is as well to leave the watering to nature.

In conclusion I may say that with a selected list of hardy varieties such as I have described, and the use of common sense, there is no reason why the most inexperienced amateur cannot grow good hardy roses. And of all classes of plants there are none so beautiful and fascinating as the "Queen of Flowers."

GEORGE P. DORAN.
St. Joseph, Mo.

New Hardy Hybrid Rugosa Rose—Sir Thomas Lipton.

This rose which was originated by the Conard & Jones Co., rose growers of West Grove, Pa., has been on trial for several years, and they recommend it as the finest pure white hybrid Rugosa rose yet produced. It is a strong, vigorous grower, makes a handsome bush 4 to 5 feet high, with particularly fine glossy green leaves, which shine as if varnished and have the regular Rugosa habit, as shown in illustration herewith. Flowers are very large, perfectly double and borne in great profusion on strong upright stems all through the growing season. This rose is particularly valuable for the reason that it is one of the hardiest roses in existence, and has been known to stand a temperature far below zero. It will be found especially suitable for yard, park and cemetery planting, as it has the additional quality of remaining free from insects, rust and other diseases.



The Cumberland Raspberry.

G. W. Winchell, Tobinsport, Ind., writes to inquire concerning the Cumberland raspberry. He says he ordered 250 plants, and when they fruited he could see no difference between them and the Kansas. The nurseryman who originally sold the plants was appealed to, but declined to do anything in the matter, intimating that Mr. Winchell did not know what he was talking about. Mr. Winchell adds:

"I don't claim to know everything, but I do know this raspberry is not like the Cumberland of my neighborhood. I would like to see a description of the Cumberland."

Well, if the raspberry is no larger than the Kansas, it is not the Cumberland that has been sold throughout the West, for the latter is considerably larger than Kansas. The Cumberland is a true blackcap of large size; plant is healthy and hardy and a strong, thrifty grower. Fruit ripens a litle later than Kansas, is firm enough to ship well, and is of good quality. The Cumberland is decidedly larger than Kansas, and we suspect that Mr. Winchell is correct in his surmise that his is not the true Cumberland.

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108 Varieties.
Including all the choicest American and European sorts described in our large 136 page catalogue. We are the largest growers in the West. Our plants are strong and vigorous and our prices are right. As an introductory offer we will furnish

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all desirable sorts and all different, delivered to you, **charges prepaid.** We have also large two year old dormant roses, tree roses, choice house and bedding plants, floral novelties, etc. 24 large greenhouses—20 acres in flowers. Catalogue free if you mention this paper.
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Will Grow and Bloom. No Cheap Cuttings.
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100 Varieties of Cannas
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FLOWERS PLANTS
My list will tell you how to grow greatest quantity for the least money. Address, **T. MONTGOMERY, Larned, Kan.**

Strawberries
300,000 Excelsior, $1.25 per 1000; 200,000 Lady Thompson, $1,30 per 1000, and a large stock of other varieties. Plants are fine. Refer to State Bank or any business house in the city as to my honesty.
Send Today for Price List
J. A. Bauer, Judsonia, Ark.

Concord Grape Vines
$1.50 Per Hundred
Rhubarb and Gooseberry plants, 50c doz
Early Harvest Blackberry, 75c per 100
Lucretia Dewberry .....80c per 100
Kansas Raspberry .....$1.00 per 100
Strawberry plants, 40c per 100 or $2.50 per 1,000.
J. C. BANTA, Topeka, Kansas

Here are the best things advertised in this issue: Spray pumps, on page 2; Disparene, on page 7; dust sprayers, on page 28; seeds, on pages 11 and 15. Missouri Valley Seed Co., headquarters, St. Joseph, Mo.

A Short Talk on Spraying.

This is the season of the year when everyone who is interested in fruit-growing is thinking about spraying. The beginner wants to know whether he should spray at all; the more experienced person is anxious to know about the best machinery; while the old fruit-grower is chiefly concerned with knowing about the latest improvements in machinery and methods of applying different mixtures, as well as the latest materials themselves. Without trying to answer all of these inquiries, it will be in order to speak of a few things that all must know and observe if they are to meet with success in their work. The first is the matter of thoroughness. In the preparation of materials, if we expect to derive the benefits they are supposed to give, we must be as careful in what we use and how the different ingredients are mixed as a physician or druggist is in compounding his medicines. If we use the wrong thing for a particular purpose we cannot expect to derive satisfactory results. A common mistake is to use some kind of poison for fungous diseases like the rots, scab, rusts, cankers, etc. Such a proceeding is worse than useless. The same is equally true when the fungicides like bluestone, copperas or sulphur are used to kill insects. If we remember these things, much disappointment will be avoided.

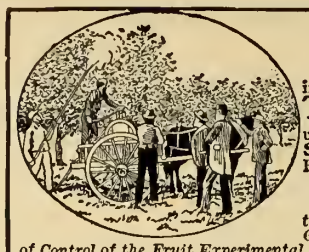
The first spraying of the season should be done before the leaves come out and at this time there will be no insects, consequently it will be unnecessary to use any kind of poison like paris green or any form of arsenic. This early spraying is to prevent the early growing fungi, like the apple scab and peach leaf curl from getting started. While the trees are dormant, much stronger materials may be used than would be possible later in the season. Bordeaux mixture, which consists of bluestone, lime and water, is one of the best all around fungicides that we know of. The lime is used principally to prevent the bluestone from injuring the foliage and hence if we use this early in the season before the leaves are out we can safely omit the lime, which makes of it what we call a simple bluestone solution. Some persons contend, however, that the addition of lime makes the mixture adhere to the tree better. This may be safely used as strong as four pounds of the bluestone (which is also known as copper sulphate or blue vitriol) to fifty gallons of water. If the leaf curl has been bad, peach trees should be thoroughly soaked with this material before the buds begin to swell. If we are spraying to prevent apple scab, and it is known tnat the disease is prevalent in the orchard, the trees should be well sprayed with the material of the strength mentioned. If the scab has not been bad in the orchard, two pounds to fifty gallons of water may be strong enough. Plum and cherry trees, as well as grape vines and blackcap raspberries, may also be greatly benefited by spraying with the bluestone solution before they begin growing. If we remember that the minute spores, or germs, of the diseases, are all over the surfaces of the plants, the posts in the vineyard and also on the ground, we will understand that even though the solution falls in many places other than on the things we are spraying, it is not being lost.

After the leaf buds on the apple are beginning to open and before the flowers come out, the trees should be given a spraying with Bordeaux mixture, of the strength of four pounds of bluestone, four pounds of lime and fifty gallons of water. Great care should be exercised in preparing this solution if we expect to get the best results. The only true Bordeaux mixture is made by taking the required quantity of the bluestone solution and diluting it with water until we have the barrel or tank half full, then preparing the lime solution and adding water to it to bring it up to an amount equal to that of the diluted bluestone solution. These two solutions should be in separate vessels and both should be poured into a third vessel, causing the streams to come together as they strike the vessel, thus insuring their being thoroughly mixed. This proceeding is necessary, because there is a chemical change produced when these two materials come together in equal quantities, which is quite different to that produced when a small amount of one of the materials is added to a large amount of the other.

Next to thoroughness in preparing the materials is the matter of carefully applying the fungicide. If we do not have pumps and nozzles in good working order, an otherwise good job of spraying may be spoiled after we have proceeded this far with it. The principle of good spraying is that the liquid as it comes from the nozzle should be in the form of a fine mist, or fog. This will settle over all parts of the plant in a very fine and evenly distributed layer. If the liquid falls on the leaves in the form of drops, no matter how fine they may be, they quickly run together and fall off in tiny streams. Of course, if the fine mist is allowed to fall upon any portion of the tree too long, drops will soon form and roll off. The operator should learn to know at a glance just how long to direct the spray toward any one place to keep it from forming into heavy drops and running off. When properly sprayed the tree will be quite moist, but yet not wet. By observing these points we not only save large quantities of the spraying material, but we actually get better results.

The second application of Bordeaux mixture for the apple scab, which is the worst early spring disease, should be given just as the flowers are falling. At this time it would be well to add about four ounces of paris green to each fifty gallons of the Bordeaux. This is for the benefit of the codling moth which is just now beginning to hatch out. After this it may be necessary to spray with the same materials two or three times more at intervals of from ten days to two weeks. In mid-summer if there are any signs of bitter rot, spraying with the Bordeaux mixture should begin again and continue every ten days or two weeks until the fruit is picked.

Dusting fruit trees is now coming to be a common practice with many, instead of using the liquid. Undoubtedly the dust method of spraying has many points in its favor. Chief among these is the ease and cheapness of application. A man told me the other day that it cost him $40 last spring to spray sixty acres of ten-year-old apple trees one time with the simple bluestone solution and that he dusted the same orchard once at a cost of only $8. It is generally conceded that the dust will have to be applied oftener



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Wins a Government Spray Pump Contest.

This is to Certify, *that at the Contest of Spraying apparatus, held at Grimsby, under the auspices of the Board of Control of the Fruit Experimental Station of Ontario, in which there were eleven contestants, the* ***Spramotor,*** *made by the Spramotor Company, was awarded* ***first place.***

H. L. Hutt
Judges.

If any further endorsement were needed it will be found in the superiority of the **Spramotor** itself. It is an **easy, quick and thorough eradicator** of fruit and vine diseases and insect pests. Unequalled in white-washing and painting buildings inside and outside—oil or water paints. We publish an 80 page book, **"A Gold Mine on Your Farm,"** which in addition to formulas, tables, best methods, etc., in spraying, tells about the **Spramotor.** We mail it free. Ask for a copy.

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It costs the Fruit-Growers of the United States FROM THIRTY TO FORTY MILLION DOLLARS A YEAR TO FEED THE

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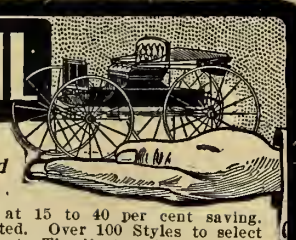

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As it is no longer an experiment to use "DUST" to destroy insects and fungi, the only difficulty to overcome is to find a machine that can do the work effectively and satisfactorily.
We have solved the problem—

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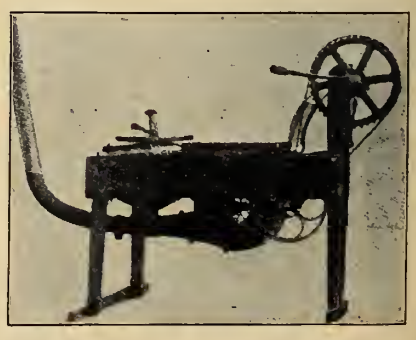

It Always Pays to Buy the Best.

Use lime dust instead of water. Destroys insects and fungi. Whirlwind for commercial orchards weighs about 100 pounds, crated. Whiriwind, Jr., for gardens, weighs 25 pounds. Capacity of large machine is 500 to 1,000 trees per hour, owing to condition of wind. Write for illustrated circulars and prices to

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"The Right Place"

To buy trees, is where you can get the BEST trees at RIGHT prices; this you can do by buying from us. Our trees are propagated direct from choice, bearing, reselected trees; they will produce fruit of highest color, richest flavor, most uniform size and the trees are hardy, early and prolific bearers. We guarantee our trees and prices to please. If you want an apple that will keep until the new crop comes in, plant the MISSING LINK.

Missing Link Apple Co.
(Nurserymen) CLAYTON, ILL.

Seed Corn

20 years' experience growing Seed Corn as a specialty, enables us to again offer this year all the leading and best field varieties grown or to be found. Our seed is the cream and most select stock from six thousand acres grown here in the Nishna Valley where corn reaches its highest development; well ripened and thoroughly mature before frost or freeze; all carefully sorted, selected and hand picked and sold on approval.

Seed Oats RATEKINS' NEW SENSATION, earliest of all; ripens before killed or injured by rust or blight; next in earliness are the Early Champion, Texas Red Rust-Proof, Lincoln, and White Russian, in their order.

We carry the Largest and Best Assortment of FARM and GARDEN SEEDS in the West.

Including Spring Wheat, Speltz, Northern grown Seed Potatoes, Grass and Clover Seeds, Alfalfa, Bromus Intermis, Meadow Fescue, Blue Griss, Red Top, Dwarf Essex Rape, Millet, Cane, Cow Peas, in short, all kinds of FARM SEEDS, besides a full and complete stock of all the GARDEN SEEDS that grow for critical buyers. Our big 20th Annual Catalog for 1904 mailed FREE if you mention this paper. Samples of Seed mailed free on application.

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Succeeds everywhere. Healthy, well-rooted stock of Fruit, Shade and Ornamental Trees and Plants at popular prices.

BROOKVIEW NURSERIES, Westmont, N. J.

New Giant Raspberry for Sale

I offer for sale the entire stock of the Giant Raspberry and the right to propagate them, strongest grower adn heaviest bearer, the smallest seed from any raspberry; ripens earliest of all shiny, black, hardy as an oak, the healthiest leaf. I will be glad to show them at any time in the season. Also for sale the new Studt Peach and the winter Apple Matilde. Write to J. C. STUDT, Colon, Iowa.

All for $1.00—Postage Paid

No freight or express charges; 5$ plants each, 150 in all, of 3 best strawberries, selected in 30 years' experience from more than 100 commercially tested kinds, cream of the list; to orders received before April 10 will add half dozen biggest variety on earth; best chance to get high class stock cheap to start a new plantation or for beginners; standard kinds everywhere; from Michigan pedigree stock.

C. B. PADDOCK, Albany, Illinois.

ORNAMENTAL EVERGREEN TREES

Mail size, 10 to 15 inches, postpaid, 4 for 50c, 12 for $1.00. We send different kinds of trees in these collections. We lose trees or please.

McCALL BROS., Bonner's Ferry, Idaho.

325 Strawberry Plants, $1.00

Selected from new, mulched beds. Fruit trees guaranteed 1 yr. Price list free. Ref. Toledo Savings Bank.

TOLEDO NURSERY, Toledo, Ia.

AUSTIN DEWBERRY.

I offer a few thousand plants of this fine new early Dewberry at $6 per M., 75c per hundred. Also Kansas Raspberries at $4.50 per M. Card- and Cumberland Raspberry at $10 per M. M. L. BONHAM, Clinton, Mo.

Cow Peas and Crimson Clover Seed pamhlet, all about the culture. free. A wholesale catalogue of fruit trees. Lucretia Dewherry plants. Wilson, $5.00 a thousand. Estahlished 1870. MILFORD NURSERIES, Box 64, Milford, Ill.

than liquid, but from the above figures it will be seen that he can afford to do so. The chief difficulty with the dust method is in making up the materials. I would advise every one who has an orchard of ten or twenty acres to invest in at least a small dust sprayer and experiment to some extent by comparing the effects of the liquid and dust methods. W. L. HOWARD.

Columbia, Mo.

(This article introduces the subject of spraying. See articles elsewhere in this issue on apple scab, apple aphis, codling moth, canker worms, etc. They go into particulars more fully.—Ed.)

Formulae for Spray Mixtures.

While these formulae have been published in The Fruit-Grower many times there is a demand for them from new subscribers, and it is advisable to publish them again at this time. Among the formulae mostly used are the following:

Bordeaux Mixture—Dissolve 6 pounds of copper sulphate in 4 or more gallons of water. In another vessel slake 4 pounds of quick lime in a small quantity of water. When the lime has slaked, add enough water to make 20 gallons. Then add enough water to the copper sulphate solution to make 20 gallons. Then pour the milk of lime into the diluted copper sulphate solution, thoroughly stirring the mixture. A better way is for one person to pour the milk of lime into the spray tank, and another person pour the diluted copper sulphate solution into the same tank at same time, thoroughly mixing the two solutions as the mixture enters the tank. This is the standard 6-4-40 strength Bordeaux mixture.

Paris Green—Different strengths of this are used. If one is to spray once for canker worms, and no further spraying is to follow, the mixture can be as strong as one pound paris green, four pounds of lime, to 100 gallons of water. The usual strength, where several applications are to be made is to use 1 pound paris green, 2 pounds of lime, to 150 to 250 gallons of water. The paris green mixtures must be kept thoroughly agitated, else the poison will settle. If one is spraying with Bordeaux mixture for fungous diseases, paris green can be added to the Bordeaux, treating the Bordeaux as though it were pure water.

London Purple—Can be used as paris green, but is more caustic and more lime must be added to prevent burning foliage.

Arsenate of Lead—Dissolve 11 ounces acetate of lead in one vessel, and 4 ounces of arsenate of soda in another. When these two solutions are mixed there is formed a fine white powder, which is sufficient for 100 gallons of water.

Arsenite of Lime—Two pounds of white arsenic, 8 pounds of sal soda, in two gallons of water, boil the mixture for fifteen minutes after it begins to boil; see that the arsenic and soda are dissolved; remove from fire and place in a jug labeled "Poison," and add enough water to fill the two-gallon jug, else the ingredients will crystalize again. When this mixture is used two quarts of the liquid are to be counted the same as one pound of paris green, and lime is to be added accordingly.

Kerosene Emulsion (for insects which suck)—Heat one gallon of soft water to boiling, and dissolve in it one-half pound of hard soap shaved fine, so that it will dissolve more readily. While the solution is still hot, remove from the fire and add two gallons of kerosene. Stir vigorously, and this will cause the mixture to blend in an emulsion, which has a milky appearance. A good plan is to use a small pump and pump the mixture back into itself for five minutes or more, which will generally result in a perfect emulsion. The formula makes in itself three gallons and adding 17 gallons of water will make the proper strength (10 per cent) for spraying for sucking insects. The emulsion, before diluting, should keep for weeks without showing any free oil.

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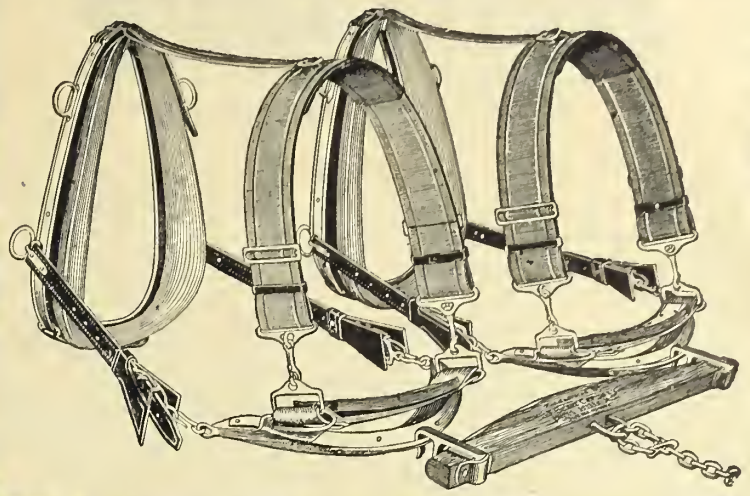

No Whiffletrees—No Traces

This harness is indispensable to every fruit grower—vineyardist or orchardist. Saves time, labor and patience. Pays for itself many times over every season in the saving of injury to trees and vines and damage to growing fruit, which always occurs from the use of ordinary whiffletrees and traces. One of the handiest of farm equipments.

We have hundreds of testimonials from every State, like the following:

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Gentlemen:—The Traceless Harness ordered of you some time ago came duly to hand, and has been in constant use in my peach orchards ever since. It works perfectly in every respect and is light and easy on the horses. It is a delight to cultivate fruit trees with this harness after years of tribulation with old-fashioned "double-trees," which "skinned up" every tree they came near. All your claims for this harness are most fully borne out, and for general farm work it is the best harness I have ever seen. Yours truly, B. A. CASE.

Don't delay—write us to-day for illustrated catalogue of this valuable harness, mailed free. Live agents wanted everywhere.

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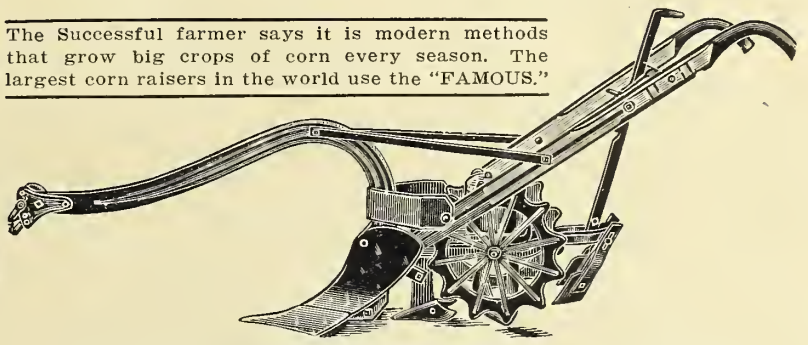

ST. JOE LISTERS AND DISC CULTIVATORS.

The LISTERS scour always and run deep. The St. Joe Disc Cultivators for listed corn can be adjusted for three times over the corn plowing 20 acres a day better than you can hoe it. Send for Catalogue. Dept G.

St. Joseph Plow Co., St. Joseph, Mo.

DRY Messick Tree Fertilizer LIQUID

FOR SOIL, TREE AND FRUIT—NOT FOR WOOD GROWTH

The Dry Fertilizer nourishes the tree, increases the yield, develops and matures the fruit. By its use trees grow and are productive in the poorest soil. **Price per 100 lb. sack, $1.50—less for quantity.**

The Liquid Fertilizer loosens and prevents trees from becoming barkbound; stimulates and purifies the sap; destroys vermin; promotes growth of young trees; restores old orchards to a healthy and vigorous condition, and will, if applied while orchard is in full bloom, assist pollination. **Price per gallon, $1.50—less for quantity.**

Send ten cents (stamps) for book, "Success and Failure in Orchard Growing." **Agents Wanted.**

MESSICK TREE FERTILIZER CO., DEPARTMENT W, CORNER FIFTH AND HAMPSHIRE STS. **QUINCY, ILLINOIS**

Don't **Throw Your Money Away**
WHEN YOU CAN BUY
Apple and Peach Trees
at from 3 Cents to 8 Cents Each.

The best varieties—Ben Davis, Winesap, Gano, Missouri Pippin, M. B. Twig, Grimes Golden, Wealthy, Northwest Greening, Janet, Jonathan, etc.

Peach—Elberta, Crosby, Champion, Alexander, Greensboro, Triumph, Bokara, Wright, Holdebaum, etc. A full line of all nursery stock. Sold direct to planters. Catalogue free. Write for prices or your bill.

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IMMUNE Hogs old and young made CHOLERA PROOF for life by Ridgway's NEW 1903 methods. One cent a head. 1,000,000 successful tests. Will at my own expense ship and expose a sow and pigs in any CHOLERA HERD in United States. Process sold on written guarantee with $10,000.00 security. 100 Cholera Proof Bred Sows for sale reasonable. Book and circular free. AGENTS WANTED Write to

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W. G. Campbell, Jr., General Manager. James M. Irvine, Managing Editor

Advertising Rate—Per Agate Line, 15 Cents. Fourteen Lines to the Inch.

No advertisement in class generally termed "objectionable" received under any conditions. Editions mailed on 15th; Forms close on 10th; i. e. January forms close January 10th, etc.

Subscription—One year 50c; 3 years in advance, $1. Foreign Countries $1

Remit by U. S. Coin, Postoffice Money Order, Express Money Order, Registered Letter or Bank Draft. Send stamps only as last resort. All remittances at our risk.

Unless otherwise ordered, subscription will commence with month following date of remittance, and continue until ordered stopped and arrearages paid. If you desire paper to stop when time is up, notify us. The letter "S" after date on your address tag signifies that paper will stop on that date. The address tag stands as a receipt for your remittance.

In compiling a list of over Thirty Thousand subscribers it is an easy matter to make mistakes, but we guarantee fair treatment to everyone. If you find an error in your address tag, or do not receive paper promptly, write us and we will trace matter up at once.

Entered as Second-Class Matter in the Postoffice at Saint Joseph, Missouri.

Volume 15 ST. JOSEPH, MO., MARCH 15, 1904 Number 3

More new subscribers were added to our list during the period from Jan. 15 to Feb. 15 than ever before in the same length of time. The past month shows about as good a record, perhaps better. But why not all work together to make the period from March 15 to April 15 the best of all? A great many of our readers are now at work getting up clubs. Will you not help in this work? Remember the "five-for-a-dollar" offer still holds good. And if your time is out, or nearly out, you can renew your own subscription and send four new names, all for $1. Now, see if you cannot get a club at once. All you need to do is to show a copy of The Fruit-Grower to those who are interested in growing fruit for home use or for market.

Our readers will notice a change in the size type used this month. We have tried this, but after the first pages had been printed we decided that this type will not do. It is larger than that used last month, but is too thin. so that it is hard to read—it is too "lean," as the printers say; the letters are too narrow for the height, and we doubt if this number is more easily read than was the February issue. Next month we hope to have another type which will be better than any we have used, for there seems to be a feeling that the type will have to be larger than we have been using. Larger type will be better for older persons, and the younger ones can read it at least as well. We want The Fruit-Grower to be so that every subscriber can read it from "kiver to kiver."

Fruit-growers of the Northwestern states are making an effort to secure a reduction of freight rates on apples from 75 cents to 60 cents per hundred pounds, to Missouri River points. They are also seeking to secure a reduction of freight rates on ocean steamers, looking to the widening of the export market. Still another matter of transportation which they are discussing is the proposition to have the railroads furnish free transportation for five carloads of prunes from the Northwestern states to St. Louis, these prunes to be given away to advertise this fruit, in an endeavor to make it more popular. Those northwestern fellows are hustlers, and are not content to simply grow fruit—they want to pack it properly and find a good market in which to dispose of it.

The articles on spraying for San Jose scale with the lime, salt and sulphur mixture which The Fruit-Grower has published have attracted much attention. There have been numerous inquiries in regard to the use of caustic potash in this mixture and to do away with the boiling. Professor Cordley of the Oregon Experiment Station, however, warns growers not to be too much carried away with the use of the caustic potash, for the reason that there is apt to be disappointment. He believes the lime-salt-sulphur mixture will be found better in every way. He said the use of caustic potash was quite common in fighting the San Jose scale on the Pacific Coast, but that of recent years the formula nas been omitted from horticultural reports, the lime-salt-sulphur mixture having given better satisfaction. Our readers should experiment very carefully with this insecticide, if they have orchards infested with San Jose scale. On the whole, where one remedy is sure and the other is a little doubtful, we believe it the part of wisdom to use the one which is sure, even though it is more trouble. San Jose scale is too dangerous to be fooled with.

Esewhere in this issue mention is made of the death of Mr. R. M. Keilogg, of Three Rivers, Mich. This announcement will come as a surprise and a shock to many Fruit-Grower readers, to whom Mr. Kellogg was well known by his writings. For a long time he conducted a department in The Fruit-Grower, and has since contributed special articles to our columns. Mr. Kellogg's death means a loss to strawberry growers everywhere. He had given up the propagation of other fruits and decided to devote his time to strawberries alone. There are many who do not agree with Mr. Kellogg's theories of plant growth and propagation, but all will admit that he was a good cultivator and grew good fruit, and he will be much missed. Through his writings Mr. Kellogg has always preached the gospel of good cultivation and careful handling of plants, and whether one agrees with his other theories or not, there can be no doubt that along the lines of good cultivation he did a vast amount of good. Mr. Kellogg attended the meetings of the Missouri and Illinois horticultural meetings last December, and he told the writer that he had especially enjoyed his meeting with Missouri growers. Perhaps one of the most pleasant features of the Missouri meeting was when Mr. McNallie, who had frequently attacked Mr. Kellogg's theories in print, gave the time allowed him for a paper on strawberry culture to be used by Mr. Kellogg, and the latter appreciated it. Mr. Kellogg was an authority on the subject of fighting insect and fungus pests among strawberries, and had promised an article for the March issue of The Fruit-Grower on this subject, but death claimed him before it was prepared. The last letter we received from him was dated Feb. 5, and we may be pardoned for quoting from this letter at this time: "The January number was a host. I never saw a better fruit paper come from the press. Certainly you are to be congratulated. I can furnish you with an article on spraying, and while it is our busy season I will get it to you within next few days, so you can use it in the March number, if you so desire." But he died before his work was done. We had never met Mr. Kellogg until last December, at the Missouri meeting, but he was a friend of The Fruit-Grower, and we join with our readers in a sense of loss at his death.

Before a meeting of fruit-growers of Washington and Oregon, Prof. N. O. Booth, formerly of Kansas, Missouri and New York, made an address comparing horticultural meetings of the West with those of the East. He said that our eastern meetings are given over almost entirely to a discussion of the best methods of growing good fruit —to a discussion of the plans of production, as it were. In the far West the growers do not talk so much about how to produce good fruit as they do about how to pack and market it profitably. He said this difference is natural because thet easterners have the market; all they need to do is to produce the fruit. The westerners have to ship their fruit a long distance to market, and for that reason they have to carefully consider the packing and marketing of fruits. He was not surprised therefore, when one of the principal numbers at the first horticultural meeting he attended in the West was a practical exemplification by an apple packer of how a good box of apples should be packed. This remoteness from market is also likely responsible for the excellent shipping associations which are to be found in the West. All the best shipping associations are to be found among the growers of the Western states, where the marketing of the fruit is all important. The Westerners are in the same position which Benjamin Franklin said our Revolutionary fathers occupied: "They must hang together, or they will hang separately"—they must have shipping associations or the railroads and the commission men will get them.

But has the time not come for these associations to be formed among the growers of the central and eastern parts of the country? Fruits which are to be shipped any distance must be shipped by refrigerator cars, and cooperative shipping is usually necessary to fill these cars. There should be strong shipping associations among berry growers, particularly, and among peach growers where there is a large acreage. These associations will likely not be operated successfully until conditions actually drive the growers together, but these conditions are coming very fast. Perhaps the chief obstacle now is the fact that not all growers grade and pack their fruit properly, so that the grower who does his work right does not feel justified in putting his good fruit in a car where there may be some inferior, poorly-packed fruit. But all this can be remedied by careful inspection and the rejecting of all fruit which is not up to the standard. Then, too, there is a feeling of distrust which many of our farmers have for their farmer neighbors, and this will have to be overcome before the associations are a success. But the shipping associations are coming. The berry growers will be the first to get in line, perhaps, but all fruit from sections where there is a large acreage will soon be handled in this way, and the wise grower is even now gettting his fruit, his grading and his packing up to a high standard, so that he will be ready for the change when it comes.

A subscriber ta La Plata, Maryland, writes The Fruit-Grower that the postmaster at that office refuses to sell a postage stamp unless he can cancel it, and so a money order for 25 cents had to be secured when a small remittance was to be sent. This is likely one of the postoffices where the salary of the postmaster depends on the cancellation of postage stamps, and so this postmaster is interested in getting all there is to the office. This is another argument in favor of the adoption of the post-check currency plan which has been proposed in congress. This plan, as is generally understoood, is for the government to issue its paper money, in denominations of $10 down to 25 cents, in the form of notes which can be made payable to a person or firm, simply by filling in a blank on one side of the money. These bills will circulate the same as ordinary currency until such time as one wishes to send a remittance by mail. Then by filling in the name of the person to whom the money is to be sent, the bill becomes a draft which can be collected only by the person whose name it bears, and the draft can be sent through the mails just as an ordinary bank draft or a postoffice money order is sent now. The person who fills in the blank at the same time attaches a postage stamp and cancels it with his initial. When the payee wishes to collect his draft he can do so by presenting at any postoffice or government depository, and it then goes to the treasury department and is cancelled and a new one issued in its place. The postage stamp which was attached to it will cover the cost of reissue, and the government will sustain no loss. This plan will make the sending of money by mail a safe and easy matter, and it will also provide for the frequent issuing of new money, which will be much more acceptable than some of the dirty and unsanitary currency which is now in circulation.

It is proposed to have a special meeting of the American Pomological Society at St. Louis next autumn, which will be of special interest on account of the fruit exhibits which will be made there. An innovation is proposed, in that the growers of different kinds of fruits will meet to discuss the culture of their respective fruits exclusively; for instance, there will be a meeting for apple growers, one for peach specialists, one for berry growers, etc. This meeting should be one of the best attended of any which the society has ever held, and fruit-growers everywhere should try to attend the exposition at the time of this meeting. And, by all means, arrange to stay long enough to attend the sessions and to see the exposition also, so that you will not try to be doing both at the same time.

How is this issue of the Fruit-Grower? Is it not worth the price of a year's subscription? We think it is, for anyone who grows fruit. But there are other good numbers to follow. Next month we will have an article on the "Plum Curculio and Its Injury of the Apple." It will be remembered that for the past two years there has been considerable injury to apples in Illinois and Missouri by an insect which ate holes in the fruit, making it "look like the top of a pepper box," as one corespondent described the injury. Well, we have a most excellent paper on this subject by Prof. Crandall of the Illinois Experiment Station, and everyone ought to read it, for it is something new. The April number will be another good one, and you can't afford to miss it.

A. Barber, Baxter Springs, Kan., writes that although he is 70 years old, he has set out a new orchard. This is along the line of our article in the February number, to the effect that the old men plant the trees. Mr. Barber adds, "Every fruit-grower ought to take the Western Fruit-Grower." And we agree with him here, too.

John A. Markle, Sherman City, Mich., when he renewed his subscription, said: "The January number is worth the price of ten years' subscription." And some of our readers wrote that the February number was even better than the January issue. Maybe the March issue is better than all. How about that?

"When I sent you $1 for a three-year subscription to the Fruit-Grower, I little thought that the investment would be returned every month, but afer looking over the January number, that is about the impression one receives."—S. G. Brown, Willoughby, O.

"I do not want to be without the Fruit-Grower. As to type and paper used, I am sure it is 50 per cent ahead of any newspaper published."—John Devlin, Washington, D. C.

Notes by the Way

Benjamin Buckman, Farmingdale, Ill., sends the following, which he said was not to beprinted, but we will risk printing it anyway:

"Your 'Notes by the Way,' in February number are first-rate, full of reminiscence and fine sentiment. But what right have you, a young man, to talk along this semi-regretting, smooth historical strain? What do you know of 'tallow dips' and the howling of wolves by night? Was the teacher who taught you the three R's paid by subscription, and did you father tell you that if the teacher had to whip you at school, you would get another whipping at home? Such things really smack of history—of old times in a new land. You don't remember the 'prairie schooners' which, by ox-power, wound their way past your log house and carried your relatives and friends of the 49-ers slowly toward their ideal of Paradise on earth, California and Oregon. They diun't write to you of Indian skirmishes, 'buffalo chips' and the giant trees that were half cut in two by the rope with which they allowed their wagons to drop slowly down the steep mountains. Hush up! I've seen you, and you can't pass for old here. But your article will call up recollections to many."

No, we couldn't bunco Friend Buckman into believing we were so very old, for the writer spent a very pleasant day at his home a few years ago. But one doesn't have to be old to remember those things in Missouri. Yes, and even more, for when this letter was shown to one member of the Fruit-Grower staff, he suggested that we write Mr. B. and tell him that he, another young man, had lived in a sod house in Nebraska, and personally looked for the skirmishes with Indians—not to speak of reading of them. And still another member had not only read of 'buffalo chips'—it had been a part of his duty to pick them up ror fuel for use in his own home.

And the writer has attendeded tne "subscription schools," which followed a short term of the public schools, and though he cannot remember his father, his mother told him that if the teacher at school ever whipped him, another dressing down would be forthcoming at home. What boy who has been raised in Missouri, and especially in the older portions of the state, has not had this experience?

Prehaps the desks in the school were not the slabs which your parents sat upon, but they were likely home-made. In one school they were great heavy desks of black walnut. What a waste of good timber, for the desks were unusually heavy, and the timber today would be valuable. There was a great waste of fuel in those days, too, for the school was heated with wood stoves. One man was employed almost constantly sawing the wood into stove lengths, and it seems it was out a few days ago since, standing by tne big fire this wood-sawyer had built at the wood-pile to keep him warm, the writer scorched, to a yellowish brown, the front of a new pair of jeans pants—we must call them "trousers" now, but "pants" was the word then. Have you never noticed how easily jeans pants were scorcned? Perhaps this is the reason they are not worn much now, they are not safe to take close to the fire. But this characteristic of being easily scorched did not suffice to save the hinder portion of these same trousers rrom being warmed very vigorously when they were presented at home after they had been burned at school.

This jeans, we might add, was not woven at home. But in the log "summer kitchen" of the log house referred to in February there was a loom, on which had been woven homespun years before.. And all the woolen blankets used in this farm home had been woven on this old loom, as well as the "hit-and-miss" and the striped rag carpets which covered the floors of the home. Yes, and more than this, for the footstool which the grandmother used was the block over which she had shaped the home-made straw hats which the men folks of the family had worn in the summer time.

No, Friend Buckman, we are not trying to get old. No one does this willingly, perhaps. We are simply trying not to forget some of the accompaniments of our childhood days, the memories of which are among the most precious possessions of any man or woman.

Talking the other day with a gentleman who has been active in trying to form shipping associations among fruit-growers, he said one of the hardest things to overcome is the distrust which many famrers have of their neighbors. He told of one of his experiences, which has doubtless been the experience of everyone who has ever engaged in this work. It had been decided, as a starter, to try to buy box material for all the growers, a committee having been appointed for this purpose. Buying in carlots as they did, they secured a much lower rate than they had paid in previous years, and the saving to each grower was considerable. The commitee simply acted for the growers, and each member paid actual cost of his stock. But at the end of the season, notwithstanding the growers bought their box material cheaper than they had ever done before, some of them circulated reports to the effect that the members of the purchasing committee had made a good thing out of the deal. They couldn't trust their neighbors.

Have you never had this experience? Is it not a fact that a great many farmers will distrust their neighbors without cause more readily than they will anyone else?

A gentleman whose land is almost entirely devoted to apple growing, told us a year or so ago tnat he had raised no corn, expecting to buy his supply of feed from his neighbors. The latter had corn to sell all right, but when the apple-grower wanted to buy his feed they asked him more than they were willing to accept from the regular feed dealers in town. They were not willing to accept from a neighbor farmer what they would take from a dealer who had little in common with them.

And what did the apple-grower do? Why, he simply hitched up his team and went to town and bought his neighbor's corn from a dealer, paying the regular market price therefor. Both men had a four-mile haul of the corn, simply because one farmer was not willing to treat a neighbor as well as he would a man who lived in town.

This is not an unusual case, is it? Have you not had a similar experience at times? Why, we know a man who had leased a lot of pasture land in Western Kansas. In the spring he tried to buy a lot of calves in the neighborhood, to turn in on the pasture during the summer. But do you suppose he could get them at the market price? No, sir. Those calves were bound for the Kansas City market. Loading them on the train, the owner took them to Kansas City, paying freight and yardage charges, to say nothing of the salesman's commission and his own personal expenses. The man who owned the pasture came to Kansas City, bought the very same calves, paid freight charges on them, and took them back home. Think of the wasted energy, the wasted money and the wasted time.

No, shipping associations will not be a success until farmers have confidence in their neighbors. This is one of the first essentials to success. Those farmers who are suspicious of every move of their neighbors, and yet who listen with the utmost faith to the smooth story of the tree salesman or the lightning rod man will not be apt to join the shippers' association. You will have to get along without them.

Not all farmers are this way, of course—not even a majority. But there are enough in every community to make a break in a move which looks to co-operative effort among farmers. This must be overcome. J. M. I.

The Family Circle

The Fruit-Grower has published numerous extracts from letters from subscribers, telling what they think of the paper and its policy. Perhaps our readers will be interested in knowing something about how the Fruit-Grower stands with its advertisers. Here is a story which will illustrate this:

This season, when the orders for advertisements of seedsmen came in, it was found there was no order from W. A. Burpee, the Philadelphia seedsman. This was strange, we thought, especially as this firm has written us in other years that the Fruit-Grower readers had proved to be good customers—that "The Family" had bought lots of seeds. We began an investigation and the gentleman in charge of the advertising department of this firm wrote us that on investigation he had found that the Fruit-Grower had brought good returns in other years, and that the failure to include the Fruit-Grower in this season's advertising list was undoubtedly an oversight.

This made us feel good, of course, for we dislike to lose as good a seedsman as Burpee on account of poor returns from advertising—so we expected to get this order next season, this year's list having been closed, as we thought. But listen to what the advertising man wrote a few days after the first letter:

"Since writing you on the 13th, Mr. Burpee has returned from a trip in the South, and one of the first things the writer mentioned to him was the fact that the Fruit-Grower had been overlooked in making up the advertising list. Mr. Burpee at once instructed that orders were to be sent you for March and April issues, using cuts as per inclosed proofs."

And the first of these ads appears in this issue. The Fruit-Grower is a good advertising medium, for the members of "The Family" are good people.

As announced last month, this department is for the purpose of talking with the members of "The Family." Those things which we want to say especially to our readers, about the Fruit-Grower and its relation to them, will be found here.

One thing we will have to say over and over again is for our readers to be careful in writing their names when they send their subscriptions—or, for that matter, you ought to be very careful to write your name plainly on all occasions. And don't forget to sign your name, either, to your letters.

You never fail to do that? Of course not—that is, you think you don't, but a great many persons do fail. Scarcely a day passes but that we receive letters with no names signed. Some of them contain money, too. A few weeks ago we received this letter:

"My time is out, and I have inclosed in this letter 50 cents to renew my subscription. I like your paper very much."

And no name was signed to the letter. What did we do? The letter was postmarked "Hatton, Mo." Upon investigation we found we had but one subscriber there, and credited his account with 50 cents.

But suppose we had, as is usually the case, from ten to fifty subscribers at that place? Then what?

Why, we would have simply had to wait until we could have a complaint from some subscriber at that point to the effect that his account had not been credited with his renewal, and then we would have told him about this 50 cents.

This subscriber, if his case had gone this far, would have not received credit until this complaint was made. And it was not our fault.

This is not an exceptional case, except that it was much easier to find the person entitled to credit. Every newspaper in the country has this same experience. And you ought to see some of the letters which are received from persons who are careless in this way. Whew! The language fairly burns the paper on which it is written. "Give me credit or send my money back;" "I don't like such ways of doing business;" "If you don't fix this matter up I'll denounce you as a fraud." These are mild samples of some of the letters which every publisher receives. And all through the carelessness of other people.

Don't fail to sign your name, and don't fail to write it plainly. And another matter might be brought up here:

Sign your name the same way all the time. Don't sign it "James K. Polk" one day and "Jim Polk" the next. All business men know they have to sign their checks and business documents the same way all the time, but not all of them appreciate the fact that they ought to do this in writing to newspapers which may have their name on the mailing list one way, and are unable to locate it when a letter signed another way is received.

Too much stress cannot be laid upon matters of this kind. Thousands of letters and packages, many of them containing valuable articles, go to the dead letter office every year, simply because some persons are careless.

The other day we received a letter addressed to "Western Fruit-Grower, St. Louis, Mississippi."

Pure carelessness, we believe. The letter went to some point in Mississippi and, on a hazard, was sent then to St. Louis, Mo. The postal officials there receive so much mail for the Fruit-Grower which is addressed to "St. Louis" instead of to "St. Joseph," that they were able to supply the correct address, and so the letter reached us all right. But by what a round-about way!

If letters are plainly addressed and properly signed, not often will one go astray. We will assume the risk, at any rate—we have that much confidence in Uncle Sam's postal service.

So send along your letters. And you need not be afraid to put dollar bills in them, either. We will get them, if properly addressed and securely sealed.

Our five-for-a-dollar offer should stimulate every reader of the Fruit-Grower to get out and hustle a club of five new subscribers, or four new ones and one renewal, and send the whole with a $1 bill to pay for same. Don't go to the trouble of getting postage stamps to the amount of 50 cents, and send simply your own renewal—get four new subscribers and send a dollar. Much easier and it is much more helpful to the Fruit-Grower.

Shall we not depend on you for a block of five for $1? We ought to be able to count on receiving such a club with every renewal suoscription. Send yours today.

In this department we refer to mistakes of subscribers. Now, listen to this joke on an advertiser: We received a letter shortly after the January number was out, in which an advertiser protested vigorously against his advertisement occupying half-page space. He wanted only one-fourth page, and we had no right to double-up on his order.

And, of course, we had no such right. But we looked up his letter and found he had ordered half-page ad, and the mistake was his own. But listen to the sequel: He has written us since that he never had such returns from an advertisement. Orders simply poured in. So now he feels pretty good, anyway. You see, we are all apt to make mistakes, but let us be as careful and make as few of them as possible.

A subscriber asks for full directions as to how to make grafts and to bud nursery stock. This matter has been discussed in the Fruit-Grower within the last year or so, and we will have to wait a while before publishing the articles again. However, we can furnish all the copies of the Fruit-Grower for 1903, among which are numbers containing illustrated articles on these subjects. These papers unbound will cost 50 cents for the twelve papers. Bound in permanent form they will cost $2 for the book.

The Canker Worm

By Professor J. M. Stedman

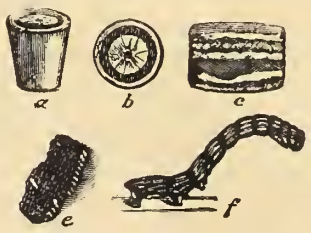
There are two species of canker worms which resemble one another in appearance very closely indeed. One would not ordinarily notice the difference between the two species unless he had the two together in order to compare them. The larvae look exactly alike in both cases and so do the wingless females. Practically the only difference between these species which is necessary for a fruit-grower to know is, that the one known as the "fall canker worm," hatches out in the adult condition in the fall of the year, usually beginning the first of October, and continuing until along in the latter part of December; while the other species, known as the "spring canker worm," hatches out in the adult form in the spring of the year. Many of them will begin to emerge during the warm spells in January and continue to do so at intervals whenever warm days occur, subsequently during the winter until early spring, when the rest of them emerge. With the slight difference in the appearance of these insects and the difference in the time

Canker Moths. a, male; b, female.

of the emergence of the adults, these two species have exactly the same habits, so that it is not necessary to separate the two species in a discussion of the life history and habits of the canker worm.

By referring to the figure, it will be seen that the male canker worm is a moth with well developed wings, as we always expect to find on moths, and this male can fly as readiy as any other winged insect. The female, on the other hand, as will be seen by the figure, is an absolutely wingless creature, not having even the merest trace of wings. She is therefore unable to fly and is helpless except in so far as her ability to crawl is concerned.

The females of both species when they emerge from their cocoons, which are scattered about on the ground or in sheltered places, as under stones and rubbish and all kinds of matted grass, begi nto crawl in search of the proper trees upon which the larvae can feed, and it is remarkable to note how these insects will pick out from among



Canker Worm (f) and Eggs (a, b, c).

a mass of trees the particular ones upon which the young can feed. Having found the suitable tree, which may be an apple, or an elm, or other shade, forest, or orchard tree, this female ascends the trunk to the limbs, crawling out to the twigs, and there deposits her eggs, perishing soon afterwards.

It matters not whether the adults hatch out in the fall or during the winter or in the spring—in all cases the eggs are deposited up in the tree by the female, who is compelled to crawl up there for that purpose, and in all cases those eggs do not hatch until spring, when the leaves begin to appear on the tree. When the weather becomes warm enough to start the green foliage upon the trees, the canker worms hatch into little dark-colored larvae, or worms, which move in a looping or measuring fashion, and feed upon the leaves. They spin a web wherever they go, and when the limbs upon which they are feeding are suddenly jarred, these larvae have the habit of dropping down a foot or a foot and a half and remaining suspended by their silken thread, crawling up again when the disturbance is over. Very often one can determine the presence of the canker worm by jarring the limbs and observing the insects suspend themselves by this silken thread before one notices the holes that are being eaten in the leaves by them. It does not take many days for these insects to devour enough of the leaves to make their work noticeable, and in a very short time afterwards the insects become so ravenous and consume so many leaves that in a comparatively short time one notices that the trees are being completely stripped of their leaves. This taking off of the leaves of the various trees by these larvae would ordinarily do no particular amount of harm were it not for the fact that a fruit tree, when stripped of its leaves to any great extent at this season of the year, has the habit of shedding its fruit in consequence, and it is this shedding of the fruit as the result of the insects' work upon the leaves that causes the damage in our orchards. It is a fact, however, that under certain conditions, as, for instance, a prolonged drought, the stripping of the leaves from the tree is apt to kill it. Many large elms were thus killed outright a few years ago when we had the great drought, because of the inability of the trees to send out a new set of leaves under drought conditions.

After the larvae have become full grown, at which time they are usually of one inch to one and one-quarter inch in length, they suddenly leave the trees, dropping down to the ground by means of their silken thread and crawl about in search of some sheltered place where they can be protected, and spin their cocoon, inside of which the larvae transform to the pupa condition.

The insect may crawl a considerable distance before finding a suitable place and will collect along fences where there is a quantity of weeds or matted grass, or under stones, or any rubbish that will afford shelter.

As soon as the pupa stage is reached, which is done early in the summer, these insects remain in that condition until fall or the following spring as the case may be according to the species. It will then be seen that there is but one brood a year, and that the insects hatch out early in the spring and in a short time transform to the pupa condition, the work having been done within a very few weeks, while the trees are in bloom and the fruit being set.

It is the small orchardist or general farmer who has a home orchard who suffers most from the atacks of the canker worm. The large orchardits, and especially the commercial orchardist, who depends upon his fruit for a living, fights these insects in connection with others, so that it is rare that they do any great amount of damage. But the ordinary farmer is usually busy with other things and neglects his orchard until he finds that the leaves are being badly eaten, and then, as a rule, he does nothing to check the ravages until it is too late. It is a rare thing indeed that we find people trying to fight these insects in shade trees or in forest trees, and yet if one has an orchard comparatively near elms or other trees which are infested with these insects, it would certainly pay to fight the insects in these trees, so as to prevent their coming over in undue numbers to the orchard.

There are two simple methods of fighting the canker worm. If one waits until spring and until the insects appear on the trees, the larvae can then be killed very readily by one or two thorough sprayings with an arsenical poison made rather strong—stronger, in fact, than we would use for the cod-

Burpee's Superb GOLDEN GLOBE ONION

BURPEE'S NEW EARLY GOLDEN GLOBE ONION,—*Natural Size, from a Photograph.*

Golden Globe is the earliest of all globe-shaped Onions, and in *extra long-keeping character* equals our famous *Australian Onions*. The bulbs are of a beautiful elongated globe, with no tendency ever to become flattened; average weight seven to nine ounces. The skin is thin, uniformly of a beautiful light golden yellow. It has the *smallest top* of any onion we have ever grown,—generally no longer or thicker than a lead-pencil, while the uniformity with which the bulbs cure is astonishing. Extremely hard and solid, the pure white flesh is most mild and pleasant in flavor.

The genuine seed can be had only in our sealed packages, as we have not supplied any other seedsmen. **Per pkt. 10 cts.; ½ oz. 20 cts.; per oz. 35 cts.; 2 ozs. 55 cts.; ¼ lb. $1.00; lb. $3.50,** postpaid.

You ought to try this new Onion now,—then when the seed is lower priced next year, you will make money by using it for your entire crop of Yellow Onions. Please note that—

For 25 Cts. we will mail, postpaid, one full-size packet (such as we sell separately at ten cents per packet) each of this new **GOLDEN GLOBE ONION** and also of the unequaled new **FORDHOOK FAMOUS CUCUMBER,** the largest, most handsome, and finest flavored of all cucumbers,—**BURPEE'S BRITTLE-ICE LETTUCE,** the popular new "*Nameless*" Lettuce distributed for advance trials last season,—**BURPEE'S HALBERT HONEY WATERMELON,** sweetest and best for home use,—and **CHALK'S EARLY JEWEL TOMATO,** the best of all extreme-earlies.

These Five are all shown, painted from nature, on the cover or plates of our new Catalogue. ☞ Perhaps there are named above one or two vegetables that you do not care for. Therefore you *may omit* any of the above, and instead **select a packet of either** the New DANISH ROUNDHEAD CABBAGE,—the unequaled CHINESE GIANT PEPPER,—the earliest HAILSTONE RADISH,—the delicious FORDHOOK BUSH SQUASH, or the unequaled New QUARTER-CENTURY STRAIN OF BURPEE'S BUSH LIMA BEAN.

BURPEE'S FARM ANNUAL

"The Leading American Seed Catalogue"

is now more "a leader" than ever before. Thoroughly revised and greatly improved, it tells not only THE PLAIN TRUTH about seeds, but has also **many new features for 1904.**

An elegant book of 178 pages, it contains hundreds of illustrations from nature and **six superb lithographic plates.** It shows in natural colors thirteen "true and tried" new Vegetables of sterling merit, three new Nasturtiums (of a distinct type), and seven Superb Sweet Peas,—all painted from nature, by New York's leading artist, at our famous FORDHOOK FARMS.

It presents also *twenty-one faithful photogravures* of America's Largest Mail-order Seed Trade,—views in both town and country. Altogether it is pronounced the **Best Seed Catalogue ever published.**

And it's Free! provided you will *ask for it now.* **It will cost YOU one cent** to mail your address on a postal card to us. It will cost us four cents postage—plus eight cents for the catalogue,—just **twelve cents** to respond to your request.

W. ATLEE BURPEE & CO., Seed Growers, Philadelphia

Onion Seed is a specialty with us and our strains are extra fine!

75 Cts. per lb. buys the best *Yellow Danvers* and *Large Strasburg;* **80 cts. per lb.** for the finest *Yellow Globe Danvers;* **95 cts. per lb.** for *Extra Large Red Wethersfield,* and **$1.15 per lb.** for our Extra Dark-skinned *Southport Large Red Globe*—in lots of **5 lbs.,**—assorted as desired. ☞ You can buy so-called "*cheaper*" *seed,* **but** it will not be so good. ☞ If you are a Market Gardener it will pay you to write for **BURPEE'S "BLUE LIST,"** a practical book of **144 pages**—most complete of all wholesale catalogues. It will pay you to plant

Burpee's Seeds,—Best that Grow!

FREE SEEDS. Wonderful Offer

Two regular sized packets of choice vegetable and one of beautiful Flower Seeds, and sample packet each of Pencillaria, Bromus Inermis, Speltz, Japanese Millet or Billion Dollar Grass, Essex Rape, Teosinte, Thousand Headed Kale, Vicia Villiosa, Soji Beans and Kaffir Corn and our catalogue manual. We will also send to every new customer answering this advertisement

A Due Bill for 50c Worth of Seeds

to be selected from our catalogue, FREE. We only ask you to send us a dime or 10 cents in stamps to help pay the postage and packing. This offer is simply great and you cannot afford to miss it. We are very anxious to have you get our Catalogue Manual. It is illustrated and contains much valuable information and description in regard to buying, planting, tending and caring for all crops. All the new things of known merit are described and priced. **Iowa is the garden spot of the whole world.** The owners of the Berry Seed Company live on a farm in the best part of this great state and raise much of their own seeds, therefore are in a better position to furnish stronger and purer seed for less money that any other seed house. It is from farmer to farmer at wholesale prices, with no middleman's profit. The catalogue is free for the asking. It will save you lots of money. Be friendly. Write us.

A. A. BERRY SEED CO.,
Box 64, Clarinda, Iowa.

SEED CORN

Fire-Dried
Pure-Bred

Cut out this ad, and return to us and we will **Send You Free** a copy of the most complete, illustrated, descriptive seed corn catalogue ever printed. It fully describes all the leading and best varieties of corn, which will double your yields. Ears 12 to 15 in. long, weigh 1½ to 2 lbs. each. Dont lay this paper down until you have sent for this catalogue. It means dollars to you.

J. B. Armstrong & Sons
Seed Corn Specialists, Shenandoah, Ia.

Free
The biggest and best seed corn catalog ever printed.
Free

SEEDS. Buy seeds that grow luxuriantly and produce bountiful crops. That's the kind we sell—seeds that will grow! Send for catalog, and get a package of Royal Giant Pansies free. The finest pansies grown. Send to-day. SPECIAL BARGAIN: 10 pkts. Annual Flower Seeds, 10c., 5 pkts. Vegetable Seeds, 10c. PLANTS. Our plants are strong and healthy. Give us a trial. 6 Roses 25c; 6 Geraniums, 25c; 6 Begonias, 25c; 4 Pelargoniums, 25c; 3 Palms, 25c. 1 Chrysanthemum, 1 Geranium and 1 Fuchsia, 10c. **A. C. Anderson, Columbus, Nebraska.**

GREAT BARGAINS in SEEDS.

Send today for fine **Free Catalogue** of **New** and **Standard TESTED SEEDS. Prices lowest.** Presents with orders. Large buyers ask for Wholesale List.

ALNEER BROS.,
No. 28 A BLK, Rockford, Ill.

OLDS' SEED SPECIALTIES

SWEDISH OATS
[Wis. No. 4]
Best out of 36 varieties for 4 years at Wis. Ex. Station. Stiffest straw, plumpest, heaviest yielder. *10 bushel lots at 85 cents, sacks included.*

MANDSCHEURI BARLEY
Doubles the yield of common varieties. No barley equal to it. Our seed is pure and clean. *10 bu. at 75c; 50 bu at 70c.*

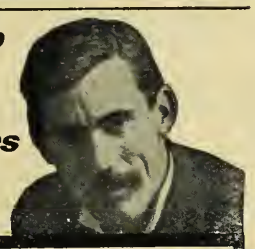
SPELTZ [Emmer]
The wondorful Russian grain. Outyields both barley and oats. Succeeds well everywhere. Great stock feed. *10 bu. of 40 lbs at 70c; 50 bu at 65c.*

JAPANESE MILLET
[Billion Dollar Grass]
Most valuable of all forage plants. Yields more than German Millet and of splendid quality. *10 bu. of 40 lbs. at $1.35.*

CLOVERS AND GRASSES
We have large stocks of Medium, Mammoth and Alsyke Clovers, Alfalfa, Timothy, Red Top, Orchard Grass, Brome Grass, Lawn Grass, etc. Lowest market prices. We also make a specialty of choice Seed Potatoes and Seed Corn. Garden Seeds of all kinds, Tools and Poultry Supplies. 72-page catalog free.

L. L. Olds Seed Co., Drawer S, Clinton, Wis.

I'd Like to Meet My Seed Customers Face to Face

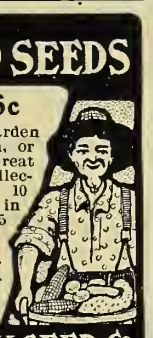


and tell them all about my "Red Packet Seeds." How carefully and honestly they're grown, tested and packed. As that is impossible I want you to see my new catalog. It's different from others. Every word true, pictures and all. Send for it. It's free and I throw in a package of fine flower seeds and some watermelon seed. Samples of seed corn too if you want them. $5.00 worth of seeds free. Ask about it.

HENRY FIELD, Seedsman, Box 15, Shenandoah, Ia.
The Ear Seed Corn Man.

GOOD SEEDS

Send 25c
for our great Garden Seed Collection, or 25c for our Great Flower Seed Collection; 50c for both. 10 full sized packages in each collection. 25 varieties of either for 50 cents. The best seed offer ever made. Illustrated catalog free. Write for it.



MISSOURI VALLEY SEED CO.
P.O. BOX 800 ST JOSEPH MO.

GOOD SEEDS CHEAP

BEST Ever Grown.

None better and none so low in price, 1c per pkt. and up, postpaid. Finest illustrated catalogue ever printed sent **FREE.** Engravings of every variety. A great lot of extra pkgs. of seeds, new sorts, presented free with every order. Some sorts onions only 55c per lb. Other seed equally low. 40 years a seed grower and dealer and all customers satisfied. No old seeds. New, fresh and reliable every year. Write for big FREE catalogue.

R. H. SHUMWAY, Rockford, Ill.

SEED CORN

Note the type of ear, shape of grain. That's the kind we offer. Specially bred and grown. Carefully selected, all the leading varieties. We sell only fresh seeds, everything in

VEGETABLES, FLOWERS AND FARM SEEDS.

No worthless "bargain" offers. Only sure growers at right prices. Ask for fine free Catalogue.

ARCHIAS' SEED STORE,
106-8 E. Main St, Sedalia, Mo.

BARGAINS IN PLANTS AND TREES
worth double the money, by mail postpaid.

200 Marie Strawberry	$1 00	20 Wilder Currants	$1 00
100 King Raspberry	1 00	20 Fay "	1 00
100 Ea. King Blackberry	1 00	20 Elberta Peach	1 00
100 Ohmer "	1 00	10 Pear assorted	1 00
20 Niagara Grapes	1 00	10 Cherry assorted	1 00
20 Worden "	1 00	15 Apples "	1 00

Everything for the fruit grower best varieties cheap. Free catalog of great bargains—3 new strawberry plants free for 6 names of fruit growers and 2c stamp.
W. N. SCARFF, NEW CARLISLE, OHIO

FLOWERS Park's Floral Magazine, trial, Park's Floral Guide, 1904, and Park's Seed Pkg., 1000 sorts, for a big bed that will surprise you with new flowers every day all summer, all for stamp. Geo. W. Park, B58, La Park, Pa.

ling moth. It is advisable to use an arsenical poison for the canker worm which will equal in strength a mixture made by using one pound of Paris green and three pounds of lime in one hundred and twenty-five gallons of water. The reason for this is, that the canker worms are a little harder to kill than most leaf-feeding insects, and it is advisable, therefore, to give them a stronger poison, so as not to have to repeat the spraying; and then, furthermore, as the larvae become older, they become still harder to kill, and hence it is of a double advantage to spray the infested trees just as soon as possible. If one waits until the larvae have done some little damage and are of considerable size, one may have to make the above as strong as one pound of Paris green to one hundred gallons of water.

It is advisable, however, to use arsenate of lead instead of the other arsenical poisons. The arsenate of lead has several advantages over the other arsenical poisons for biting insects: It stays suspended without the usual agitation, it does not require the use of lime, it remains on the foliage and resists the rains much longer than the other ordinary insecticides, and there is no danger of burning the leaves or injuring the tree in any way by the use of an unusually strong mixture, except, perhaps, in the case of the peach tree, where sometimes the leaves are injured by the use of arsenate of lead.

One can make arsenate of lead by dissolving 4 ounces of arsenate of soda in a bucket of water and 11 ounces of acetate of lead in another bucket of water, and after these are thoroughly dissolved, mix the two together and allow it to stand over night. This amount of arsenate of lead that is then formed should be placed in fifty gallons of water for the canker worm.

Arsenate of lead is really the best insecticide for biting insects that we now have, and fortunately it is now sold on the market under the name of "Disparene," so that one can obtain this arsenate of lead already made in the form of a paste, as cheaply as he can make it himself, and can use it with less trouble than is experienced in trying to use the common paris green.

Unless one has a large orchard and is ready to spray it for the various insects and fungous diseases, it is advisable to resort to the following method to keep the canker worms away from the trees. Where one has a large orchard and everything ready for spraying, it is not necessary to resort to this method, because one has to spray commercia lorchards for the codilng moth and other insects and also for various diseases, and in doing so, one kills the canker worms as well. But it is a fact that the ordinary farmer not only is not equipped for spraying, but will absolutely neglect spraying even where it is necessary to spray, and in those cases especial atention should be paid to the method of keeping these insects away from the trees. It is also the very best in the case of shade and forest trees that we wish to protect from these insects, to fololw the plan I am now to give.

We can take advantage of the fact that the female is wingless and must crawl up the tree in order to deposit her eggs, otherwise no canker worms will appear on those trees, and it is a very simple matter to keep this wingless female from crawling up the tree. This can be done in various ways. We can scrape the loose bark off from around the tree and tie around it paper covered with printers' ink, or cotton-wool, or what is still better, use common wire mosquito netting. This wire mosquito neting should be cut up in strips four or five inches in width and long enough to go around the tree and lap about six inches. Along one edge of this strip should be little cuts a couple of inches long at intervals of every two inches. The loose bark should then be scraped from the trunk at a suitable distance above the ground and this wire then tacked around the trunk at that place by overlapping the cut edges and tacking through them, thus causing the wire guard to flare out away from the tree at the bottom. The two ends can then be fastened together by means of a wire. One should now see that all cracks and crevices between the trunk and wire netting are stopped up so the little insects cannot find an opening through which they may escape.

This protection should be placed on the trees by the first of October and should be left on the trees until the following summer. Many people in using these wrappers think that they can place them on the trees in the spring of the year and still prevent the female from depositing her eggs, but while this may protect the tree to a certain extent and save a good many females from crawling up, it nevertheless is not a complete protection, because of the fact, as I have stated before, the female canker worms begin to hatch out about the first of October and keep it up at intervals during the entire winter.

This method for the protection of trees costs on an average of about two cents a tree, and is very much cheaper than one could think of spraying his trees for. There is no excuse why the canker worm should do the damage that it does every year, not only in orchard trees, but also in our village shade trees. The simple bandage over the shade trees will do away with all of the unsighty trouble that we find so common in our towns.

J. M. STEDMAN.

Columbia, Mo.

Frozen Peach Trees.

The very cold weather of the past two months has done great damage to the peach trees of New England. In a very large majority of cases the fruit buds have been killed and the crop of 1904 annihilated. Worse than that, in a large number of instances the wood has also been frozen and the trees damaged. Hundreds or even thousands of trees are reported to be killed to the ground, and it is quite certain that a large proportion of all the trees are killed back more or less.

This will be a distinct though temporary set back to the rising peach industry of New England. Some persons will doubtless abandon their peach trees entirely, but most men will want to know rather what can be done to save the trees.

Prof. F. A. Waugh, horticulturist at the Massachusetts Agricultural College, says that in his judgment, the best treatment for peach trees thus injured by freezing is to cut the tops back in proportion to the damage. In any case it will be proper to cut away all the dead wood, leaving only that which is strong enough to make a fairly vigorous start of buds in the spring. This can be determined in general by cutting into a branch with the pruning knife. If the wood is black inside, or if it shows considerable discolored layers, it is probably either dead or so much injured that it will not start its buds vigorously.

In cases of moderate freezing this rule would require only the removal of the shoots grown in 1903. In more serious cases it would be necessary to cut back into two year old wood. In a deplorably large number of orchards it will mean cutting away all the main branches, leaving only the trunks and a few stubs. Even such severe pruning as this is practicable, particularly with young trees, and is far better than sacrificing the trees altogether.

It will probably be useful also, in connection with the cuttin back of frozen trees, to give them a vigorous start in the spring by early cultivation of the ground, and by the application of a small amount of some quick-acting nitrogenous fertilzer like nitrate of soda. In applying nitrate of soda from 3 to 5 pounds should be given to each tree.

Coyne Bros., Chicago, Ill., call our attention to the quotation, "We attract friends to us by what we seem to be; we keep them by what we are." And then they add, "Accordingly, your January number is bound to attract friends and keep them."

NORTHRUP, KING & CO'S
Peep o' Day
The Sensational Early, New
Sweet Corn
THAT IS SWEET

Ten days to two weeks earlier than any other sort.

Tenderest, Juiciest, Sweetest and Most Productive

Suited to all soils and climates.

EVERY PRIVATE MARKET GARDEN SHOULD GROW IT

See Catalogue for Cash Prize Offer

BOYS Get a half acre or vacant lot and have a Sweet Corn Farm. People will buy this corn eagerly at a good price because it is early and sweet

SPECIAL OFFER Send 20 cents silver, or stamps, (with name of this magazine) for large packet of N. K. & Co's "Peep o' Day" Sweet Corn (300 seeds; enough for 60 hills) and our pictured catalogue of NORTHERN GROWN SEEDS. Valuable seed premiums FREE. WRITE NOW.

NORTHRUP, KING & CO.
Seedsmen, Minneapolis, Minn.

43 FLOWERS 30¢

Worth $1.25
SPECIAL OFFER to introduce our goods. Money back if not pleased.

20 Pkts. Seeds
1 Pkt. Diamond Flower.
" Semple Asters, 4 cols.
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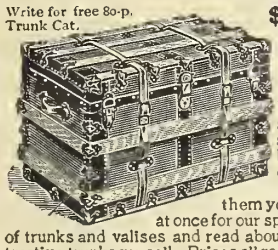

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Crown Gall of the Apple

As time approaches for the planting of apple trees there is an increasing interest in the subject of crown galls on roots of trees. At the late meeting of the Missouri Horticultural Society, Prof. W. L. Howard told of some experiments which have been conducted at the Missouri Experimental Station with this trouble, which show it to be a hard one to control. The accompanying illustrations show characteristic appearance of the crown gall. Illustrations are also presented of other forms of root growths which are sometimes mistaken for crown gall. Special attention is called to the one showing enlargement of roots, due to the work of the woolly aphis. One can easily notice the difference between these roots and the ones ffected with crown gall. The aphis roots will be found spongy, and present a difference in appearance from the crown galls. Aphis-infested roots can be treated with kerosene emulsion or some other insecticide, and unless they are badly infested, can be planted in comparative safety, provided steps are taken to prevent another infection of the trees after they are planted. It is hoped that these illustrations will be helpful to Fruit-Grower readers who may receive nursery stock showing signs of either of these troubles.

Fig. 1.—The worst form of Apple Gall, a sort of cancerous growth almost surrounding the main root.

Regarding crown gall Prof. Howard says:

"A great deal is heard about galls on the roots of apple trees, and on raspberries — more especially the reds. The galls are warty-looking excrescences, which, on apples, seem most often to atack the trees at or near the crowns—hence the name, 'crown gall.' It is found, however, that the galls may form on any part of the main root or roots, wherever there is a wound. This is why the trouble is generally found at the point of union between scion and stock.

"The tree galls are warty excrescences which are not to be confused with the knots which are caused by woolly aphis or by either the stock or scion outgrowing the other. These last have smooth surfaces while the true galls are warty and rough. Galls generally cause a tuft of fine, fibrous roots to form, but in some instances aphis may also do this, but not so often. It must be remembered that crown gall is no disease, being, so far as we know, as old as orcharding, but with the rapidly increasing number of apple trees is becoming more numerous and noticeable. In our experiments we have tried to answer the following question: What remedies may be used without injury to the trees; if removed and wounds treated, will the galls grow again; how may trees be treated before planting; can affected trees be treated while growing in the orchard; does the kind of soil have anything to do with the occurrence of the galls; is there any relation between raspberry and apple gall—that is, will one attack the other plant; and will different methods of grafting influence the occurrence of the galls.

The investigation has been carried on for two years. In all there have been nearly 3,000 trees used in the experiment and 275 different remedies and combinations employed. The following materials which are known to be more or less harmful to germs of all kinds were used direct, in combinations and under different circumstances:

Copper sulphate (bluestone), iron sulphate (copperas), sodium chloride (common salt), lime, sulphur, formalin, ammonia water, bichloride of mercury (corrosive sublimate), copper carbonate, carbolic acid, hydrocyanic acid, potassium dichromate, mercuric cyanide, silver nitrate, gas tar, kerosene oil, Bordeaux mixture, and hot water.

The remedies were used in three ways: for dipping the roots in the materials, by sprinkling the soil with the solutions until the surface was wet just as trees were being planted, and by

Fig. 2.—Shows where gall was removed, but grew again after wound was healed.

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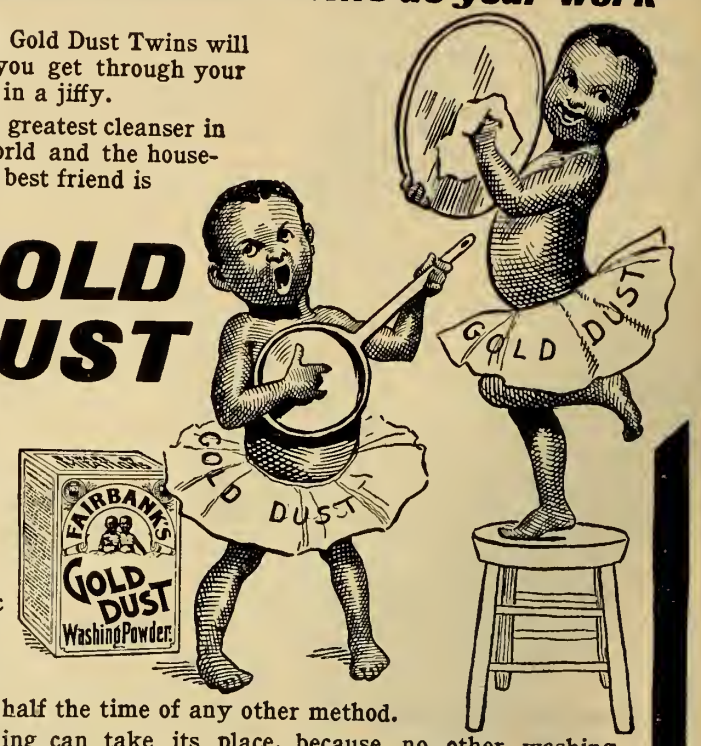

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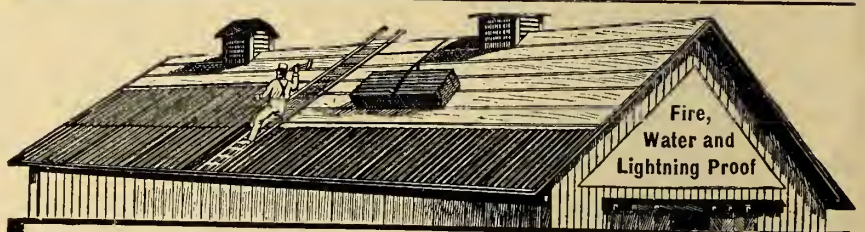

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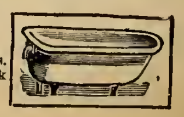

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A. J. Davis, Jefferson City, Mo., writes that peach buds are all killed; other fruits in good condition.

cutting away the galls and covering over the wounds with the remedies.

Results of Dipping Experiment and Sprinkling the Soil as Trees Were Being Set.

Formalin—All strengths from 10 per cent down to 1 per cent, inclusive, killed nearly all the trees. Galls not killed on the few trees remaining alive. Weaker solutions down to one-tenth of one per cent, injured many of the trees but the galls were apparently unhurt. By removing the galls and applying the formalin directly to the wounds

Fig. 3.—Enlargement caused by root outgrowing the scion. Tuft of fibrous roots above shows presence of a gall.

only, the trees were, in most instances, injured, but the galls grew again.

Bluestone—Dipping roots in bluestone, as well as sprinkling the soil about the trees with the material in all strengths from 1 lb. to 8 gal. of water, down to 1 to 75 gal., killed all of the trees. From 1 to 100 down to 1 to 300 injured the trees more or less. Galls on all living trees. Where the galls were cut away and the solution applied to the wounds only, the 1 lb. to 8 gallons strength killed all the trees. Some few of the others were injured but the galls continued to grow.

Ammonia Water—Killed many of the trees, but was not as disastrous as formalin or bluestone. Did not stop the growth of the galls. Treatment of the

Fig. 4.—Red raspberry; galls on main and also on small lateral roots.

wounds with the strongest solution to be found did not prevent the galls growing again.

Corrosive Sublimate—Caused but little injury to the trees and did not kill the galls.

Ammoniacal Copper Carbonate Solution—In strengths of 1 to 100 to 1 to 250, killed most of the trees. Weaker solutions affected the trees to a slight extent. This material entirely stopped the growth of gals in some cases and in others seemed to retard it.

Copperas—Caused no serious injury to trees even where large wounds were made by removing the galls. The galls were very numerous.

Carbolic Acid—Killed or injured many trees, but seemed to retard growth of galls in some instances.

Hydrocyanic Acid—Was used only to apply to wounds. It killed most of the trees treated. The galls grew again wherever trees lived.

Potassium Dichromate—Was used only to apply to wounds. Nearly all trees killed. Galls grew on on uninjured ones.

Mercuric Cyanide—Killed all the trees.

Material Applied Only to Wounds Where Galls Were Removed.

Silver Nitrate—Applied to wounds only. Trees badly injured but in most instances galls continued to grow.

Gas Tar—Was used to paint over the wounds. Killed all the trees.

Coal Tar(Kerosene)—Killed most of the trees with strengths of 1 to 10 down to 1 to 100. Galls continued to grow on the live trees: The 1 to 10 and 1 to 25 on the wounds killed all the trees. Strengths of 1 to 50 and 1 to 100 on the wounds killed much of the gall, but injured some of the trees.

Sulphur—Mixed in the soil around the trees in quantities of 1 to 8 oz. per tree. Killed over half the trees, but seemed to preventh growth of galls.

Common Salt—In quantities of 2 oz. or more in the soil. Killed most of the trees, but where trees survived, did not prevent growth of gall.

Copperas, Bluestone and Lime—Mixed together and applied to the wounds. Was the best remedy of all for preventing a new growth of galls, although this was not entirely efficacious. Several trees were killed, either by the treatment or as a result of the large wounds made by removing galls.

Copperas and Lime—Used as a wash on the wounds, killed all the trees.

Sulphur and Lime—Used as a wash on the wounds also killed all the trees treated.

Roots of Trees Dipped in Water of a temperature of 140 degrees F. for 1 minute were killed. In water of temperature of from 100 to 129 degrees F., about half the trees were killed, but no galls were formed.

Treatment of trees while growing in the nursery resulted as follows: The soil was scraped away and the remedied applied to the galls:

Bluestone Solution — Of different strengths, ½ to 1 pint to a tree, did not injure either trees or galls.

Copperas Solution—Used as above, caused slight injury to the roots and also to the galls.

Common Salt—One-half to 5 oz. per tree, killed all trees.

Dry and Slacked Lime—From 2 to

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8 oz. per tree, injured both the galls and roots.

Dry Sulphur—One to 4 oz. per tree, gave no beneficial results inasmuch as it injured the roots wherever it did the galls.

Formalin in strengths of from 2 to 20 per cent and in quantities of ½ to 1 pint per tree, killed all trees treated.

Inoculation Experiments.

Galls are found on the apple, red and blackcap raspberry in Missouri, and on the peach in some other states. The peach galls used were procured from Ohio. It was desired to learn something of the contagious nature of the diferent galls and whether those on one species of plant would grow upon another. The different plants, apple, peach and raspberries, were grown in pots—some in sterilized soil and some not, and kept on beds of clean sand

Fig. 5.—Enlargements on small roots caused by wooly aphis. Small gall at top.

so that there were no chances for outside infection. Minced galls from one species would be placed in contact with the roots of all the other species. This was done with all three kinds of plants and the results are given below:

Apple trees inoculated with apple galls, 30 per cent were affected.

Apple trees inoculated with raspberry galls, 16 2-3 per cent were affected.

Apple trees inoculated with peach galls, 22 per cent were affected.

Peach trees inoculated with apple galls, none were affected.

Peach trees inoculated with raspberry galls, 37 per cent were affected.

Peach trees inoculated with peach galls, none were affected.

Red raspberry inoculated with apple gals, 72 per cent were affected.

Red raspberry inoculated with raspberry galls, 33 1-3 per cent were affected.

Red raspberry inoculated with peach galls, 40 per cent were affected.

Blackcap raspberry inoculated with apple galls, 26 per cent were affected.

Blackcap raspberry inoculated with raspberry galls, 71 per cent were affected.

Blackcap raspberry inoculated with peach galls, 3 1-3 per cent were affected.

From the above it would seem that raspberries which are nearly always affected with galls, should not be planted among either peach or apple trees.

Long and Short Root Grafts. Also Effects of Soil.

In the spring of 1903 an experiment was started to determine whether more galls are formed when the point of union between scion and root is near the surface of the ground than deep in the soil. Also if there is any difference in the extent of the gall in different soils.

For the above purposes 440 grafts were used, one-half of each variety having short roots—two to three inches long—with eight-inch scions, and the other half with long roots—four to five inches in length—and scions three to four inches long. These were divided into lots and half of each planted in clay soil and the remainder in loess soil on the Missouri River.

The following is a record of the trees affected with galls after one season's growth:

Ben Davis, long roots, clay soil, 76 per cent gall; loess, 33 per cent gall.
Ben Davis, short roots, clay soil, 25 per cent gall; loess, 87 per cent gall.
Jonathan, long rots, clay soil, 22 per cent gall; loess, 25 per cent gall.
Jonathan, long roots, clay soil, 14 per cent gall; loess, 37 per cent gall.
Gano, long roots, clay soil, 84 per cent gall; loess, 20 per cent gall.
Gano, short roots, clay soil, 14 per cent. loess, 16 2-3 per cent gall.
Grimes' Golden, long roots, clay soil, 72 per cent gall; loess, 29 per cent gall.
Grimes' Golden, short roots, clay soil, 75 per cent gall; loess, 35 per cent gall.
Northern Spy, long roots, clay soil, 38 per cent gall; loess, 17 per cent gall.
Northern Spy, short roots, clay soil, 34 per cent; loess, 17 per cent gall.
Senator, long roots, clay soil, 85 per cent gall; loess, 50 per cent gall.
Senator, short roots, clay soil, 71 per cent gall; loess, 53 per cent gall.

The conclusions of the matter from the data at hand must be that the gall develops best where the root is long, thus causing the point of union between the scion and stock to be near the surface of the ground. Especially is this true of the clay soil. In the loess soil there was more gall on the short grafts. In the aggregate there was far more gall in the clay soil than in the loess.

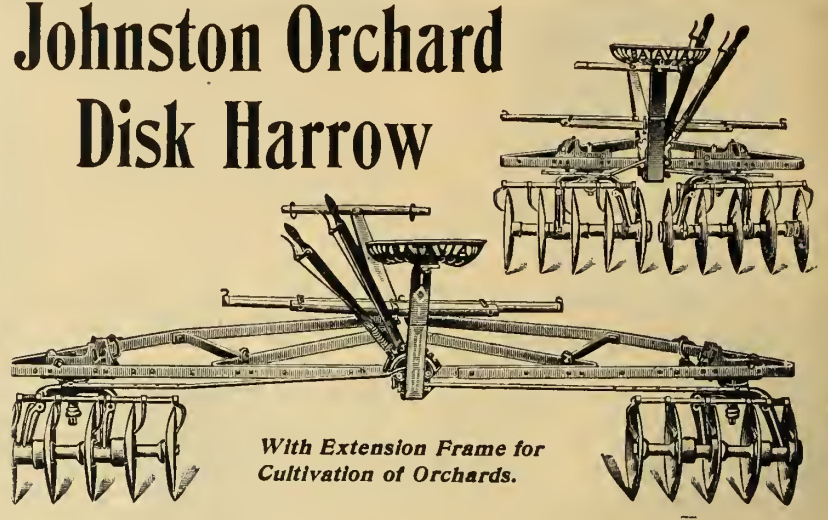
Losses in Manure.

Prof. W. Frear of the Pennsylvania Station has recently reported observations on the losses during two months of fertilizing constituents from steer manure kept under the feet of the animals in a box stall with cement floor and from that removed daily from stalls with hard clay floors and stored in a compact heap under cover, enough fine-cut litter being used in each case to apparently absorb all liquid manure. The results confirms those obtained by the Ohio Station, to wnich attention has already been called, in showing that manure loses much less of its fertilizing constituents in deep stalls than in heaps. In the Pennsylvania Station experiments the deep-stall manure was trampled to a very dark, compact mass, and although only about two-fifths of the dry matter of the food and litter was recovered in the manure there was very little loss of the valuable fertilizing constituents—nitrogen, phosphoric acid, and potash. With the manure kept in heaps one-third of the dry matter of food and litter was recovered in the manure and one-third of the nitrogen, one-fifth of the potash and one-seventh of the phosphoric acid was lost, the total money value of the losses being equivalent to $2.50 for each steer stabled for six months.

The untrampled manure, therefore, suffered more extensive losses of organic matter and nitrogen than the trampled manure, owing chiefly to the more complete exclusion of air in the latter case. It also experienced losses of phosphoric acid, and especially of potash, which can be explained, under the conditions of the experiment, only by the leakage of liquid manure into the earth floor of the stalls. Part of the loss of nitrogen doubtless occurred in the same way, but relatively less than of the potash, which was more soluble. Evidently manure can be kept almost perfectly, so far as the fertilizer constituents are concerned, by use of the first or "deep-stall" system. * * * Experiments show, however, that ammonia is lost very rapidly by such manure, if it be allowed to lie after the removal of the stock, without such covering as will retain the moisture and exclude the air.

S. A. Olney, Coleman's Falls, Va., in complimenting the Fruit-Grower, said he had tried to get information from Eastern journals as to the merits of the dust process of spraying, but they all seemed suspicious of it. Accordingly, he had to get his information from those "who have to be shown." And so he came West for his information

Johnston Orchard Disk Harrow



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The Apple Aphis, or Plant Louse.

Last spring apple growers everywhere were alarmed at the unusually large numbers of this insect which were present on the young shoots and tender twigs of apple trees. The pest will be readily recognized by every observer as being the small green louse which is found in colonies on the unfolding leaves of the apple, in early spring. The appearance of the leaves indicate the presence of this insect, the leaves being curled with the insects on the under side of the leaves. These insects belong to the class which suck the sap, and therefore are not killed by arsenical spray mixtures. Not often does this insect become sufficiently numerous to be a serious pest, but the last few years have seen a great increase in its spread.

The apple aphis has become so numerous in Idaho that the experiment station of that state has issued a bulletin by Prof. J. M. Aldrich, dealing with the insect and methods of combating it. Prof. Aldrich says there are two species of aphis on the foliage of the apple in Idaho; one is very rare, and is distinguished by its pink, red or purple color (Aphis sorbi); the other is the common green species (Aphis pomi). The latter is the one discussed in the bulletin. The bulletin has the following to say of the insect and its work:

"The eggs of this species are deposited in October and November on the young shoots of apple trees, usually near the tips. Occasionally they are found also about the forks of somewhat larger branches. When first laid, they are bright yellow in color, approaching orange, but they soon turn dark, and in a few days are shining black. On small trees, where the branches can be easily inspected, it is easy to recognize the eggs with the naked eye. Only a few of the trees which had aphis on in the earlier part of the season will be found to have any eggs on, and even when they do occur, it will probably be on only one or two twigs. Healthy eggs are smooth, plump and shining black, and can hardly be detected without a magnifying glass. It is not uncommon to find shriveled eggs, and sometimes the remains of small lice wil be found on the same branch, and these may more or less resemble the normal eggs; but a little experience will readily distinguish the latter.

"The eggs hatch about the last of April, while the young apple leaves are still very small, and just beginning to unfold. For some time, owing to the cold weather of that season, the young grow slowly; but before the leaves are fully grown, they may be covered with lice on the under side, and beginning to curl. The lice increase very rapidly, bringing forth living young at the rate of several a day, which themselves are large enough to repeat the process in a few days. There are no males at this season, all the individuals being viviparous females. Hence the rate of increase is enormous. Among those which are produced in the earlier part of the season, many have wings, which enables them to fly to other trees. May and June appear to be the season of spread; later they do not appear to attack new trees.

"There are numerous enemies of the apple aphis, which exercise a marked influence on its abundance. In almost every orchard where the aphis is troublesome, there seems to be a period of relief about midsummer. This is caused by the increase of those predaceous insects which feed upon the aphis. There are so many kinds of these beneficial insects that it would not be practicable to enumerate them in a brief bulletin.

"After increasing and spreading in the summer, as described, the aphis produces a generation in the fall of perfect males and females, which are small, yellowish insects, considerably different from the individuals produced during the summer. The females of this generation lay their eggs as described above.

"There is a very marked difference in susceptibility to aphis among different trees, even of the same variety. An occasional tree will be affected year after year, while surrounding trees will be exempt. More rarely one variety will be worse attacked than others adjacent; but I have not been able to make any reliable lists of resistant varieties. The difference seems to be mainly a quality of individual trees rather than of varieties.

"The damage to the trees is caused by loss of sap, which is sucked from the leaves and tender shoots by the aphis. When they begin work on a new leaf, it speedily becomes rolled up; as the insects are on the under side, they are on the inside of the roll, and well protected from sprays. There is some difference among the different known species of apple aphis in the extent to which they roll the leaves.

"Remedies.—This naturally would divide itself into two branches; remedies to desttroy the eggs in winter, and those to destroy the active stages of the insect at other seasons—or practically in early summer."

Prof. Aldrich first discusses the matter of destroying the eggs in winter. This has been tried but without success, Prof. Aldrich says, but it was determined to work somewhat along this line. An orchard was found in which were a large number of two and three-year-old trees on which eggs were found. These were marked so they could be readily found at the proper time. Before the buds were swollen in the spring the spraying was done. A number of different mixtures were employed in the spraying operations. Pure kerosene, crude petroleum, kerosene emulsion, and various strengths of lime and sulphur were used. The oil mixtures were not satisfactory, some trees having been injured. The formula which gave best results was one pound of lime, one pound of sulphur and four gallons of water. This was prepared as follows:

First slake the lime in the cooking vat. When slaked add the sulphur and enough water so that the mixture will stir easily. Keep it well stirred until boiling begins; boil one hour (Prof. Aldrich boiled the mixture two hours and a half). The mixture should then be completely dissolved, except for the impurities in the lime, and it should be of an amber color. Then add the requisite amount of water, or sufficient to make, with what was added in the first place, four gallons. Pour into a spraying tank through a strainer. In applying this mixture use rather a coarse nozzle and considerabe pressure.

The sulphur and lime mixture did not injure the foliage in the least, and the eggs did not hatch, except in a very few cases, and it is thought these were missed by the mixture when the trees were sprayed.

Prof. Aldrich is somwhat doubtful of the practicability of the winter spraying for orchard trees. If one can go over the orchard carefully and find the infected trees, and even the infected twigs, then this treatment promises good results. But in large orchards this is almost out of the question. The eggs are laid on a comparatively few trees, and on some of the twigs of these trees, and one will hardly care to spray an entire orchard to catch these trees. Summer spraying will doubtless be more practicable.

Kerosene emulsion is prescribed as a remedy, but there have been some experiments in Idaho which indicate that the quassia and whale oil soap solution gives better results. The greatest care must be exercised, however, in spraying for this insect, and the work must be very thorough, or the lice will get inside the curled leaves and will not be reached. They must be killed by the spray mixture coming in contact with them, and the most thorough work is necessary.

The quassia solution is made as follows: Take eighteen pounds of quassia chips; put in barrel and pour ten gallons of boiling water over them; let stand over night, or at least half a day; then pour off the water, heat it to boiling, and dissolve in it eighteen pounds of whale oil soap. Dilute this to make 180 gallons of water before spraying.

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Melon Growing at Balcom, Illinois.

From a small beginning some years ago the melon industry has grown to quite an industry. In this country we start the plants in hot beds and grow them till about the time the fifth leaf begins to make its appearance, and then we transfer the plants to the field after the danger of frost is over. We are the largest receivers of car lots of manure that I know of. We receive about one hundred and fifty cars annually. By the use of manure we can grow the finest cantaloupes on earth. We ship them in car lots to Chicago, Detroit, Pittsburg, and Milwaukee. We use refrigerator cars to all markets except Chicago. We pack in the Michigan climax basket and they sell all the way from one dollar and fifty cents down to fifty cents per basket. We put about one thousand in a car. I have known growers to realize four hundred dollars per acre and it is quite common for growers to realize three hundred per acre.

We plant the seed in small earth bands and we can get about four thousand five hundred hills in eighty feet of hotbed. On page ten of the January Western Fruit-Grower I see an article on Rocky Ford melons. I think we can knock those Rocky Ford fellows out in different ways. We come on the market about July the first and that gives us the best market obtainable. We don't have to irrigate the land, for we always have plenty of rain to make fine crops and never have a failure. This is not intended for a land boom. There is not any land for sale in this part of the country. The growers are all doing too well. The most of them have money in the banks, so you see that land is worth more than money. We can grow fruit here all right, too. Fine apples, peaches, pears and cherries grow to perfection. We grow cucumbers in car lots same as melons and supply the Northern markets with cucumbers as well as melons. Every thing is handled by the Association, except what dealers handle.

To succeed in growing melons, first in order are hot beds and location of the same. You should build your hot bed on a southern slope; it should be well protected on the north and northeast, so as to break the cold wind, and it should be built north and south, so that the sun could shine on the plants as much as possible. The furnace should be at the south end of the hot bed. You should excavate or dig out about two feet deep at furnace end of hotbed and one foot deep at the chimney end. This excavation should be six feet wide and eighty feet long. You then mark out your flues and dig them out with a spade about eight inches deep and just wide enough to work the spade in easy.

Your hotbed should be 5 feet, 9 inches in the clear in width. There should be 8 inches space between frame of hot bed and your flues on each side of hotbed so as to keep bed warm near the outside. The bottom of your flues should come half way down the furnace, so as to get good effect of heat from fire. The furnace should be on the outside of hotbed frame and should be 2 feet wide and 20 inches deep and 6 feet long. We cover flues and furnace with flat sand rock. You should put in good jams in furnace and then put in iron across the furnace, so as to hold up your sand rock over the furnace. You must make the dirt 13 inches deep or thick, over flues next to furnace end of hotbed and 8 inches thick over flues at chimney end of bed, then you will have uniform heat all over the bed. Then mix two wagon loads of manure in the bed. We than place in the dirt bands and fill them with good woods dirt or a compost of manure and dirt. We then fire up about three days before seeding.

As soon as ground is in order in the field, we break and harrow thoroughly. Then lay off your ground five feet apart each way, then put in a good fork full of manure, mix well together in hill, then set in your plants and hill up. Set your plants and as soon as they are large enough to plow and cultivate, you should cultivate with a 5-tooth cultivator, or what is generally called strawberry cultivator. You should cultivate as deep as you can, so as to have a good deep loose loam. They must be cultivated as soon after each rain as the ground will permit you to do so. Continue this cultivation until the vines begin to meet in the rows. But as the vines begin to run out from the hills, keep the cultivator a little farther away from the hills. At the same time hold your cultivator so that the plows next to the hills are not running so deep. This will keep the plows from tearing up the roots of the plants and you can cultivate more thoroughly. One hoeing is enough unless the season is wet. The plows on cultivator should be one inch wide.

I should have given instructions as to care of plants on the hotbeds. Great care must be taken in giving the plants air in the beds. Remember that pure air and sunshine are absolutely necessary for the plants. Sometimes the air is so brisk and cold that you can't expose plants to the air. In that case you can raise your canvas all along the low side of beds, giving plants just a litle air at a time. You must acclimate your plants. You do this by leaving them uncovered of warm nights as well as days. H. M. PLOTT.

Balcom, Ill.

Mulching for Apple Trees and Gooseberries.

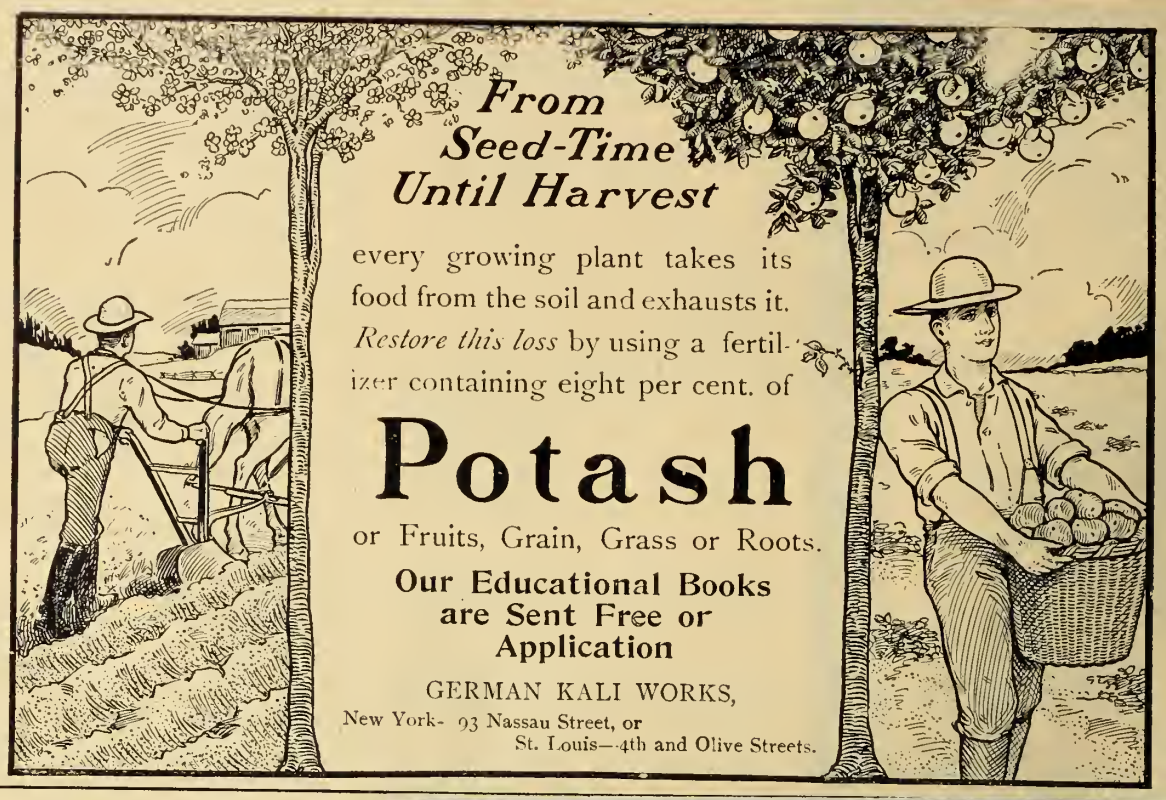
A correspondent recently sent to the Maine Agricultural Experiment Station the following questions which were answered by Professor W. M. Munson, as below:

"Is the waste from shingle mills ("shingle hair") a better mulch for apple trees than sawdust? Is there any objection to pine needles as a mulch for gooseberry bushes?"

Shingle edgings ("shingle hair") are excellent for mulching either apple trees or strawberry plants. As in the case of sawdust, it is better to use material that is not quite fresh; or take precautions so as to keep it from packing closely about the base of the tree. Sawdust is the most satisfactory material ever used at the Station as a winter protection and summer mulch for strawberries. It conserves the moisture effectively and is free from weeds.

The best mulch for gooseberries, as for other small fruits, is a fine dust cover provided by thorough cultivation. If for any reason this can not be given, I see no objection to the use of pine needles or the "shingle hair," referred to above. Chas. D. Woods, Director.

D. M. Thompson, Vanndale, Ark., reported on Feb. 19 that prospects were good for all kinds of fruits at that date. Mr. Thompson says he will test the Black Ben Davis-Gano apple for himself, having the two varieties top-grafted on same tree.



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Spraying Strawberries.

The successful fruit-grower must remember that spraying, like all other work, must be done at the right time and in the right way. He must know that it is a preventative and not a cure. I am now referring to fungi and I am a firm believer in Bordeaux mixture for all fungus growth in orchard or berry field and whenever it is done without good results and is traced down, we find it is in the fault of the operator in not starting the pump early enough and doing the work thoroughly. As soon as plants are set on our own farms the cultivators follow directly after the plant setters and the spray pump follows right after cultivators and the material used is Bordeaux mixture and paris green for any chance eating insect that might be prowling around for a free meal, and we don't object to going to a little trouble in preparing an extra good meal of paris green for them; the result is a collection of dead insects on the farm the next morning. The pump makes its regular trip every ten days from setting time till late in the fall or about November 1st. During that entire time the foliage is kept copper plated continuously, giving fungi no chance to exist. Heretofore I had to stop the machine when the wind blew hard as I was unable to do thorough work but found that much valuable time was thus lost; so I arranged a fan shaped apron that covers the entire parts of the sprayer and extends to the top of plants; thus the spraying is all done under cover and no matter how hard the wind blows the pump goes right along and every leaf is covered evenly with a perfect mist. My main object in spraying propagating and breeding beds continuousy through the growing season is to keep the foliage in a healthy condition, as these are the lungs and stomach of the plant and then the plant can digest its food thoroughly, which is absolutely necessary in order to build in it an ideal fruiting bud. A plant cannot attain proper development unless all the vital organs are in a healthy condition any more than an animal can.

Too much precaution cannot be taken in preparing the solutions especially when paris green is used. Take two ounces of the best unslacked lime to each ounce of paris green; pour boiling water on this and let it stand half an hour before diluting and the lime will neutralize the acid completely. At the time we put this in the spray barrel we prepare the same amount of paris green and lime for the next barrel, letting it stand till it is needed to use in the next trip. I never use London purple because it varies in strength. We always use liver of sulphur for mildew. This is used as an extra preventative at intervals of every two weeks. We think it is better for mildew than Bordeaux mixture and the two used separately makes us perfectly safe. I have never felt that it is always necessary for the berry grower to spray his fruiting bed, providing his plants had been thoroughly sprayed in the propagating bed and yet the fruit-grower cannot use too much precaution; but we rather encourage them to mow off the vines after fruiting season and burn the entire field over when a brisk wind is blowing in order to sweep the fire over quickly so as not to injure the crowns of the plants; this destroys all fungi and insects and the plants soon spring up into vigorous growth and the foliage is so bright and green that it looks as if it had been polished.

In making the Bordeaux mixture we make a stock solution, putting twenty-five pounds of blue vitrol in a gunny sack and suspending this in a barrel of fifty gallons of water, which it soon dissolves. Then we take twenty-five pounds of unslacked lime and slack this in twenty gallons of boiling water. Cover it up and let stand thirty minutes. Then fill the barrel up to fifty gallons; we then take eight ounces of lime and put four ounces of paris green over this, then pour one gallon boiling water on and let stand thirty minutes. Now we are ready to make our solution. This is done by first filling the spray barrel half full of clear water; then eight gallons of the lime stock solution, the entire four ounces of paris green and lime and keep pouring in water as we put these together so as to thoroughly incorporate them with the water and this must be done if you want to get perfect results. If it is not properly mixed it will curdle and will cause trouble in getting it through the nozzle of the sprayer. The whole thing is summed up in careful mixing, starting early and doing thorough work.

FRANK E. BEATTY,
Gen. Mgr. R. M. Kellogg Co.

STRAWBERRY SPRAYER AT WORK IN FIELD.
Courtesy Aspinwall Mfg. Co.

❦ ❦ ❦

John W. Beatty, Excelsior Springs, Mo., writes that while peach buds are mostly dead, other fruits promise well, except strawberries, which crop may be cut short by the fact that so many plants fruited last fall.

❦ ❦ ❦

"The January number is the best fruit paper I have ever received, and is well worth the price of a year's subscription."—A. G. Bonham, King City, Mo.

❦ ❦ ❦

Here are the best things advertised in this issue: Spray pumps, on page 2; Disparene, on page 7; dust sprayers, on page 28; seeds, on pages 11 and 15. Missouri Valley Seed Co., headquarters, St. Joseph, Mo.

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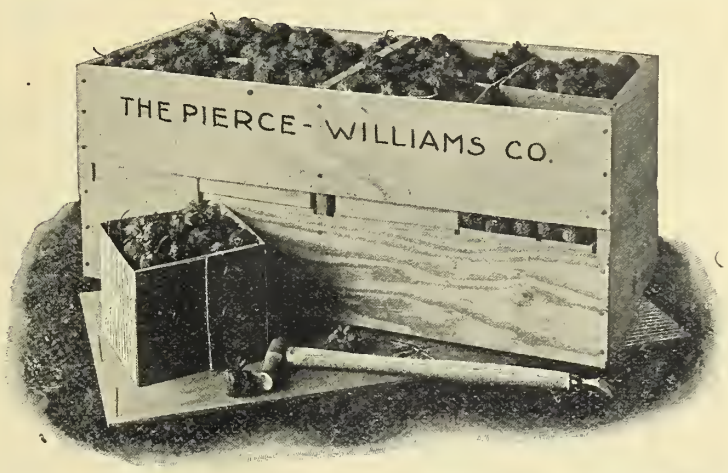

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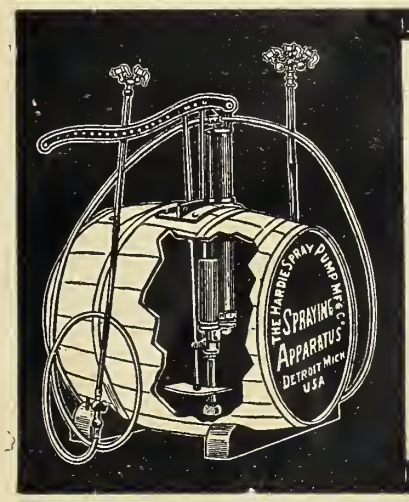

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Fighting the Codling Moth

A special number of the Fruit-Grower which was devoted principally to the subject of spraying would be incimplete without an article on codling moth and its work, for of all the insects which trouble the apple grower this is perhaps the most expensive. Indeed, Farmers Bulletin No. 171 of the United States Department of Agriculture says this insect causes a greater loss than all other fruit insects combined. The facts contained in this article are taken from this bulletin, and although they have been published in the Fruit-Grower a number of times before, as is the case also with the article on the canker worms, these subjects need to be discussed at regular intervals, because so many new subscribers have been added to our lists.

The bulletin referred to says that it has been estimated that from one-fourth to one-half of the apple crop of the United States is either totally ruined or materially injured by this insect, but that by the use of the best measures of control the larger part of this loss could be prevented, as many apple growers in badly infested regions are saving 85 to 98 per cent f their fruit each year.

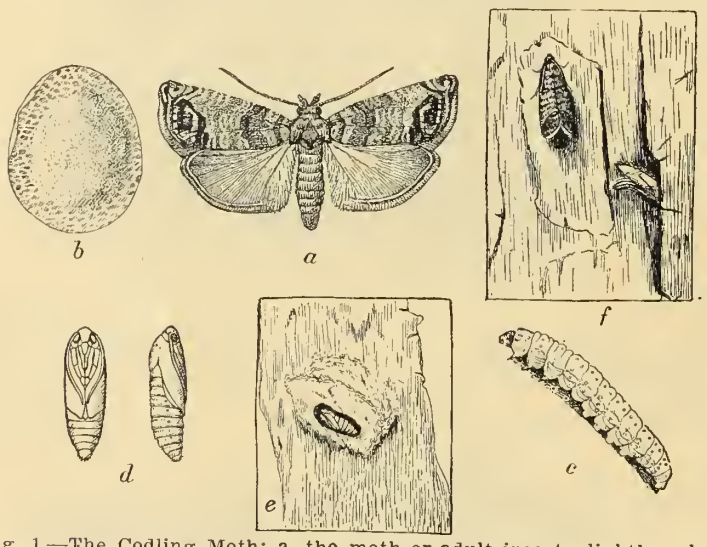

Fig. 1.—The Codling Moth: a, the moth or adult insect, slightly enlarged; b, the egg greatly enlarged; c, the full-grown larva, slightly enlarged; d, the pupa, slightly enlarged; e, the pupa in its cocoon on the inner surface of bark, reduced about one-half; f, moth on bark and empty pupa skin from which it emerged, about natural size (original). (Simpson, Bull. 171, Div. of Entomology, U. S. Dept. of Agr.)

The original home of this insect was most probably in southeastern Europe—the home of the apple. It has followed closely the distribution of the apple until it is now found in almost every country in the world, and is injurious in every apple-growing section of any importance in the United States.

It is spread principally by the shipping of infested fruits. When the fruit is picked and packed the young larvae are often inside, and when they complete their development they crawl out of the fruit and spin cocoons. When the moths emerge they fly to the nearest orchard and deposit their eggs. When orchards are but little distance apart the moths fly from one to another. The system of returning empty boxes in which apples have been sent to market has, in many localities, hastened the local distribution.

The apple is the natural food of this insect and sustains almost all the loss occasioned by it. In most localities the Winesap and Lawver apples are usually less attacked than other varieties, while the Pewaukee and Ortley varieties are usually badly attacked.

Life History of the Insect.

A good knowledge of the life history of this insect is the first essential to its control. Every fruit-grower should familiarize himself with its different stages by studying the insect in his own orchard.

The codling moth passes the winter in the larval stage. The larvae may be found encased in silken cocoons in cracks and holes in the trees and in houses where apples have been stored. In the spring these larvae change to pupae, from which the moths emerge about a week after the apple is in blossom.

The adult insect or moth (Fig. 1, a) is but little known among fruit growers and other moths are often mistaken for it. It varies somewhat in size, but the maximum spread of its wings is about three-fourths of an inch. The front wings are of a brownish-gray color and are crossed with lines of gray scales, giving them the appearance of watered silk. At the tips of the wings there is a large brown spot, in which are many scales of bronze or gold. The hind wings are grayish brown in color. Taken as a whole, the coloring of the moth is such that when resting on old grayish bark it is so like the bark that it is not easily distinguished.

The eggs of this insect were never noted until within comparatively recent years. They are of a pearly white color and are like thin convex disks. Around the edge there is a coarse network of ridges, while toward the center these ridges are finer.

A red ring which indicates the embryo, appears in the egg a few days after it is laid. In about eleven days (varying somewhat with temperature) the young larva breaks its way out of the shell and seeks to enter the fruit.

This is the mast important stage of the insect, for not only does it do its injury in the larval condition, but that is the stage in which it is most amenable to remedial measures.

Recent work tends to show that a large number of the larvae which hatch from eggs deposited on the leaves eat small portions of the leaves before finding fruit. The larvae have some difficulty in entering the smooth sides of the fruit; hence they usually enter at the calyx or take advantage of some irregularity in the surface. About 80 per cent of the larvae of the first generation enter the fruit by way of the calyx, while the majority of the second generation enter at the sides, especially where fruits are touching. Upon entering the fruit, the larva feeds immediately under the surface for a few days and then commences a tunnel toward the center of the fruit, where it eats out a large cavity. Frass and exrement which are thrown out characterize a wormy fruit. The larva, which is well known to all fruit-growers, lives in the fruit about twenty days and grows pinkish or whitish, until it is about five-eighth of an inch in length (fig. 1, c), when, being full grown, it makes a tunnel to the outside of the fruit, the entrance of which is filled with frass and silk. When ready to leave the apple this plug is taken out. The larva then crawls out and immediately seeks a place in which to spin its cocoon.

The places of spinning the cocoon vary with the surroundings. Cocoons have been observed in the following places: In holes and cracks in the trunks and branches of the trees; under rough bark; in the fruits (though rarely); in the cracks in the ground around the tree; on or between the clods among the fallen fruit; under bands or anything else resting on or against the tree; in cracks and angles of the walls and roof of the building in which apples are stored; under shingles of buildings near apple trees; in fence posts and under pickets of near-by fences; in paper or other rubbish on the ground; and in various other places. The cocoons of the first generation are composed entirely of silk, while in those of the second generation are incorporated bits of wood and bark. The larvae inside the co-

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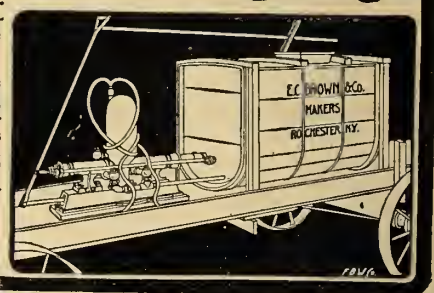

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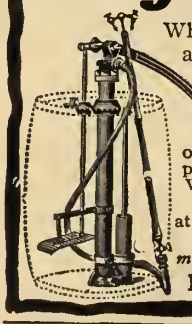

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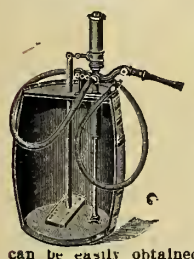

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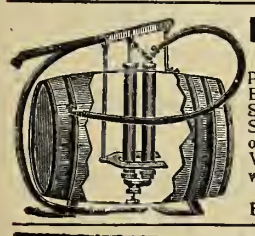

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coons transform into pupae in about six days from the time of spinning the cocoon.

The pupa (fig. 1, d) is yellowish at first, but changes to a brown, and later to a bronze color. The eyes, antennae, mouth parts, wings, and legs of the adult insect are apparent. The movable abdominal segments are armed with two rows of spines. In about twenty days from the spinning of the cocoon the pupa, aided by the spines, pushes its way out of the cocoon. The pupa skin splits and the moth emerges (fig. 1, f), lays its eggs, and gives rise to another generation. The average life cycle of the insect is about fifty days.

It has been found that in the principal apple-growing sections of the northern part of the United States the insect has one generation and often a partial second. In the warmer portions of the East and the West two generations are found. In the warmest parts of the West a partial third generation has been distinguished. Where two full generations occur the second is much more numerous and destructive than the first.

Measures Used Against the Codling Moth.

The first essential in using measures against this insect is for the apple grower to familiarize himself with its life history. By doing this he is better prepared to understand the remedial measures recommended, and can modify them to suit his local conditions.

The means of control readily fall into two divisions—(1) preventive measures and (2) remedial measures.

Preventive measures are those means of control which are not only efficient against this insect, but are valuable in increasing the productiveness of the orchard, and the size, appearance and quality of the fruit.

The preventive measures to be used in an orchard that has just come into bearing are quite different from those required in one that has borne fruit for many years. The old neglected orchards are familiar objects in every section of the United States.

Many farmers who have orchards which are old and neglected, believe that the only thing to be done is to cut down the trees and start new orchards, instead of renovating the old. These orchards can be restored quite easily and made to produce profitably for many years. Work should be begun late in the fall or early in the spring, and the treatment should be about the same in both cases, except that the far Western orchard should be irrigated freely, and every second tree should be cut out. In both orchards the soil should receive a very shallow cultivation for a year and a dressing of manure. The following year cover crops, such as cowpea or red clover, should be sown and plowed under, and this should be repeated every few years. Branches should be cut out where they are matted together, thus allowing access of the sunlight and spraying solution. In the West a thick foliage is often an advantage in protecting the fruit from the sun and thus avoiding sunburn. The dead branches and stubs should be cut away and burned. It is highly important that the cut ends be smooth and dressed with shellac varnish or grafting wax. All of the rough bark should be scraped from the trunks and larger branches. The holes in the tree should be filled with plaster or cement, thus confining all larvae that are in them and preventing others from entering later in the season.

If proper attention is given an orchard when it is young, no such work will be necessary.

If a young orchard is to be planted in a badly infested locality, this insect must be considered from the very first if any degree of success is to be achieved. The question of varieties is largly a question of climate, soil, and the demands of the market. The Winesap and Lawver varieties are always resistant to this insect, and the Ortley and Pewaukee are always badly infested. Late winter varieties are usually less infested than the fall varieties, and in some sections of the country the early apples are harvested before the second generation of the insect attacks the fruit. The trees should never be planted nearer together than 30 by 30 feet in order that a spraying machine and wagon may have plenty of space between the rows. The pruning of a tree when it is young is of the utmost importance. If the tree grows too high it is difficult to spray when it is full grown; if too low the branches lie on the ground and the same difficulty occurs. It is expensive to pick the fruit from high

Fig. 2.—Large apple tree properly banded for the codling moth (original). (Simpson, Bull. 171, Div. of Entomology, U. S. Dept. of Agr.)

(Continued on page 26.)

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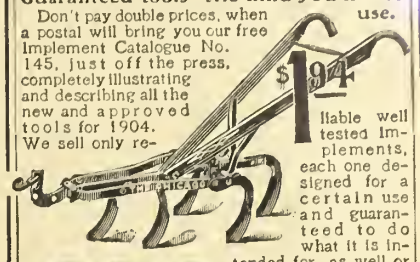
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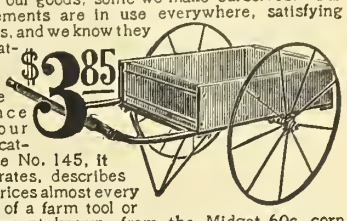
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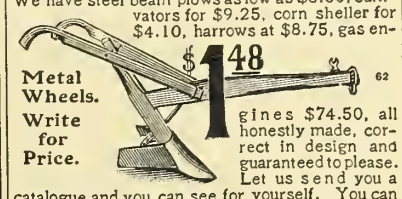
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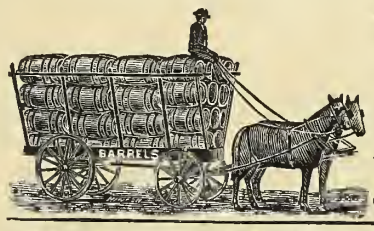

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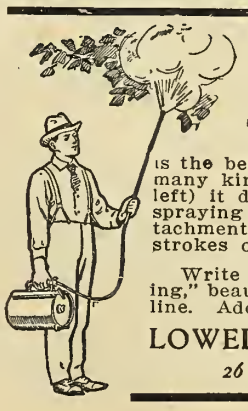

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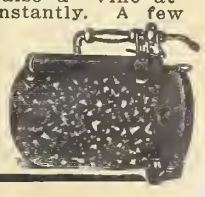

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Questions and Answers

(A number of queries were held over for our April issue and the answers will appear next month).

—

To Keep Cider Sweet.—I noticed a question that was asked in the Kansas fruit-growers meeting, as published in the January issue of the Fruit-Grower, that I thlnk ought to be answered. It is "How to make a good quality of cider and keep it sweet." Here is the way to do it: Select a good quality of cider apples, press out the juice and put in a granite or porcelain pan; put over the fire and keep it well skimmed till it reaches the boiling point, then can up in air-tight fruit cans or beer bottles (we use the latter), using sealing wax or parafine for making bottles air-tight. Cans or bottles should be kept in very warm water ready for use when cider is ready to put up. A good quality of cider can be made this way and will keep perfectly sweet just as long as you desire to keep it, if seal is unbroken. And for colds or la grippe it is excellent.. —W. C. Boynton.

—

The Mammoth Pippin Apple.—Replying to the query of W. T., Mo., on page 48 of January issue, we would say that we have the Mammoth Pippin or Shannon which with us is a strong grower, but of a spreading, willowy habit of growth. Bears early and abundantly of large yellow apples of fine flavor. About the season of Huntsman and as large, but not nearly as bright in color. A much better apple to our taste than Huntsman, but not so good a keeper. It is nearly always spotted with small spots just under the skin and sinking into the flesh, which look as though they were rotten, but do not taste bad. This injures its sale, but for a family apple of good quality we can recommend it. —John Brazelton & Sons, Wathena, Kan.

—

The Brewers' Seedling Apple—On page 20 of last issue, W. M. P., Allendale, Ill., inquires about "Brewers' Seedling" or "Coffey Indian" apple. I have never heard of it. Downing describes a "Brewer" as "very large, roundish, yellow, with slight blush," but the season is October and November, whereas W. M. P. says the apple may be kept till April—perhaps he refers to cold storage, but I judge not and if not, probably they are distinct. Downing says it comes from Massachusetts. It is seldom that an apple variety has a later season here than in Massachusetts, yet it is not impossible. —Benj. Buckman, Farmingdale, Ill.

—

S. A. Meriden, Kan.—Please describe the Stayman Winesap apple, and tell in what way it is an improvement over the old Winesap, if it is any better.

Answer by E. J. Holman, Leavenworth, Kan.—I submit the following in answer: Dr. Stayman sent out three seedlings of the Winesap, designating them as Nos. 1, 2 and 3. That sent out as No. 1, the best of the three, is now properly known as Stayman. The fruit runs a better size, though lighter colored, while the quality is equal, if not superior, to the old Winesap. In growth of tree, it is much better in every way, being strongly rooted (the old Winesap always lacked a good root system) and one of the very strongest vigorous growers, maintaining the productive character of the parent tree.

—

G. A. B., Chicago.—Will you please give me a llst of fruits which ripen, say from June to September, in Wisconsin? Will want the latest of the early varieties and the earliest of the late sorts.

Prof. A. T. Henry of Wisconsin Experiment Station, replies: "It is hard to answer this question, as location is not given. The fruits mentioned below have generally proven satisfactory for our state, however:

Apple: Tetofski, Oldenburg, Yellow Transparent; plums: Wyant, Rockford, Surprise, Aiken; blackberries: Briton, Snyder; raspberries: Loudon, Cuthbert, Marlboro; currants: North Star, Fay's Prolific; gooseberries: Houghton, Downing; cherries: Early Richmond, Early Morello; grapes: Moore's Diamond, Worden, Concord, Brighton.

—

H. H. H., Osceola, Neb.—(1) What plum is best to plant to fertilize the Miner? (2.) If budded peach trees are planted next a row of seedling trees will it make any difference in the fruit on the budded trees? (3.) Why do nearly all nurserymen charge so high for dewberry plants, is there a difference in propagating so that the cheaper plants are not so fruitful.

Answer, by Dr. Whiten: (1.) In our section of the state the Miner plum has shown itself to be capable of self-fertilization. The Newman is a strong pollinated variety , however, which blossoms about the same time and will fertilize the Miner. (2.) If budded peach trees are planted near a lot of seedling trees, the presence of the seedling fruit will not make any difference in the quality of the budded fruit. The kind of pollen used in fertilizing a flower does not control the character of the immediate product. It does, however, influence the character of the seeds and of the tree which would be produced by the seeds of that cross pollinated fruit. (3.) The comparatively large demand and the price of production is what governs the price of dewberry plants.

—

W. E. W., Pleasant Hill, Mo.—(1.) I am figuring on putting in five acres of berries this spring, and wish you would help me find information relative to the enterprise by answering the following questions: What is the vaue of irrigation here with berries (2.) Can the surplus fruit be evaporated here profitably? (3.) How much land can one man take care of, if he gives his whole time to it?

Answer, by Dr. Whitten: (1.) Berry growing, if properly conducted, should be successful in your section. (2.) Surplus fruit can be profitably evaporated, provided enough is grown in the community to make a place for itself on the market. (3.) If the third question means how much land can a man take care of himself alone, during the picking season of the fruit, of course he can take care of comparatively little. If it means how much can be cared for with a reasonable degree of help during the picking season, when much work is required on a small area, I should say that the most profitable fruit plantations that I know of in the state range from five to ten acres each. Five acres of mixed fruit will yield a man an excellent income if he puts the proper amount of labor and intelligent care upon it.

—

D. G. H., Iowa.—I have a pile of sawdust that is three years old; will it be good to mulch blackberries and raspberries? If so, when should the mulch be applied, and how deep shall I make the mulch?

Answer by Dr. Whitten: In a few cases sawdust has been applied to soils with good results, provided the sawdust was well rotted and the land was heavy enough that it needed loosening to the extent that sawdust would do. Generally speaking, however, sawdust (except hard wood sawdust, which is old and thoroughly rotted) is not a good dressing for tilled land.

—

R. G., Centerview, Mo.—I have a lot of trees from which rabbits have peeled the bark, even on trees six to eight inches in diameter. I had the small trees wrapped, but mice would run up and cut the cord and the paper wrappers that I used would come off, and then they played havoc. The pests also barked numerous large trees which I thought were safe from attack. What is best to protect these trees, and also to keep alive those which have been attacked? Will the latter be worth trying to save, where a large tree has considerable of the bark removed?

Answer by Dr. Whitten: In my judgment, the best tree protector against rabbits is the wood veneered wrapper, when we consider cheapness, efficiency and all. We are preparing to bridge graft over the wounds that have been made on the trees by rabbits. This can be done by inserting the scion so that growing layer of its lower end will meet the growing layer at the end of the tree below the wound; the growing layer of the tree and scion likewise meet just above the wound. The area surrounding the ends of the scion inserted at either edge of the wound should be thoroughly waxed with grafting wax. Scions for this bridge grafting should be taken immediately before their buds swell, but it will be best not to insert them until just about the time the buds begin to burst in spring.

—

E. C. B., Higginsville, Mo.—I have an orchard which has been out six years. Last fall I plowed under a crop of clover, intending to plant to

The Famous
Elberta Peach

Is the money-maker of the South. We now have two thousand acres planted to Elberta peach trees. We are on a high ridge of the Southern Slopes of the Ozark Mountains, protected from the Northeast to the Southwest by the mountains.

More Peach Crops than Any Portion of the United States

Are you raising fruit somewhere else? If so, stay where you are but buy a few acres in our great peach orchard. We will have a crop when yours fail. A few dollars a month will pay for it. One acre, five acres, ten acres earns as much per acre as five hundred acres. We deed direct to you the orchard you buy of us. We are practical wholesale orchard people and fruit handlers. If you are an expert orchard man, come in person and see our proposition and we are positive you will invest all the money you can spare with us. We are incorporated for $150,000.00; assets over $200,000.00. We refer to the Commercial Agencies or the Banks. Fully illustrated literature free.

Southern Orchard Planting Company

Room 20 Water Works Building *KANSAS CITY MISSOURI*

As a Leader and as a Rustler

For our Spring Trade, we will offer our

Ben Davis and Gano Apple Trees

at the following extremely low prices while they last.
Laid down anywhere in the states of ILLINOIS, MISSOURI, KANSAS, IOWA and NEBRASKA for

5 to 7 ft. $5.50 per 100 or $50.00 per 1,000.
4 to 6 ft. $4.00 per 100 or $35.00 per 1,000.
4 to 5 ft. $5.00 per 100 or $25.00 per 1,000.

Satisfaction guaranteed or no pay. No order accepted for less than $10.00. These trees are two years old, strictly first class in every way and as fine as were ever offered. Get our prices on general line of NURSERY STOCK, and partis living outside above states can get our rates on stock laid down by making inquiry.

Planters should take this matter up at once. Address

Jackson County Nursery Co., Lee's Summit, Mo.

ALFALFA Seed is our SPECIALTY—We also sell the Satisfactory kind of FARM SEEDS. Write for OUR Prices.
Ross Bros. Seed House, Wichita, Kan.

WE OFFER FOR 1904

$50 IN CASH PRIZES

FOR THE LARGEST AND FINEST

New Giant Excelsior Carnation

Raised From Our Seeds. Price Pkt., 100 Seeds, 10 cts.

$20.00 FIRST PRIZE
$15.00 SECOND PRIZE
$10.00 THIRD PRIZE
$5.00 FOURTH PRIZE

NO RESTRICTIONS This Contest Is Open to Everyone

All reports to be sent us not later than Nov. 1, 1904, when prizes will be awarded.

This new class of fragrant Marguerite Carnations will bloom in about four months after sowing the seed. The flowers are of brilliant colors, ranging through many beautiful shades of reds, pinks, white, variegated, etc., exquisitely sweet, and fully eighty per cent. perfectly double. **FREE,** our **1904 Catalog** of Flower Seeds of **Special Merit, That Grow.**

THE S. Y. HAINES SEED CO., Tompkins, Jackson Co., Mich.

Apple Orchard

We have just secured for sale one of the best Apple Orchards in the United States. It is located within a few miles of St. Louis. A tract of 2700 acres, 455 acres of which is in young fruit trees that will begin bearing this season. The owner has the Panama fever and will SELL.

We are organizing an underwriters' pool to purchase this fine orchard at a wonderful bargain; in fact, at about one-fourth of its true value. All subscribers to this pool may become bondholders in a company organized to handle this proposition, or may have the money returned to them with large profits when bonds are sold by the company. Write us for full particulars.

American Realty and Finance Co.

Frisco Building

ST. LOUIS, MO.

CHEAP PEACH TREES

The old reliable **Morris Nurseries** of West Chester, Pa.

Offer a lot of fine grown Peach Trees, which have been scarred somewhat by hail, which does not hurt their growing, but only mars their looks, and therefore are offered at low prices. It is an opportunity to buy Peach Trees very reasonable. Write how many you need and get prices. Orders can be booked any time now for spring shipment. The trees will be carefully packed so as to reach their destination in good condition.

GEORGE ACHELIS,
West Chester, Chester Co., Pa.

$100 to $300 PER ACRE

For the fruit of a seedling peach. How is that? That is the Conover, an extra hardy peach that comes true from seed. Large, white fleshed, freestone, fine quality, only one failure to bloom and set fruit the last nine years, seven full crops. Two year old trees 25c each, $2.50 per dozen.

Ben Davis apple 5 to 7 ft., $7.50 per 100. A general line of other trees cheap. Send for catalogue.

A. L. Zimmerman, Weatherby, Mo.

Strawberry Plants

WE HAVE THEM — WE HAVE THEM

500,000 Aroma, $1.50 per 1000; Lady Thompson, $1.30; Michel's Early, $1.25; Excelsior, $1.25. If you need anything in the plant line it will pay you to write me. We have been in the business 20 years.

J. A. BAUER
R. F. D. JUDSONIA, ARK.

Strawberries

450 PLANTS FOR $1.00

Strong plants from new beds; no trash; well packed. 300 Crescent and 150 Bederwood; or 300 Warfield and 150 Dunlap—most productive kinds grown.

J. F. DAYTON, Waukon, Iowa

The McPike Grape

Don't Be Fooled Again.

Send to headquarters for genuine McPike vines. The largest, hardiest, most delicious and most prolific grape known.

Edwin H. Riehl, North Alton, Ill.

Surplus Peach & Apple Trees

At one-half wholesole prices; also strawberry and black raspberry plants cheap. Wanted, 200,000 B. B. root cuttings.—**SELIGMAN (MO.) NURSERY.**

corn this spring. Is this the best treatment? The soil is good. I left a strip in the tree row that I cannot get with a plow on account of the limbs; what is best to do with this strip, disk it crosswise, or leave it solid? Trees are planted 24 by 35 feet.

Answer by Dr. Whitten: If the soil in the orchard mentioned is rich, a corn crop may be grown in it without injury to the trees. It would be better to disc out the sod land under the trees where the plow could not be worked, in order that the soil may be kept in good cultivation during the summer. With such a tool as a good disc, or beter yet, Clark's Cutaway Harrow, one could cultivate right up under the branches of the trees close to the trunk without actually driving the horses under the low limbs.

—

G. L., Pittsfield, Ill.—Please tell me what is the matter with the inclosed twing.

Answer by Dr. Whitten: It is impossible to say what caused the discoloration on the peach twig. As the growing layer beneath, however, is uninjured, it is safe to say that these spots are not of a serious nature.

—

J. C. McW., Choctaw, Okla.—Inclosed find twigs of apple trees, with knots on them; what has caused this? (2) Are there any special commercial fertilizers prepared for fruit trees or young orchards? If so, what kind are they, and when and how are they applied? My soil is sandy, with a clay subsoil, and is thin; trees are making only moderate growth with good cultivation. Trees have been planted one, two and five years.

Answer by Dr. Whitten: The cause of the knots on the apple trees is not known. These enlargements, however, frequently occur on trees of fruiting age just at the bottom of some of the clusters of blossoms. They are not a cause for alarm. The eggs lying in two straight rows along the third twig are those of the common green winged katy-did. (2) Any of the commercial fertilizers may be used on orchards. As a rule, where commercial fertilizers are to be used in an orchard, the potash and phosphoric acid fertilizers should predominate. You will undoubtedly be able to improve your orchard soil, however, by growing cow peas among the young trees, allowing them to remain on the soil over winter and plowing them under the following spring. If you wish to try the commercial fertilizers, however, I would recommend about such a mixture as 50 pounds of nitrate of soda, 50 pounds of plain super-phosphate, 100 pounds bone meal per acre. Growing cow peas for a green fertilizer will be cheaper, however.

—

T. M. W., Charlotte, Ark.—(1) Will two pounds soft soap, four pounds lime, four gallons water, made into a whitewash and put on peach trees from ground up on biggest limbs hurt the trees, put on with a broom. (2) How strong must such a whitewash be made for best results to keep trees smooth and clean. (3) How should I prune 2-year-old grape vines? They have made a good growth of 15 feet. I have 5 wire vines run on in fan shape. (4) How close can I plow to grape vines so as to not damage vines? Will cow peas sown in grape vines first of August help them any or damage them? (6) Will plum trees bear pruning and cultivating, same as peach trees? (7) Which is the best peach Mammoth Heath or Heath Cling, for market?

Answer by Dr. Whitten: (1) The tree wash mentioned will not injure the trees. The wash should be thinned only sufficiently to enable the operator to put it on conveniently with a brush. (2) If by two year old grape vines the means that the vines have been planted in the permanent nursery two years and have made 15 feet in growth, it might be safe to cut back the canes so as to leave one about 2½ feet long on one side to bear a little fruit, and cut the other cane off the opposite side down to a short spur containing two or three buds. (4) As to how close to a plant or how deep a man should plow in a vineyard depends wholly upon the soil and the character of rooting of the plant in that soil. It would be safe to plow as near the plant as one can without cutting off many of the main roots. In certain soils where the grape roots near the surface, it would not be possible to use a turning plow close to the vine, unless it were run very shallow so as not to cut off the roots. (5) Cow peas sowed in the orchard about the middle of July will, in the long run, benefit the grape vines. On the station grounds we have been practicing this in a certain section of our vineyard for years and the vines are improved by the presence of the cow peas. (6) Plum trees are improved by cultivation and judicious pruning. (7) The Heath Cling is one of our best cling-stone peaches for this section. I am not acquainted with the Mammoth Heath.

—

J. S. H., Hale Center, Texas.—I would like to know what is causing the injury to inclosed apple twigs. These twigs were cut from four-year-old trees, and the trouble seems to be gaining ground. Please advise me what it is, and how I can combat it.

This was referred to Dr. Whitten, who replies:

"These twigs are different from anything I have seen in the way of diseased twigs. I found no indication of fungus about it and suspect that the roughness of the bark is due to the twig being of a variety of apple that is not well adapted to the hotter climatic conditions of the far south. I believe it would pay the correspondent to send a specimen to the Texas Experiment Station, College Station, Texas. They will no doubt be acquainted with it if it is due to climatic influences. If it is not that, and the correspondent will send us some fresh samples of twigs, directly here, packed in a litle wet moss, so they will not dry out, I will be glad to do some work with the fresh specimens to determine if possible what the trouble is."

—

S. B., Huntington, Ark.—Inclosed please find pupae or eggs of insect found on my fruit trees. What insect is it, and is it harmful or beneficial?

Answer by Prof. Stedman: The specimen which you sent is a batch of eggs laid by the Praying Mantis. This is a very beneficial insect and the egg patches should be preserved so as to allow the insects to hatch out and help you in destroying the injurious ones.

—

J. C. McW., Choctaw, Okla.—What are the inclosed insects which I found on my fruit trees?

This specimen was the same as one sent by S. B., Huntington, Ark. See Prof. Stedman's reply thereto, above.

—

J. A. N., New Columbia, Pa.—I incose a peach twig which is infested with some kind of scale. What is it, and what the remedy?

Answer by Prof. Stedman: The peach twig enclosed by the above is infested with the San Jose scale. I would advise him to take the matter up with the state entomologist of Pennsylvania as the remedies for this insect differ in the East from what they do here.

—

L. K., Rolla, Mo.—What is the best thing to do with an apple orchard of 1,000 trees, twelve years old? Should it be given shallow cultivation and then seeded with small grain of some kind? The ground was not worked last year and no pruning has been done for two years. Would you advise seeding down to clover and let it remain so for a few years?

The orchard should not be seeded to small grains of any kind. If you do not want to give clean and thorough cultivation, the orchard can be seeded down to clover, as suggested.

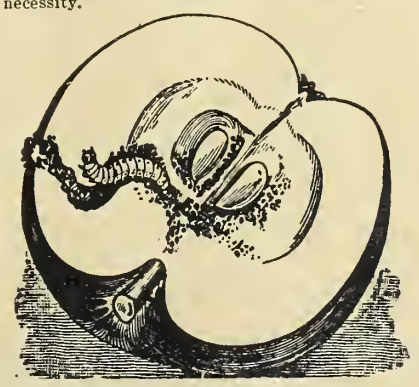
—

W. R. T., Meriden, Kan.—The leaves on some of my apple trees died last season. The injury was worst on the inside of the tree, Winesap being par-

(Continued on Page 32.)

Spraying Fruit Trees.

The question of spraying fruit trees to prevent the depredations of insect pests and fungus diseases is no longer an experiment, but a necessity.



Our redaers will do well to write Wm. Stahl, Box 6, Quincy, Ill., and get his catalogue describing twenty-one styles of Spraying Outfits and full treatise on spraying the different fruit and vegetable crops, which contain much valuable information, and may be had free.

Warnock's Tree Paint

Has come to stay for all time. Scientific truths are eternal. It has come to bless the orchardist. It has come to do **its important part** in marking a new era in fruit-growing. **Its part** is to protect all fruit trees from the roots to the smaller branches from the attacks of all animals and all insects that bite and from all insects that suck the sap. It is a liquid armor. It is an insecticide. It stays where it is applied. Rains will not wash it off. It will not evaporate. There is no water in it. It is impervious to water. One application protects for longer time than three years. It has been on the market locally for almost four years. Since early in the fall of 1903 we have been selling

Warnock's Tree Paint

In Missouri, Iowa, Illinois, Kansas, Nebraska, New Mexico, Arizona, Arkansas, Indian Territory, Oklahomo, Oregon, Washington, Wisconsin, Minnesota, Indiana, Ohio, Pennsylvania, West Virginia, Alabama, Tennessee, Georgia, Texas, Kentucky, Colorado and Mississippi.

During the years we have been selling our paint we have heard nothing but commendations from our customers. Our patrons read our advertisements. We will pay $100 for each and every complaint that has been sent us up to date, Feb. 26th, 1904.

Our contention is that Warnock's Tree Paint is the best protection for fruit trees that is on the market. Also it produces a smooth bark and a healthy growth where conditions are favorable.

For circulars giving full particulars write

R. WARNOCK & COMPANY
WESTBORO, MO.

Please mention Western Fruit-Grower.

BEE KEEPERS!

We have three carloads of Higginsville Aparian Supplies in stock, which we will furnish at factory prices, saving freight from factory to Kansas City.

Special prices furnished on large orders. Correspondence solicited. Catalogues furnished on application. Advise ordering early.

Walker-Brewster Grocer Co
Wholesale Fruit and Produce
403-5 Walnut Street, KANSAS CITY, MO.

Trees! Trees!

WE OFFER 200,000 FIRST CLASS

June Bud Peach Trees

At special prices to reduce surplus stock. Trees grown on fresh new land. Stock very fine, vigorous, healthy and true to name. Can give the best qualities and grades in June Bud Peach Trees ever offered for the price. Elberta, Bell Georgia, Carman. Dormant buds, 75c per 100, $5 per 1,000. June Buds, 2-6 in., 80c per 100, $6 per 1,000; June Buds, 6-12 in., $1.50 per 100, $10 per 1,000; June Buds, 12-18 in., $2.00 per 100, $14 per 1,000; June Buds, 18-24 in., $2.25 per 100, $16 per 1,000; June Buds, 2-3 ft., $2.75 per 100, $20 per 1,000. Nurserymen and dealers write us for prices on list of stock in quantity wanted.

CHICKAMAUGA NURSERIES
Chattanooga, Tennessee

THE WAY TO SPRAY

THE HIGHEST FRUIT TREE FROM THE GROUND
Without Ladders or Extension Rods, is with

The Standard Spray Pump

It throws spray with great force, and ten feet higher than any other pump, and is operated much easier.

It is made entirely of brass, the valves being brass balls in brass seats. No solution can affect it. Has no equal as a bucket sprayer; as a BARREL OUTFIT one man does the work of two, and in less time. Cannot cause trouble.

GUARANTEED by us for five years; will last a lifetime. Is always ready for use.

If you have read this far, you are interested, and we want to tell you more about the Standard. A valuable spraying calendar FREE. Send dealer's name. Most dealers handle them. Made by

THE STANDARD STAMPING CO., MARYSVILLE, O.

Please mention Western Fruit-Grower.

Spraying Materials

Blue Vitrol, Paris Green, Arsenic, Arsenate Soda, Carbonate Copper, London Purple, Oil Soap, Acetate Lead. For sale by

WHITELAW BROTHERS
ST LOUIS, MO.

A Home for $600

We publish a booklet telling how to build it yourself without architect or carpenter. Also two other houses at $800 and $1,200. Complete plans and specifications. Every detail of construction clearly explained. Also tells how to furnish 6 rooms complete with good grade furniture for less than $200. A very interesting and instructive book. Will be packed free with orders if requested or mailed on receipt of three 2-cent stamps. 60

Address Adv. Mgr. **Montgomery Ward & Co.,**
Michigan Ave., Madison and Washington Sts., Chicago.

Please mention Western Fruit-Grower.

Observation on the Apple Scab.

At the recent meeting of the Northwest Fruit Growers' Association, Prof. A. B. Cordley, entomologist of tne Oregon Experiment Station, gave an interesting informal address on the apple scab. He gave a brief account of what the Oregon Station dia last year in experimentation to ascertain to what extent scab can be prevented by spraying under Western Oregon conditions. The station orchard has been regularly sprayed for the past ten years, but no records have been kept as to results in preventing scab. Last year an orchard was selected for the scab-fighting experiment in a section which has long been very badly troubled with this affliction. A block of 400 Yellow Newtown trees was chosen for the test, as this variety is one which is specially subject to scab. The orchard had been neglected for many years. The work of spraying was done with an old and not very effective outfit, and one man and his two boys did the work. As nearly as possible the conditons were therefore those under which spraying would be done on an average farm in Western Oregon.

The first spraying was done April 30; second, May 15 to 19; third, June 1 to 3; fourth, July 1 to 3, and, fifth, August 15.

The last two sprayings were made chiefly to control the codling moth and arsenites were used with the Bordeaux mixture at all of the sprayings but the first two.

The second spraying was done under adverse circumstances between showers. The formula used was four pounds of lime and six of blue vitriol to fifty gallons of water.

As a check four trees were left unsprayed. At picking time two sprayed trees and two unsprayed trees were selected which were as near alike in size and situation as possible.

The two sprayed trees yielded 1,902 apples, of which 1,334 were free from scab.

The two unsprayed trees bore 2,117 apples, of which 151 were free from scab.

That is, 70 per cent of the apples on the sprayed trees were free from scab as compared with only 7 per cent on the trees which were not sprayed.

A specially noticeable result was the larger average size of the apples on the sprayed trees. In order that there might be no mistake the measuhements of the apples were made with calipers. Of the 1,902 apples on the sprayed trees, 1,147 were over 2½ inches in diameter and 755 were smaller than that.

Of the 2,117 apples on the unsprayed trees, 654 were over 2½ inches in diameter and 1,462 were smaller. That is, there was practically twice as much fruit of marketable size per tree on the sprayed trees as on the unsprayed trees.

Prof. Cordley said scab is caused by the summer or imperfect form of a fungus. Until recently botanists were unable to connect it with any winter or perfect form. It has recently been demonstrated that the perfect winter form passes the winter on fallen leaves and appears to have two periods of development; one in the spring and one in the fall. It therefore appears desirable to spray in the fall after the fruit is picked. Spraying in spring before the buds open does not seem necessary. If it were possible to destroy the leaves in witner without too much expense it woud be desirable. It is advantageous to turn them under by plowing in winter.

The first spraying for scab should be given when the leaves are starting to grow; the second when part of the blossoms have fallen, and the third when the apples are the size of marbles. The buds should be well opened when the first spraying is done.

Prof. L. F. Henderson, botanist of the Idaho Experiment station, said the subject of scab was a very interesting one to apple growers in Northern Idaho. They used to think they were exempt from scab by reason of climatic conditions, but the scab has come there and done much damage. The experiments carried on in fighting the scab by the Idaho station the past year were rather disappointing from the fact that in the orchards selected for tests the unsprayed trees were very slightly affected by scab, although the previous year not ten per cent of the apples had been free from the scab. Yet an orchard not far away from the place of test yielded a crop of which 90 per cent were scabby. He believed that the freedom of the orchard selected was due largely to the cultivation it had received, which placed most of leaves under the surface before germs had gone onto the trees. Prof. Henderson urged fighting the scab in its winter form, by plowing the leaves under, or if practical, burning them in winter. Warm, moist springs, such as prevail in Western Oregon, are most conducive to the development of scab.

The question was asked if spraying apples with Bordeaux mixture did not cause a discoloration or russetting of the fruit. Prof. Cordley said it does to some extent when the proportion of blue vitriol is large. In tests made under his observation when the formula of four pounds of lime and six pounds of blue vitriol to fifty gallons of water is used russetted apples will be found, but when the formula of four pounds of lime and four pounds of blue vitriol to fifty gallons of water had been used, no russetting had occurred.

Prof. Henderson told what the effect was in tests made at the Idaho Station to ascertain the effect of Bordeaux mixtures of various strengths and modifications in discoloring the fruit. The diferent combinations were:

8 lbs. blue vitriol, 4 lbs. lime.
6 lbs. blue vitriol, 4 lbs. lime.
4 lbs. blue vitriol, 4 lbs. lime.
6 lbs. blue vitriol, 6 lbs. lime.

When either eight or six pounds of blue vitriol are used to four pounds of lime, russetted apples result, but the number so affected varies in different years.

When four pounds of lime to four pounds of blue vitriol or six pounds of lime to six pounds of blue vitriol are used (with fifty gallons of water) no russetting has resulted. The moral is obvious; to avoid russetting use more lime.

Rev. F. Walden said his experience corroborated what had been said. When he used six pounds of vitriol to four pounds of lime some russetting resulted, but when he used the four-four formula there were no russetted apples.

Prof. Cordley called attention to the fact that in the Willamette Valley apples are often discolored by a rust which is sometimes mistaken for the effect of spraying. The cause of this rust is not known, but in the East, where it also occurs, it is attributed to cold or other climatic causes.

Horticultural Inspector McPherson of Idaho, said he was satisfied that 90 per cent of the russetting of apples in that state was due to spring frosts.—Oregon Agriculturist.

When to Spray for Codling Moth.

Entomologist C. W. Woodward of California, as a result of thorough investigation, as to the best time to spray for codling moth, states: When spraying is necessary may be determined by gathering a quantity of winter worms in their cocoons, and placing them in a breeding cage. As a result of these studies, our positive recommendations in the matter of time of application for the codling moth, is an annual program as follows:

"First—Spray as soon as the oldest blossoms have dropped their petals and repeat once or twice, if necessary, to reach every blossom cup.

"Second—Spray as soon as spring brood of moths begin to fly, as determined by breeding jars, and repeat if the hatching period extends over three weeks.

"Third—Spray as soon as worms appear under bands which are placed about the tree for purpose of trapping the larvae when ready to pupate, and continue about every three weeks until the winter worms that do not pupate to replace the summer form."

Complimentary Offer *To PROGRESSIVE ORCHARDISTS*

We are willing to leave the final settlement of the Black Ben Davis-Gano controversy to the decisions of the intelligent orchardists of the United States. We have no hesitancy in doing so, as we know positively that Black Ben Davis is **different** from Gano and **better** than either Gano or Ben Davis. Therefore,

WE OFFER to Government, State and Private Experiment Stations and to responsible orchardists, scions from the original stock of Black Ben Davis. We make no charge for the scions—you will be at no expense except express charges. It is understood that you will give us the benefit of your experience with the variety and also **prevent all further propagating from the scions furnished by us.**

N. B.—Caution. Unscrupulous and careless parties are cutting scions from all sorts of Ben Davis trees in Arkansas and selling them as Black Ben Davis. Eminent pomologists are familiar with this careless and underhand work and have called our attention to the importance of keeping Black Ben Davis stock pure. To our positive knowledge, thousands of Gano, Red Ben Davis and even old Ben Davis scions have been sent out of Arkansas for Black Ben Davis. A few unscrupulous parties have even succeeded in securing the true scions of Black Ben and being unable to use that name have sold them as Gano. Therefore we make the above offer to those who are interested, in order that they may test to their entire satisfaction, Black Ben Davis from the nine Bain trees propagated from the original seedling tree as grown by old Parson Black, the history of which was obtained by the committee of the Arkansas Horticultural Society.

To Responsible Orchard Planters who may have one tree or more of undesirable variety, we will furnish complimentary for testing, scions for top grafting, from trees of our most valuable and rare kinds. We especially desire to have tested in several thousand orchards, several rare and most **promising apples** not yet introduced. We will buy all choice specimens of fruit from these top grafts, paying a liberal price. There is comparatively little loss of time, as the grafts usually bear the second year. Kindly refer to this offer when writing. Scions furnished during March and April, buds in August.

This plan of testing new sorts is along the line of experimenting recommended by Prof. L. H. Bailey of Cornell University before the National Nurserymen's Ass'n at Detroit last year. We have been following this plan for the last fifteen years in our share orchards. We have these orchards in sixteen states, and this wide distribution, together with the great variety of soils, climates, altitudes, etc., makes our tests of peculiar value.

Grafting Wax—Resin (best "white"), 4 lbs.; Beeswax, 2 lbs.; tallow, 1 lb.

Melt together and pour into a pail of cold water; then grease the hands and pull the wax until nearly white. (Parafine—Standard Oil Co.'s— is frequently used instead of beeswax, but is not quite so good.)

To those needing only a small quantity of wax, we will furnish at 75c per lb., postpaid.

STARK BRO'S *NURSERIES & ORCHARDS* **CO.**
LOUISIANA, MISSOURI

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Pruning the Grape.

Fruit-growers are busy pruning. The abnormally cold and constant weather throughout the entire winter has left this important branch of work in a very backward state. The sunshiny days when the saw and pruning hook were a possibility might be counted from memory.

This backwardness of winter operations is especially noticeable in vineyards. The vines should have been pruned two months ago. The sap will soon be moving and the wounds which are made at this season must bleed in consequence. It is natural to suppose that this "weeping" does no good to the vine. Whether or not it be an injury, it were better that pruning be done early in the winter, even before the very severe weather commences. The wounds then become calloused and the owner needn't worry all winter watching for a warm day and have finally to turn out in a shivering March wind to do the job.

So many styles of training are practiced and give such uniformly good results, that the grower may have his choice. The main idea in all is to give sufficient light and air and cultivation, while furnishing protection from the heat of the sun, direct or reflected, and the blowing about of the vines in the wind.

What is known as the high renewal system is largely practiced throughout the Lake region, though it is giving place somewhat to a newer style known as the "Kniffin," where large areas are grown and less care during the growing season can be exercised. The horizontal system is rapidly giving place. These three systems of grape training are the fundamental ideas of all training as practiced by the great grape growers of the Chautauqua, Western New York and Hudson River regions.

Unless a very strong growth is made, cut back the vine the first winter to three or four buds. Put down your posts the following summer and, if you contemplate the upright or high renewal system, stretch a wire two feet from the ground. Sharpen the posts and drive them in 18 inches deep and about 8 feet apart. Make the head of the vine next winter by cutting away all but the main cane and a strong shoot on a level or a couple of inches below this wire. This shoot and the main cane above it are to be the arms. Cut them back to five or six buds and tie to the wire in opposite directions. The third season upright shoots will grow from them and these must be tied to a second and third wire. You will get a few grapes this season. The winter following cut away all this growth including the arms, excepting the strong shoots one on either arm, as near as possible to the crotch. These two shoots are cut back to eight or ten buds and tied down to the lower wire. The vine now bears the same shape as when pruned the previous winter. Always prune back each winter to this shape, getting new arms either from the old wood in the crotch or if good canes are not there, from the first strong shoot in the old arm. Every five or six years allow a good cane to grow up from the base of the vine to take the place of the original head and when it is ready, cut out the old wood. All wood in the vine will thus be comparatively new—a great point in grape culture.

If the ground be rich and the vine of a strong-growing variety, such as Niagara or Concord, it is sometimes well to leave four arms instead of two. The vine will thus carry thirty or forty buds, sufficient for a tremendous crop. When this is done, train two arms each way, tying both to the bottom wire. Do not spread the canes obliquely on the upper wires as some do, the upper canes would flourish to the detriment of the lower.

The Kniffin system does away with much of the summer tying, and does well with the strong drooping varieties. With this system the main stem is brought right up to the top wire. It has four arms, two extending in opposite directions on a top and bottom wire. The trunk and arms are securely tied but the shoots are allowed to hang free. In fact they must be pulled free two or three times during the summer. The top wire is six feet and the lower three feet six inches from the ground. The arms are cut away each year and replaced either by renewals from the main trunk or by canes from spurs near the base of the arms.

This system has many advantages. The hanging shoots afford shade while allowing a free circulation of air, the fruit being high up, is not hurt by reflected heat from the earth, less time for summer tying is required, cultivation is easy and small fruits such as currants may be grown between the rows. When the canes become so long as to touch the earth the ends should be cut off with a sickle, but this operation should be delayed as long as possible as it tends to produce laterals which choke the vine. It is a system which seems natural to the strong-growing hanging varieties and is gaining greatly in popularity. With various modifications it is practiced almost exclusively in the Hudson River Valley. Such stout, upright-growing varieties as the Catawba and less vigorous growers like the Delaware are better suited to the other style, but taken all together it is destined to largely supplant all the other methods of training now in use. J. SKELTON.

Niagara-on-the-Lake, Ont.

⚜ ⚜ ⚜

"I have taken the Fruit-Grower but one year, but to me it is an almost indispensable article. I cheerfully recommend it to all who want an up-to-date, reliable farm paper."—H. M. Barnes, Jennings, Okla.

C. C. Shepherd, N. J., writes that he will get some new subscribers for the Fruit-Grower from among his neighbors. The January number especially pleased him, as he feels sure it will all who are interested in fruit culture.

"All one needs to do is to show a copy of the Fruit-Grower to a man, and he will subscribe. The Fruit-Grower is certainly king of its kind."—Lee Gibson, Dixie, Okla. And Mr. Gibson sent a list of new subscribers, too.

D. L. Blakley, Denver, Colo., writes that he was so well pleased with the January number of the Fruit-Grower that he went out and secured a club of five subscribers on the strength of the good paper. This can be done by every one of our readers. Will you get your list?

D. J. Merriman, president of the Lake County (Ohio) Horticultural Society has sent several nice lists of subscribers to the Fruit-Grower this season. He says that at a late meeting of the society the members discussed the best method aof combating the San Jose scale, and it was decided that the lime-salt-sulphur mixture is the best remedy. For large orchards it was decided that power sprayers are the most economical.

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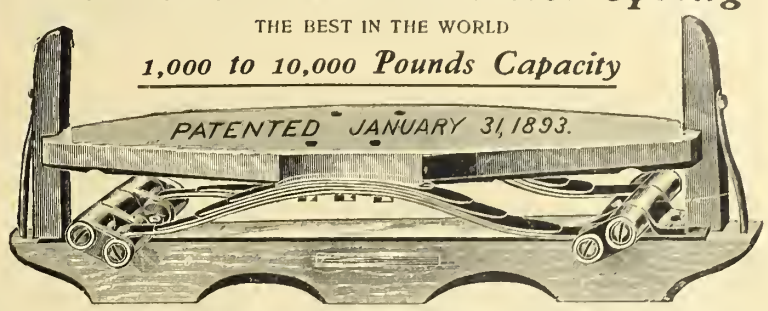

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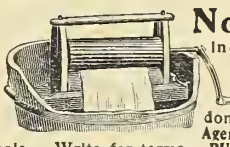

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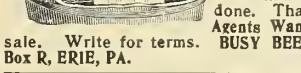

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SCIENTIFIC REVIEW

Of the Conflicting Reports of the Missouri and Arkansas Hort. Societies

By Edward J. Wickson, A. M.

Prof. of Agricultural Practice of the University of California; Horticulturist of the Cal. Agricultural Experiment Station; Author of "California Fruits and How to Grow Them," and "California Vegetables in Garden and Field."

I have been asked to roview the conflicting reports of the Missouri State Horticultural Society and the Arkansas State Horticultural Society upon the identity of the Gano and the Black Ben Davis apples and to make comments thereupon. This request is based upon two considerations, I presume: One, that I may have some acquaintance with pomological evidence; the other, that I am far enough from the field where the issue has been made to be free from the heat of the contest. I believe I am free from passion and prejudice in the matter. I am, however, deeply interested in the demonstration of the truth involved and must claim that possibly the question seems to me more important than to some others. It strikes me that the issue reaches deep into pomological science. For instance, all California evidence which comes to me favors the clear varietal distinction of the Black Ben Davis and a clear superiority for it. If the two fruits are identical how can this be explained? If they have individuality as varieties, the explanation is ample. And before undertaking the review of the conflicting State reports I wish to remark that the issue is profound and important. It is not merely whether the apples are so similar as to lead some to claim them to be indistinguishable. This claim might be perfectly true of two varieties growing under similar conditions and yet quite untrue if the two were moved to other similar conditions. Under this new environment each might manifest quite different characteristics. This could not be the case if the two were identical, for then both would act alike and be similarly affected.

When this is held in mind it is clear that the question is not merely of local similarity in the two, and yet that seems to be the ground upon which those who uphold identity make their chief contention. They overlook the fact that a distinct variety differs from another, not only in the characters of the fruit but in possession of a distict capability of variation under changed environment, which may disclose differences in the fruit, in the growth and habit of the tree, in its adaptation to new conditions, etc. This is the case even if one variety be a seedling of the other, for even such close relationship does not carry the exact characters of the parent to the offspring; and even if it does have close resemblances to the parent the offspring has also powers and possibilities which may be quite unlike those of its parent. For this reason the California growers of Black Ben Davis are disposed to attach great importance to the determination of its standing as a variety and do not look upon it as merely an issue between nurserymen or a question of reducing the fruit list, as some growers in the Mississippi valley seem to regard it. It is this greater interest and the greater significance of the question which incite me to review the conflicting reports of the committees of the two State societies, contrasting them and commenting upon the declarations made, in whatever judicial frame of mind I may possess.

First, the Historical Aspect.—Manifestly the historical aspect of a variety is the most important and satisfying in determining its pomological standing. If it can be shown that a variety actually came from a seed, there can no longer be question of its title to a name, although if exact similarity in possessions and potentialities be demonstrated it may be ill-advised to insist upon this right. This position would be only lightly held, of course, with plants usually grown from seed, because from properly selected seed, variation should be at a minimum, but with our tree fruits, in which there is rare recourse to seed, there can be no question about it. No matter how close the resemblance may be to others, the right to a name, when proper occasion for it may arise, is affirmed by pomological rules and precedents and is rightly so, because as has already been claimed, a scedling has potentiality of its own. The expansion of this point will be necessary in a later connection. The present claim is that if the history of a variety carries it to origin from a sced, its right to claim standing as a variety is established. Let us see how the two committee reports stand as compared from this point of view:

From the Report of the Missouri State Hort. Society.

It was found that the nine trees from which the Black Ben Davis scions were secured, were growing on the farm of Mr. John Bain, of Lincoln, Ark. These nine trees were propagated in 1883, by Mr. G. L. Guthrie, now of Pauls Valley, Ind. Ter., but who in 1883, lived on the Bain farm where these nine trees now stand. Mr. Guthrie secured his scions from a tree which grew on the old Parson Black farm, near Lincoln, Ark., and which was occupied and owned by John Reagan, at the time when the scions were taken, but which now belongs to Nathan Thomas.

The next step was to find out if possible, where the tree came from on the old Parson Black place, from which Mr. Guthrie secured his scions for propagating the nine trees which furnished the scions from which the Black Ben Davis was introduced. It was found that this latter tree was destroyed some years ago, to make room for an addition to the house, and that the trees propagated from it by Mr. Guthrie were said to be the first that had been propagated from it. The committee visited the spot where the old tree stood. From Mr. Thomas, the present owner, from old friends and neighbors of Parson Black and of Mr. Reagan and others, we learned that this tree began growth there sometime between 1865 and 1869. No one would venture a statement as to where the tree came from or whether it came from a seed or was brought there from some other place. They were all well acquainted with its having been there, with the fact that it was one of the best varieties in the neighborhood, that it produced very regular crops of its well-known large, highly colored, beautiful apples, but were not sure as to whether or not the tree was a seedling.

A letter from Mr. Guthrie, who first propagated from it, confirmed the statements made by the people who have lived in the vicinity of the old Black home, together with the additional statement that the tree was a seedling. The evidence which he gave in support of the statement that it was a seedling was, that it did not seem probable that anyone would plant a tree so close to the house and the cellar, so he judged that it came up accidentally. The committee found other cases, however, where trees had been planted as close to other houses in the neighborhood as this one formerly was to the old Black residence.

The committee was able to locate, then, the original Black Ben Davis tree, so far as it was known in the neighborhood, but could obtain no positive evidence as to whether or not this tree was a seedling.

From the Report of the Arkansas State Hort. Society.

We bought the farm known as the Parson Black farm from John D. Moore, and moved to the place in 1883. We lived there four years, leaving there in the spring of 1887. I remember a seedling apple tree that grew near a cedar tree; it was three or four years old when we moved on the place. It didn't bear any the first year we were there nor the second, but the third year it bore a few apples. I didn't notice them particularly because there were very few on the tree and the old orchard was full of apples that year. I had spoken to my husband three or four times previous to that about cutting down that little scrub-by seedling. I thought it would interfere with the cedar tree and didn't think it would amount to much. He insisted that we leave them to grow together. The fourth year this tree bore full of beautiful apples which attracted my attention by the color and shape, different from any I had ever seen before. I was so attracted by it that I was anxious to have the apple introduced in the country and one Mr. George Guthrie came to our house, cutting scions from the old orchard, and I asked him to take some of the twigs from that seedling tree. He asked what it was and I said it was a seedling and we had no name for it, but it was the finest color and different shape of any apple I had ever seen in the country, and I thought it ought to be propagated from. So he took some of the twigs and grafted them —Evidence of Mrs. J. F. Reagan.

When I bought the place there was a little scrubby seedling three or four years old growing near a cedar. My wife tried to get me to cut it down several times so as to give the cedar a better chance. I told her I would not cut it down, but let them both grow together. The tree did not show any fruit the first or second years I was there; it bore a few apples the third year, and the fourth year it bore a good crop for a tree of that size and age. The limbs of the seedling and cedar had grown in together. . . . We peeled our apples near the cedar tree. Old peelings and cores were in evidence there where people had peeled there before we came and we used the same place for peeling ours.—Evidence of Mr. J. F. Reagan.

I went to growing nursery stock in Washington county soon after the war. I cut my scions from such trees as were then growing in the neighborhood. I sold the trees to Parson Black that he planted on his homestead in 1870. I never had seen any apple like the seedling that afterwards grew on the Black farm.—Evidence of D. K. Holt.

It seems clear from the foregoing that the committee of the Missouri State Horticultural Society did not have the evidence upon which the Arkansas based its report. The Missouri narrative is defective in that it makes the original tree about ten years too old. The Committee, apparently, neither saw nor did they directly hear from the Reagans, but were content to take the neighborhood gossip of those who, though local residents at the time, had never come into close contact with the tree. It is not surprising, then, that the committee could get no definite knowledge from those whom they interviewed, nor were such people entitled to make a statement as to whether it was a seedling or not. One cannot resist the conclusion that the finding of the Missouri committee as to the history of the tree was just as good as its evidence and that evidence was inadequate and inconclusive; in fact, the committee reports that it could find "no positive evidence." The nature of the conclusion which it drew from "no positive evidence" will be examined later.

The report of the Arkansas committee is quite in contrast, as shown above. The committee found those most competent to speak and their testimony is positive. The conclusion is irresistible from the evidence of the Reagans that the history of the origin of the Black Ben Davis from a seed is as thoroughly made out as pomological precedents require. In fact, it is seldom that the character of a chance seedling is better established from a historic point or view, viz:

First: The tree was in a place where no one would plant a tree. Even if its proximity to the house be dismissed as the Missouri committee is disposed to dismiss it, there still remains the proximity to the cedar. This tree was evidently looked upon as a desiriable feature of the surroundings of the house, both for ornament and as a working place and had been for some time so regarded and utilized. It is hard to think that any one would plant a tree in such a place. The conjecture might be made that a young tree might have been temporarily "heeled in" in such a place and neglected afterwards, but the testimony, secured by the Arkansas committee, from Stephen Thomas who lived on the adjoining place, that the Black farm had a non-resident owner and was in Mr. Thomas' charge for not less than five years before the Reagans purchased and moved upon it, and his statement that no trees were planted during that period, dislodges any such conjecture.

Second: The place where the tree appeared was abundantly sown with apple seed as the cedar tree was used as a shelter for paring and coring of apples from the old orchard.

Third: The Regans, who were evidently acquainted with fruit trees and fruit, regarded it from the beginning as a volunteer or chance seedling and treated it just as all people treat such seedlings—discussing whether it was desirable to keep it or not, then yielding to curiosity as to what it might bear and finally urging its propagation with some pride of discovery when it proved good. This is so natural an occurranc that one cannot help believing it.

Fourth: The testimony of two experienced tree propagators, who, by the very nature of their business, are alert to the appearance of new varieties, and who were actually resident upon the spot, cannot be overcome. Mr. Holt who grew the trees for the old orchard on the Black farm and who had been growing trees there for perhaps 15 years before the seedling appeared, says he never saw a fruit like it. Mr. Guthrie, who took the first scions from the seedling for grafting other trees, was satisfied that the tree was a seedling. This testimony is unequivocal and positive and cannot be set aside. The testimony is also supported by the fact that the community was a small one and these local propagators would naturally know all the trees introduced into it at that period of its history when such affairs were few and limited.

There seems no reasonable escape from accepting the Reagan testimony and the soundness of their conclusions in pronouncing the tree a seedling. And when that decision is reached the question is settled. As claimed in opening this account, it does not matter whether the variety has a close resemblance to another or not: If the tree is from a seed, it has individual potentiality which may be manifested in many different ways, and the acquisition of such a plant may prove of great pomological value.

Unwarranted Conclusions. But the Missouri committee is not satisfied with reporting that it could find "no positive evidence;" it proceeds to argue from such evidence and makes, first, illogical conclusions and afterwards other conclusions which are unwarranted pomologically. The committee gives an interesting account of what it could ascertain about the origin of the Gano apple, but there is nothing in it which is relevant to the origin of the Black Ben Davis, except that the former is an older apple and was grown at several points in Missouri and Kansas long before the seedling appeared on the Black farm in Arkansas. But the committee cannot, apparently, trace Gano to Arknansas at an early day, nor would it matter if they did. The occurrence of the Gano and any inference drawn from it can have no importance in the face of the two facts established by the evidence submitted by the Arkansas committee: First, that the Black farm tree was a seedling; second, that no trees were planted on the Black farm during the decade in which the seedling appeared. Even if the committee could have proved that Gano apples had been cut up under that cedar tree, it would justify a strong inference that the little tree which grew in that strange place was a Gano seedling, but a distinct variety just the same, as will be emphasized later.

First, as to the illogical inference from its historical investigation. The committee makes the following summary of its investigation in this line:

From the above it will be seen that the committee has not been able to positively determine the primary origin of either the Black Ben Davis or the Gano. The oldest known Black Ben Davis, which grew on the old Parson Black Farm, near Lincoln, Ark., was not proven to be a seedling nor was there any definite proof that it was not. The oldest known Gano, of the old Jacks orchard, is of similarly uncertain origin.

The only argument which could be drawn from this statement would be to this effect: The Black Ben Davis is of unknown origin; the Gano is of unknown origin: therefore the Black Ben Davis is the Gano. But the Missouri report wisely hastens away from this logic without definitely stating the proposition, still the conclusion quoted above conveys the impression that the committee attaches some importance to its finding that both varieties share in obscurity of origin.

Turning, however, from defective logic, the report encounters pomological difficulties quite as great. It proceeds as follows:

Even if the committee could have established beyond doubt, the fact that these trees were of separate seedling origin, they would hardly have been justified in passing a positive judgment from this fact alone, that they were different varieties, though the chances in such an event would have been very great that such would prove to be the case. There are a few cases on record where two different seedlings of the same general type of orchard fruit are so much alike that they cannot be distinguished as separate varieties. For example, the Crawford type of peaches sometimes reproduces itself (or comes true) from seed. The Green Gage plum, one of our oldest and best known varieties of tree fruit, sometimes reproduces itself perfectly from seed.

The committee cites other similar instances in support of its view. They certainly have force and this line of reasoning is the strongest in the Missouri report and yet there are also such striking instances in which the opposite is true, especially in the line of a difference in adaptation to changed conditions that it still remains true that it will not do to support identity either upon relationship or resemblance. Sometimes such a question is determined so unquestionably by the experience of growers that no expert examination or declaration could either add to such demonstration, nor take from it. The issue between the Wager and Muir peaches, which arose in California more than twenty yeas ago is in point. The Wager and Muir are alike; the Wager has the reputation of coming quite true from the seed. The relation of these varieties was freely discussed at the time. Now the Muir survives and the Wager has disappeared. The Muir is the most widely planted of all peaches in California. The Wager is scarcely planted at all. The origin of the Muir is less clear than that of the Black Ben Davis, but it has proved an individuality and line of adaptations which places its standing as a variety practically beyond question.

The Missouri report also claims that even if the two apples "were of identical origin that would hardly be positive proof that they might not be different varieties"—on the ground of possibility of bud variation, etc. That is true; but it has no relevance. The historical data in the same report, although they do not prove the origin of either variety, do substantially prove that the two could not possibly be from the same seedling, because they are not connected in any way either in time or place. It is not at all necessary then to discuss how they might be two varieties from the same origin. The introduction of such conjectures merely tends toward mystification.

The remainder of the Missouri report deals with the comparison made by the committee of the two apples and which they entered upon to show that, inasmuch as they had failed to show either identity or difference by history or reasoning, they could also find no difference by comparison of the trees and the fruit. How they succeeded in this undertaking is shown in their report below, while, in contrast with their conclusions, is placed the evidence upon which the Arkansas committee reached a directly opposite result:

From the Report of the Missouri State Hort. Society's Committee.

Each member of the committee took portions of these specimens and kept a part of them in cold storage and a part of each in an ordinary cellar, so as to observe them at different times during the winter. . . . After a careful comparison of the apples once a month during the winter and spring, the committee are unable to find any difference between Gano and Black Ben Davis. Black Ben Davis differed no more from Gano than did the individual specimens of each sort differ among themselves. Both Ben Davis and Gano kept as well as did Blk. Ben Davis. So far as the committee could see Black Ben Davis and Gano were of the same color of flesh, of the same flavor, and of identical varietal character throughout. In each variety certain specimens of each sort were more crisp and of a better flavor when cut from time to time than were the riper specimens of the same variety.

From the Evidence Published by the Ark. State Hort. Society.

I have been growing the B. B. D. in orchard and in nursery and also have Gano in orchard and in nursery. The B. B. D. is a darker tree in growing and leaves darker green and a better grower in orchard and in nursery than Gano and the apples are better and hang on trees longer than Gano and are better keepers and I don't see why anyone can't see the difference. The Black Ben Davis is positively a seedling that originated on Parson Black's farm near Cincinnati (now Lincoln) Ark.—B. L. Hatchett.

I have given special attention to the Black Ben Davis since 1895. I can readily distinguish the Blk. Ben Davis apple from the Gano as they grow in our country. The Black Ben Davis is much darker and more uniform in color and is more oblong in shape. I live in the vicinity where the Black Ben Davis originated. I have noticed the fruit growing on the Bain trees and also noticed the trees both in nursery and orchard and they are positively different from Gano.—Wm. Norwood.

I had fruited many varieties of the Ozark apples before receiving scions of Black Ben Davis in 1898 and was thinking well of some of them. Coffelt, M. B. Twig, Gano and some others were promising, but when Black B. D. fruited in '99 the com-

This committee has not been able to distinguish any difference between the trees, twigs or leaves that did not exist to any equally marked degree between different specimens of the same variety.

The phenology of Black Ben Davis and of Gano has been recorded for trees of similar age in the same orchard, where they were given similar treatment. There was no difference in the time of starting into growth in spring, in the time of blossoming, in the color or other characters of the flowers or in the time of shedding of leaves in autumn. . . .

After finding no differences, either in the fruit or in the trees, by which they can be separated, your committee is forced to conclude that Black Ben Davis and Gano are one and the same variety; and that their having been regarded locally as being different sorts is only another case where isolated trees of a variety, having been brought to notice in some widely separated neighborhoods, have each, for a time, been given different names and each has been honestly regarded as being of distinct seedling origin

J. C. WHITTEN,
J. C. EVANS,
W. T. FLOURNOY,
Committee.

bluations of its strong growth, the dark green healthy foliage, the wonderful beauty, fine texture and keeping quality of its fruit delighted me and it has never failed of a full crop since. While a few others may have a higher quality in flavor, I have never before seen an apple that so greatly pleased me, and year by year it has grown in my estimation. . . . . From my experience here with the two varieties I can't think of them as rivals at all. While B. B. D. has grown year by year in my estimation, the other, under like conditions, has failed to give satisfaction. . . . Black Ben Davis appears to grow here to its full development. Gano, I have reason to believe is not as fine as in some other locations and while the two apples are evidently near related in parentage, I have no doubt of their separate and distinct origin nor have I a doubt of the great superiority of Black Ben Davis as a commercial variety.—FRANK FEMMONS, Ahwahnee California.

My home is Seymour, Mo. The Black Ben Davis as grown in my orchard side by side with the Gano is far different. The Black Ben Davis tree is more of an upright grower, strong and thrifty. Gano grows more on the Willowtwig form, drooping, spreads more and a more wiry growth. Fruit of Blk. Ben Davis as my trees have fruited is an oblong apple, uniformly a very dark red—no stripes. My Gano have some dark colored apples, but mostly with spots, the white spots prevailing; and the general crop is flat. I have made the test and selected Black Ben Davis from Gano when piled together. I have from three to four thousand trees of each variety; am still planting Black Ben Davis, but NOT Gano.—L. M. WINANS.

My home is in Springfield, Mo. My business is commission and produce. While on the Chicago market I received apples from Mr. Winans located at Seymour, and among these were Black Ben Davis. They resembled overgrown, fancy, highly colored Jonathan more than anything else. The Gano which are received from Illinois, Missouri and the Pacific coast, are more striped, and white spots very pronounced, which makes them a very handsome apple especially when put in boxes. We can easily distinguish the two varieties from a commercial standpoint; the Gano will sell usually on a par with the Ben Davis and Missouri Pippin, while Black Ben Davis and Jonathan are taken for fancy fruit-stand apples.—W. S. JULL.

We are thoroughly convinced, after a rigid investigation of the facts that the Blk. Ben Davis originated in Washington County, Arkansas, on a farm owned by Alexander Black, commonly known as the "Parson Black Farm;" that while it is of the Ben Davis type and has some of the characteristics of the apple known as Gano it is a separate and distinct variety.

W. G. VINCENHELLER.
A. W. POOLE,
J. E. REYNOLDS,
Committee.

The conclusions of the Missouri committee are given in full above, except the report of a comparative test made in Washington. In the form the committee presents it, it is not evidence. If the parties named were willing to go upon record a statement should have been secured from them and introduced in the report. The two members of the committee who went to Washington with the apples may have mistaken the conclusions of the parties as conversationally made at a general apple-tasting. Such things are not uncommon. In such affairs written communications from the parties themselves are competent testimony and the committee should not have participated in the examination—especially, as they expressly state, this reference was made "not to in any way bias the opinion of the committee." To complete the narrative, however, it may be said that the committee states that the Washington experts could find no distinguishing difference in the apples shown and in that respect they supported the conclusions of the committee.

The Missouri committee was correct, of course, in proceeding to establish identity by comparison of tree growth and fruit characters when their historical inquiry yielded them nothing, but the comparison carried them to an assumption and not to demonstration, just as was the case in the historical branch of their work. They find no difference, therefore they assume identity and this fact is set forth in the last paragraph of their report. The committee probably realized the generally recognized difficulty of proving a negative and did the best it could.

In contrast with these closing parts of the Missouri report appear condensed statements of the evidence which the Arkansas committee made a part of its report. It also represents an appeal to the tree and the fruit to demonstrate its own individuality by clearly recognizable differences. This evidence covers a much wider geographical area, consequently gives greater opportunity for diversity to manifest itself. It supports the historical demonstration which renders the Arkansas report superior and unimpeachable and the two combine to carry the conviction that the Arkansa conclusion is correct.

In thus affirming the superiority and greater weight of the Arkansas report, I would point out again its positive and unequivocal character and emphasize the greater breadth of the data upon which it is based. The Missouri committee seems to have thought alone of local interests and its chief purposes apparently where to combine two varieties, thus simplifying the Missouri apple list, and to support preconceptions of identity. The report does not show recognition of the broader considerations involved in the question. The Arkansas report submits evidence which clearly indicates that the Black Ben Davis exhibits striking differences and superiority to Gano when grown beside it in other parts of the United States and this is only capable of explanation on the basis of separate seedling origin, which the same report demonstrates for it.

E. J. WICKSON,
Berkeley, California, Feb. 23, 1904.

42 MORE OPINIONS

On the BLACK BEN-GANO Controversy

ABSOLUTELY DISTINCT FROM EITHER. I wish to say a word about the controversy over Black Ben Davis. I have had the chance to see Black Ben Davis in fruit here and at another point in the state and as I have long known Gano and Ben Davis, I am able to say that Black Ben Davis is **absolutely distinct from either,** more distinct by far than Gano is from Ben Davis. Yet I wish to add that I consider these three varieties closely related, and call them the Ben Davis group, but they are certainly horticultural varieties, regardless of what any committee says.—WM. B. ALWOOD, Prof. of Mycology and Entomology, Virginia Polytechnic Institute and Experiment Station, Blacksburg, Va., March 4, 1904.

Have 1000 Stark's Black Ben Davis which yielded one bushel to the tree. They are quite different from Gano.—P. L. WOOD, Botetourt Co., Va., Feb. 25, 1904.

In the Home of Skilled Horticulturists.—Went to N. W. Ark to learn all I could about Black Ben as compared with Gano. There is a difference in shape, texture, flavor, wood and leaf. No one there ever thought them the same and Washington Co., is the home of a great many skilled horticulturists. Every one is planting largely of Black Ben in place of Gano. —O. J. EDMONDS, Franklin Co., Ark.

Ten Years Experience.—Have known the apple Black Ben Davis since 1894 and heard neighbors talk about it two or three years before that; all said it was as fine an apple as ever grew. I was often in the Bain orchard and for three years I packed the apples and sent them to cold storage. One year I packed some 8 or 10 varieties in the same barrel and when this barrel came out of cold storage the June following, Ben Davis and several other varieties were badly damaged, some actually rotted, while Black Ben Davis were as sound as when packed the fall before. I have handled Gano—in 1899 I packed nearly a car load; it is not as smooth an apple as B. B. D., neither is it as firm nor as well colored. I planted many B. B. D. when I lived in Washington Co., and when I moved here B. B. D. was the first variety I planted. Some six years ago Mr. S. T. Cole asked me, "Will I make a mistake if I put out 1000 Black Ben"? I told him, "No, indeed, you can plant nothing better." The consequence is, Mr. Cole has as fine an orchard of Black Ben as a man may wish for, and if it be a good fruit year his first crop will go to the World's Fair. Black Ben has a firm hold on the American people **—it will live forever;** that is the reason for this unfounded opposition—JACOB SCHLAEFLI, Sebastian Co., Ark., Feb. 10, 1904.

Why This Controversy, when it is as plain as the nose on a man's face that B. B. D. and Gano, grown in the same orchard, are entirely different? Have Gano and B. B. D. growing and bearing and their habits and appearance are very dissimilar, so much so that I cannot see why any disinterested person should confound the two. I can tell the difference in the trees at a distance of 20 yards, B. B. D. being more thrifty, deeper foliage, smoother bark. A blind man can distinguish the difference in fruit, Black Ben being more juicy and delicious —J. B. WALTERS, Gallatin Co., Ill., Feb. 8, 1904.

Appearances Indicate He Is Right.—He who pronounces Black Ben and Gano the same is not much of a judge of fruit, or else is jealous of your success. Black Ben is far superior to Gano and it is a better keeper and tree a better grower. Fruit has some apple-like flavor to it and doesn't dry up like Ben Davis or Gano. Champion a grand apple. I have the nicest lot of trees around here, all from your nursery. Want 300 more B. B. Davis and 200 Champion, 1-yr. trees.—J. GRUHLER, Kootenai Co., Idaho.

False Reports Aid Such Frauds.—Some ..... nurseries are selling Gano for Black Ben Davis. Mr. Thos. Buttoff of Barber Co., bought quite a bill of trees, the bulk to be Black Ben. On examination of his duplicate he found it read **"Gano or Black Ben Davis;"** he paid 75¢ each for the trees. Have seen Black Ben trees growing in this section, also the apples; they are very much better than Gano—no trouble in distinguishing the difference—C. O. ANDERSON, Barber Co., Kans., Feb. 15, 1904.

The ONLY Apple.—Black Ben Davis is **the only apple** in this part; there is a big difference between it and Gano—trees are not alike, let alone the apples. The general opinion is that B. B. D. is the best of all commercial apples. —W. T. JORDAN, Wash. Co., Ark., Feb. 9, 1904.

Absurd.—Have been raising apples all my life—am now 86 years old. Four years ago planted 700 Stark trees, among them 250 Black Ben D., some of which have borne, and to say Black Ben and Gauo are the same is absurd. I know whereof I speak.—WM. R. LIERLE Warren Co., Iowa, Feb. 11, 1904.

Should Know Apples.—Have barreled thousands of barrels of apples at Marionville, Mo. and other points, among them many Gano have barreled apples for twenty years and make that a business. I have carefully examined Black Ben Davis and **they are not Gano.**—F. B. LEWIS, Lawrence Co., Mo., Feb. 10, 1904

At the Horticultural Institute here last week, Gano and Black Ben Davis were both exhibited. They were pronounced different by all the practical fruit growers who saw them. I can never understand how they were ever considered identical by anyone.—W. D. INGALLS, Yakima Co., Wash., Feb. 27, 1904.

No More Like Gano Than Old Ben is Like Gano.—Have read considerable in fact, about everything that has been published, about Black Ben Davis being the same as Gano. Now I cannot see how anyone can say there is no difference. My Black Ben are no more like Gano than old Ben Davis is like Gano. Black Ben is larger, deeper red and better quality. Spring 1900 I set 1160 Stark apple trees—Commerce, Black B. Davis, Senator, Stayman, Yellow Trans. Last year I had some fruit on each of the above, but more on Black Ben than any other, which proves that B. B. D. is **not slow in bearing.** At present all of my Black Ben trees are loaded with fruit buds. Am sorry that I did not set more B. B. D.; it is going to be the apple for this country.—J. T. MCCARY, Garfield Co., Colo.

Only Thing Against It.—I don't think there is any comparison whatever between Black Ben Davis and Gano. Black Ben is a better all-round apple and the only thing against it is the name "Ben Davis."—B. H. RANDALL, Washington Co., Idado.

From West Va.—Champion and Black Ben Davis are all you claim for them. **Black Ben is not like Gano,** but is a much better apple; I recommend it for West Va.—H. D. REED, Hardy Co., W. Va., Feb. 10, 1904.

High Color Adds to Market Value.—Black Ben Davis is a good bearer in state of Washington. It is superior in quality to Ben Davis and **superior in quality to Gano;** and in addition has a **much higher color** and finish which adds greatly to its **market value.**—O. BEEK, Horticultural Inspector Yakima Co., Wash., Feb. 19, 1904.

Doesn't Want Gano.—Black Ben bore last year—a much finer apple than Gano. Fifty trees planted two years ago are full of bloom buds this spring. Will not have Gano when I can get Black Ben.—C. I. MORRIS, Polk Co., Ark., Feb. 11, 1904.

In Beauty, Size or Quality, neither Ben Davis or Gano can approach Black Ben Davis. It is the **finest market apple** on earth.—S. W. WEST, Patrick Co., Va., Feb. 16, 1904.

People Who Get the Genuine.—Black Ben Davis has borne only a few specimens; however I have seen enough to be delighted with it. It is the strongest grower I have, the finest shaped tree, vigorous, strong, healthy, much more so than old Ben Davis. It is a fine keeper, provided not eaten too soon. It is a **superb** apple. Planters who get **genuine** Black Ben Davis get a treasure.—THEODORE LEHF, Arapahoe Co., Col.

No Argument Could Convince me that Black B. D. and Gano are one and the same. The report of the Mo. Committee is simply surprising to anyone who has investigated. I visited Benton and Washington Counties, Ark., to compare B. B. D. and Gano and in no single comparison did I fail to find the same differences to exist. First, B. B. D. is deeper, darker red, free from stripe; in every instance of numerous comparisons, I found Gano striped and of a paler color; the foliage of B. B. D. is much heavier and much darker green than Gano, also the bark and twigs are much darker.—ALEX MARANVILLE, Fulton Co., Ill., Feb. 20, '04.

Have Black Ben and Gano bearing and there is no comparison between the two. Black Ben is one of the finest apples I have ever grown; trees very thrifty, heavy bearers of the finest fruit.—R. G. HADEN, Botetourt Co., Va.

The Better Apple.—Have Black Ben Davis and Gano and consider the former the better apple, though Gano is good. Black Ben is larger and darker in color than Gano and a better keeper.—C. C. MILLER, Sierra Co., N. Mex.

We Ask No Other.—Am unacquainted with Gano, but certainly have never seen another apple equal to Black Ben Davis. It seems to me that Gano men were trying to profit on the reputation of your well advertised B. B. D.; therefore, if I can assist you I am at your service, that, is in an honorable, truthful way, and you would ask no other.—J. CHAMBERS, Macon Co., Mo., Feb. 16, 1904.

It Does Look Queer.—Am convinced Black Ben Davis is different from any other. My trees are only two years old and anyone can see the bark is darker and twigs are larger than Gano, growing **on same land, planted at same time** and with **same cultivation.** I have seen the two apples and **they are different.** Think if all prejudice was dropped others would say the same. I, like many others, went to Horticultural Meeting at Van Buren to learn; when Black Ben Davis were generously given away and Mr. ....., from Mo., who had quite a lot of Gano apples, refused to give or sell for love or money one of the Gano for comparison, I heard many say "This settles it; we will plant Black Ben Davis."—J. M. COOK, Washington Co., Ark., Feb. 15, 1904.

Will Stop the Croakers.—Planted 25 Black Ben Davis 5-yrs. ago; last fall I had some of the finest specimens man ever saw—as distinct from old Ben Davis as day and night. Had I known you desired some would have shipped you several boxes. The coming year I will show you apples that old Mo. will be jealous of, and will stop all croakers as to it being the same as Gano.—W. D. NELSON, Delta Co., Colo.

Superior in All Respects.—From my experience and observation, I do not hesitate to pronounce Gano and Black Ben Davis separate and distinct varieties, Black Ben being the **superior** apple in **all respects.** Have never had Delicious or Champion in bearing, but have seen and tested them and think very highly of them.—C. D. SHRADER, Kittitas Co., Wash., Feb, 11, 1904,

Uniform in Size and Color.—Regarding Gano and B. B. Davis, will say that there is no comparison. The Gano is a very irregular apple; Black Ben are much larger and more uniform in size and color.—C. H. STEWART, M. D., Washington Co., Ark., Feb. 10, 1904.

First Choice.—Among the stock purchased from you were 5 Black Ben Davis trees, now set 5 years. Black Ben was first to fruit—they have borne for two years, while there has been no fruit on other varieties planted same time. I like the flavor of Black Ben and it is a good keeper. It is my first choice among all winter varieties —H. GREEN, Ford Co., Ill., Feb. 12, '04.

Will Lead All Commercial Apples.—Saw Black Ben Davis at State Fair several times, also Ben Davis and Gano and any man with good common judgment tempered with reason can tell that there is not only a vast difference in fruit, but especially in the tree itself. There can be no doubt of its being a new sort, ranking among the very best. My candid opinion is it will lead all others for a commercial apple. —A. S. DRESHER, Linn Co., Iowa, Feb. 9, 1904.

Short and Decisive.—Have not yet had any B. B. Davis trees bear, but some of my neighbors had a few and **they are not the Gano.**—FRANK WEDELL, Dolores Co., Colo., Feb. 18, '04.

Am Well Acquainted With Gano and find Black Ben Davis a different apple from Gano and of higher quality.—ED CAMPBELL, Shelby Co., Ill., Feb. 15, 1904.

No Equal.—Find Black Ben Davis much larger than Gano, better tasted. Gano has white flesh while Black Ben has a yellowish tinge. Gano has a flavor like Ben Davis; Black B. D. is much better. Every one here pronounces the two apples entirely different. **Black Ben has no equal.**—O. W. NESON, Rockwall Co., Tex., Feb. 18, 1904.

Stronger Grower, Darker Bark.—My Black Ben Davis trees have not fruited yet, as they are too young, so I cannot speak for the apple, but **there is a difference in the tree.** I have both Black Ben and Gano and anybody can see a difference in the growth of the two trees; Black Ben is a much stronger grower and darker bark than Gano. I have a fine lot of your trees; they surpass any that have ever been planted in our country for quality and vigorous growth.—R. L. LUTTSELL, Frederick Co., Va., Feb. 15, 1904.

Market King of Apples.—There is a **vast difference** between Gano and Black Ben Davis. Black Ben is a healthy tree, a sure bearer and the best shipper known—in fact the Market King of Apples, and the world can't beat it for evaporating.—DR. D. S. MILLER, Wash. Co., Ark.

Black Ben Davis trees bought of you have not yet fruited, although the entire 400 have made a most beautiful growth. One of the most prominent nurserymen in Idaho came to look at them and he agreed with me, without the least hesitation, that in growth they are different from Gano growing near them.—W. A. LESH, Canyon Co., Idaho, Feb. 10. 1904.

Seventeen-Oz. Specimens.—Have 30 trees of B. B. Davis, planted 4 years, and picked about 150 lbs. of apples last fall; they were the prettiest apples I ever saw, and **best.** Everybody that I showed them to was highly delighted with them; some specimens weighed 17 oz.—JACOB OAKS, Tehama Co., Cal., Feb. 14, '04

Pleased the Buyer.—Black Ben Davis is a fine apple, very dark solid red and in appearance is different from either Ben Davis or Gano, and in flavor is much better than either. An apple buyer, in looking at my apples last fall, was very much taken with Black Ben; he pulled one and remarked, "That beats Ben Davis in every way."—V. G. MOORE, Jefferson Co., W. Va., Feb. 8, 1904.

Best Sellers on the Market.—Last year I sold Black Ben Davis for $1.00 per bu. and could only get 40¢ for my Ben Davis. If I were putting out an orchard I would plant all Black Ben, as I find they are the **best sellers** on the market. I can stand 50 yards from the trees and tell a vast difference between Black Ben and Gano; Black Ben is a dark red while Gano is a lighter red and often striped. Mr. Stark, your Black Ben are **fine.**—JAS. MOOTS, Adair Co., Mo., Feb. 11, 1904.

Never Saw Any Finer.—None of my Black Ben Davis trees are bearing, but I have taken particular pains to go and see Mr. Myers' orchard, about six miles from my own, who has several Black Ben trees bearing and I am free to state that I never saw anything finer in the way of apples.—H. B. BLACKMAN, Snohomish Co., Wash., Jan. 30, 1904.

Black Ben Davis is Far Superior to Gano and altogether a different fruit—larger, yellower in flesh and keeps much later. **Delicious,** is by all odds the best flavored winter apple we grow and it bears every year. **Champion** is very promising and a late keeper—hangs to the tree in an admirable manner. High winds blow off many varieties here, but Champion **stays on until picked.**—J. S. MCCLELLAND, Larimer Co., Colo., Feb. 6, 1904.

Black Ben Davis is the largest and best commercial fruit that we have here and a good keeper—Gano is next. Apple of Commerce and Champion are all fine fruit for this country. Black Ben trees are very thrifty and bore the 3d year. I have bought about 300 trees from you and never lost a tree; they came in the best of shape. Will send you a few B. B. D. this fall and will send some Gano also. There is much difference in the two apples.—J. B. MCPHERSON, Sierra Co., N. M., Feb. 18. 1904.

Has Been Shown.—Black Ben Davis is the finest apple I have ever seen and I am from Missouri. Mr. Littooy, our inspector, who has been recommending Gano, saw Black Ben this year for the first time and says it is **different** and **superior** to Gano. Am glad you have succeeded in your persistent and valiant fight for the truth and the right.—W. W. BATTERTON, Snohomish Co., Wash., Feb. 15, 1904.

Black Ben a Better Grower.—All fruit was killed by a late frost last spring; in my 30-acre orchard I didn't have a bushel. B. B. Davis is more thrifty and a faster grower than either Gano or Red Ben Davis in the same orchard and under the same care and cultivation. My Stark trees are in very fine condition. —J. W. LUTZ Luzerne Co., Pa., Feb. 5, 1904.

FIGHTING THE CODLING MOTH.

(Continued from page 19.)

trees, and when the lower branches are on the ground the fruit upon them will be uncolored. A good average between the high and low trees is to be desired. If only two or three main branches grow out from the trunk, they will nearly always split apart under the weight of a full load of fruit. When such a branch is put in place and held either by a bolt or a wire, the crack made by the splitting is an attractive place for the insects. In many orchards it has been observed that trees thus injured always have a higher percentage of wormy fruit than those which are uninjured. This splitting may be prevented by pruning, so as to cause many branches to form on the body of the tree, and cutting back about half of each year's growth, so as to make the tree stocky and able to bear the excessive weight; by thinning the fruit; or by propping the limbs.

By planting clover in an orchard, not only is the soil benefited, but the ground is kept moist; and because they dislike moisture the larvae will not spin cocoons in the ground around or near the tree.

Thinning Fruit.—In the Pacific Northwest the thinning of apples is a practice that is badly neglected. As a result, much of the fruit is small, uncolored, and consequently inferior in value. The advantages of thinning in producing better fruit are too well known to need discussion. All of the terminal clusters should be thinning to one fruit and fruits should not be allowed to grow closer together than 6 inches. The thinning should be done when most of the codling-moth larvae of the first generation are in the fruit. In the Pacific Northwest thinning should be done between June 15 and July 1. In other localities this work may be done earlier or later, but observation can determine the time with reasonable accuracy. In thinning, special care should be taken that as many of the wormy apples be picked as is consistent with the rapidity of the work. The wormy fruit thus removed from the trees should be buried, being covered with at least 6 inches of earth. It has often been recommended that the windfalls be gathered every few days and destroyed. In a small orchard this is practicable, but in a large commercial orchard it would be far too expensive.

Packing Fruit.—The place of packing the fruit is of the greatest importance when the codling moth is considered. The best plan and the one which is being generally adopted among the best Western orchardists, is to have the packing done in the orchard. A movable packing table is made upon runners and this is drawn through the orchard. As the apples from two rows of trees on either side are picked, they are carried to the table by the pickers. By this method the apples are not moved any considerable distance until packed, and the danger of bruising the fruit is thus reduced to a minimum. If infested fruit is taken into a packing house, the larvae crawl out of the fruit and spin their cocoons in the cracks and angles of the building. In the spring the moths emerge and fly to the orchards. By packing in the orchard the wormy fruit is piled up, and the larvae for the most part spin cocoons among the apples.

Many apple growers make the mistake of selling or trying to sell wormy apples as first-class fruit. It is a difficult thing to pack a box or barrel of apples and not put in a single imperfect apple, but the ideal of perfect fruit should be the growers' guide. Second-class apples should be packed and shipped as quickly as possible. The culls and windfalls should be promptly made into cider for vinegar or disposed of in some other way, thus preventing the escape of the larvae. If they are not so used, they should be buried. Experiments in burying culls and windfalls have shown that when the larvae leave the fruit they spin their cocoons on or between the apples and rarely try to reach the surface of the ground. If the larvae survive, the moths which emerge die, as they can not reach the surface of the ground.

Storing Fruit.—It is a great mistake to store infested fruit near an orchard, as when the moths emerge in the spring, they fly to the orchard, and in many cases a large percentage of the fruit near the storehouse is infested. The writer has studied several cases where this was true, and in each case the resulting loss could have been averted. If the fruit must be stored, the house in which it is stored should have no cracks or holes through which the moths can escape. A tight house can be fumigated with hydrocyanic-acid gas or with sulphur. A simpler way is to crush the moths when they have gathered on a window or on a screen; or, if left in the storeroom, they will die in a week or so.

Remedial Measures.

Remedial measures against the codling moth are those from which little or no benefit is derived except that of saving the fruit from attacks of the insect.

It is sometimes as well to know what not to use against an insect as it is to know what to use. The following remedies have been at various times suggested and have been found to be of little or no value: Moth balls hung in the trees and supposed to keep moths away; smudging orchards with ill-smelling compounds; plugging the trees with sulphur; plugging the roots with calomel; banding trees with tarred paper to keep the larvae from crawling up the tree; trap lanterns; baiting the moths with mixture of vinegar and molasses; spraying with ill-smelling compounds; spraying with water; and electric lights as a repellant of the moth. These so-called remedies have been tried so often that a fruit-grower is simply wasting his time and money when he uses them.

The efficiency of sprays against this insect was discovered in spraying for canker worms, which feed upon the leaves of the apple. Since that time the machinery and the solutions used in spraying have been greatly improved, and now this method is well known to be the best and most efficient.

Many farmers have a deeply rooted objection to spraying on general principles . They have never sprayed, and many of them are proud of the fact that they do not spray their orchards, even if they lose the larger part of their fruit which otherwise might have been saved. The more progressive and business-like apple growers are the staunchest advocates of spraying, and their efforts are uniformly successful. Experience gained by several years of spraying always brings about greater efficiency and a reduction of expenses. A fruit-grower who wishes to begin spraying can well afford to study the spraying operations in other orchards and familiarize himself with the geenral methods.

Spraying Materials for Use Against the Codling Moth.

Contact Insecticides.—The insecticides which kill by touching the insects, such as kerosene emulsion and whale-oil soap, applied frequently, have in a few experiments been found efficient against this insect. On account of the expense and the necessity for frequent application they have never been used to any extent.

Arsenical Sprays. — The arsenical sprays contain arsenic as the poisonous ingredient. There are several of the spraying compounds upon the market and many others which the fruit grower can prepare himself.

Paris green is probably the best known of these arsenicals. It is a definite chemical compound of arsenic, copper and acetic acid and should have a uniform composition. It is a rather coarse powder and has the fault of settling rapidly. In the East it costs 20 cents a pound, while in the West the cost is 25 cents.

Paris green may be prepared for spraying as follows:

Paris green	pounds	1
Lime	pounds	1 to 2
Water	gallons	100 to 250

The lime should be fresh and should be slacked in quantities as needed. Mix the Paris green with a little water

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until a paste is formed, and then add this to the required amount of water, to which the lime has been added. A good average strength to use is 1 pound to 150 gallons, but it must be weaker on trees with delicate foliage, such as peach. Many fruit-growers are using it on apple trees as strong as 1 pound to 100 gallons. Any of the other arsenical sprays can be used; see formulae elsewhere in this issue.

How to Apply the Spray.

The spray should be applied to the leaves and foliage so that a thin coating will remain after the water has evaporated. To do this the spray should be applied with great force so as to form a dense mist. At all times the solution in the tank should be kept thoroughly agitated, especially if Paris green is used. Probably the most rapid progress in spraying can be made in the following way: Drive the outfit between two rows and spray half of each tree in each row. The routes followed in an orchard should be governed by the position of the water supply. If the wind is blowing it is best to go parallel with it rather than at right angles to it, and advantage may be taken of the wind by allowing it to blow the mist into the trees.

Time of Application of Spray.

The most important consideration in spraying is the time of the application. The time of application for the codling moth should depend entirely upon the stage of the insect, as the greatest efficiency is obtained by spraying just when the larvae are entering the fruit or immediately before. The sprayings are directed against the first generation of the codling moth. Two of these sprayings are advised, one a few days after the blossoms have fallen and before the calyx closes, and the other two weeks to a month later, when the larvae are entering the fruit. In cases of bad infestation, when the preventive measures have been neglected, another spraying may be added.

The later sprayings are directed against the larvae of the second generation when they are entering the fruit. The time this generation enters the fruit varies with the locality and the seasons, in the same locality, but it is easily found by watching the fruit for the first new entrance holes; or spraying may be commenced about twenty-one days after the date when the largest number of larvae of the first generation are ready to spin their cocoons. The larvae of the second generation usually begin to enter the last week in July, and the majority enter in August, while a few enter in September. The number of sprayings to be made against this second generation depends upon the efficiency of the preventive measures and the early sprayings. Two sprayings are usually sufficient; but if infestation is bad, three should be made. The quantity of lime used in the last spraying should be reduced to the minimum required, as the lime on the ripe fruit reduces its market value.

Light showers have but little effect in washing away the spray, but a continued rain or a heavy shower makes it necessary to repeat the spraying. The lead arsenate is less affected by rain than the other compounds.

The young larvae are killed by the poison they eat before they have entered the fruit. They get it in the calyx, on the sides of the fruit, or on the leaves. Recent work tends to show that a great many get the poison by nibbling the poisoned leaves.

Banding.

The use of bands to trap the full-grown larvae of this insect was the only remedial measure of value before the use of arsenical sprays was discovered. When an orchard has been given good care, preventive measures have been fully carried out, and spraying is thoroughly done, it is unnecessary to use bands. If, however, the trees are old, have cracks and holes in the trunks and branches, and are close together, so that the spraying can not be well done, it is quite necessary to use these bands; or if it is desired to bring the insect under control in a badly infested orchard, the bands can be used with good success as an additional method of spraying.

Banding for this insect in general is simply offering a good place, in which the larva will spin its cocoon and killing it after it has done so. Cloth bands, from 10 to 12 inches in width, are folded once lengthwise and placed around the tree. They can be fastened in such a way as to be easily removed and replaced by driving a nail through the ends and then nipping off the head at an angle so as to leave a sharp point. If a tree is large, one band should be placed on the trunk and one on each of the larger limbs. (Fig. 2.) Cloth bands of any heavy, dark-colored stuff are much preferable to bands of hay or paper. When bands are used, other places in which the larvae might spin cocoons should be destroyed or rendered unsuitable. It is, of course, a most imoprtant point that the larvae which go under the bands be destroyed. To accomplish this the bands should be inspected regularly at intervals of ten days. At best, banding is but little effective in badly infested localities if used alone, but it is a most valuable adjunct to spraying.

North Yakima (Wash.) Fruit-Growers.

T. W. Clark sends us some notes concerning the meeting of the Horticultural Union at North Yakima, Wash. This is one of the coming fruit sections of the Pacific Coast states, and the meeting was very interesting and profitable. The growers were much encouraged over the outlook for fruit-growing in that section, especially where fruits are grown under irrigation, which enables them to regulate conditions more perfectly than where irrigation is not practiced. Among those who took part in the program was Mr. Joseph Lannin, formerly president of the Michigan Horticultural Society. During the World's Fair at Chicago, in 1893, Mr. Lannin had charge of the fruit exhibit from that state, and was so impressed with the fruit exhibit made by the State of Washington that he resolved that he would go west and engage in fruit-growing in the newer country.

Prof. Huntley, formerly of the Idaho Experiment Station, read a paper on propagation, which was much enjoyed. He was asked whether or not it is advisable to work over trees of unprofitable varieties, and replied that that would depend on conditions. As a rule, where trees are thrifty, he said, it will pay to top-graft or bud, or both, and thereby save time in getting the new trees into fruiting, rather than to dig out the old ones and plant new ones.

Prof. N. O. Booth of the Washington Experiment Station, talked on pruning and also discussed some of the more common insect and fungous enemies. He said that in his investigations in Washington he had not discovered any very bad effects from woolly aphis. Mr. Smiley Walden said he had had woolly aphis in his orchard for eight to ten years, and he could not discover any bad effects from the insect. This set at rest the fears of many orchardists who had dreaded the attack of this insect.

As regards the codling moth, Prof. Booth said this insect is with us, and will always probably be with us in greater or lesser numbers. The only remedy as yet discovered is to fight them with arsenical sprays. If Paris green is pure, it is perhaps as good an insecticide as we can use, but we must be sure it is pure. It should test not less than 50 per cent and 60 per cent is better.

The question was asked as to whether the poison can be applied best in the form of dust or in liquid form, and he said that while he had not tested the dust sufficiently as yet, his experience so far has been very satisfactory.

Mr. E. Remy said he had tried the dust process last year, and was so satisfied with the results that in future he will use nothing but the dust process. He had used one pound of Paris green to twenty pounds of lime, and found this much more convenient to use than water.

State Horticultural Commissioner Van Holderbeck talked on the "Key to Success in Fruit-Growing," and said that the subject was summed up in the statement that the key to success is knowledge. Mrs. W. L. Wright read a paper on "The Rancher's Wife," which was much enjoyed, especially by the ladies present.

The whole meeting was a success, and the members of the Union feel that they are to be congratulated.

T. W. CLARK.

North Yakima, Wash.

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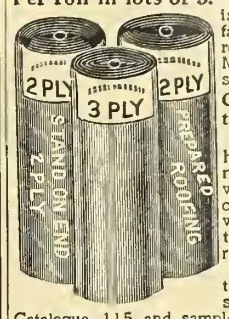

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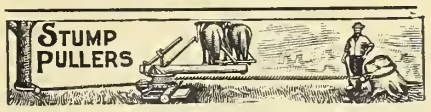

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Dry Bordeaux Mixture

There was considerable complaint last year among those who usedthe dry process of spraying, to the effect that while the lime dust was effective in keeping insects in check it was not as good a fungicide as the liquid Bordeaux mixture. The Missouri Experiment Station had considerable compaint along this line, and accordingy Dr. Bird, acting chemist, began work trying to perfect a dry powder which would be as effective as a fungicide as the liquid Bordeaux. In this he was successful.

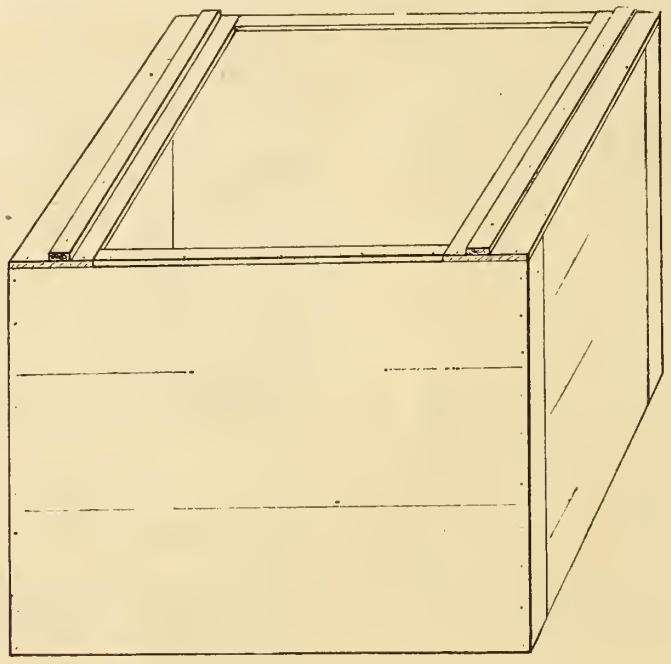

Fig. 1

Perhaps it should be explained here that the "Bordeaux mixture' which has been in use heretofore has been made by preparing a copper sulphate solution and then using this to slack the lime to a powder. It has been claimed that the heating of tne lime when slacking destroys the toxic effect of the copper, and it has been stated by Dr. Bird that this is so. The resulting powder is a brownish powder, which is really little, if any, better than air-slacked lime, according to those who have tried the same. The newer mixture is said to be chemically the same as liquid Bordeaux; whether it will work out as well in actual practice remains to be seen.

Dr. Bird's account of the making of his new dry Bordeaux powder is as follows, having been published in Bulletin No. 60 of the Missouri Experiment Station:

The Department of Horticulture asked for a fine dust that might be used in place of the liquid "Bordeaux Mixture" for spraying trees against fungi. A powder which contains copper in the same chemical state that exists in properly made liquid "Bordeaux Mixture" can readily be prepared by following the directions given below:

Materials required to make seventy pounds of a stock powder:

Four pounds of copper sulphate (blue stone.)

Four pounds of good quick-lime.

Two and a half gallons of water, in which to dissolve the copper sulphate.

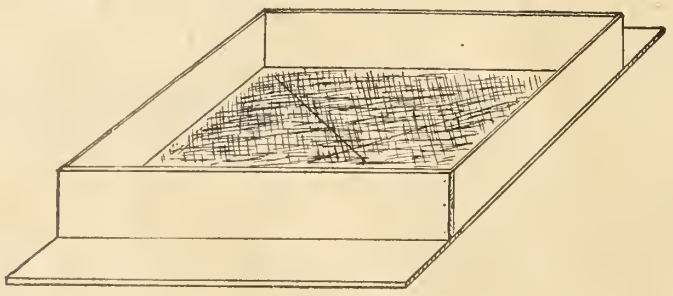

Fig. 2

Two and a half gallons of water, which is to be added to the quick-lime,

Sixty pounds of air-slacked lime which has been sifted through the fine sieve mentioned below.

A box, about 3x3x3 feet, into which the material is sifted. The arrangement shown in Fig. 1, will facilitate the sifting and prevent excessive flying about of the fine dust.

A wire sieve made like sketch Fig. 2, except that it should have a cover. The bottom should be of rather stout wire gauze having 25 or 30 meshes to the inch. This sieve fits loosely between the strips on the box (Fig. 1) and can be shaken back and forth over the opening without allowing much lime dust to escape.

A wooden frame (of 1x1 in. strips), which fits snugly inside the frame of the sifter (Fig. 2), and is covered with fine, strainer-wire gauze having 100 meshes to the inch. This makes a false bottom to the stoutly made sifter and is used to separate the fine dust of the air-slacked lime and for the final sifting.

A wooden block to rub the material through the coarse sieve, Fig. 3.

Two close-woven, cotton flour-bags—one slipped inside the other—with which the lime material is filtered.

Directions—1. Break up into small lumps about seventy or eighty pounds slacked and perfectly dry sift it through the fine sieve (100 meshes.)

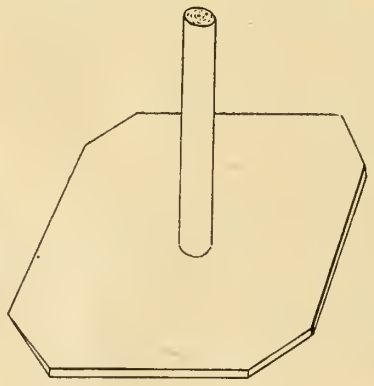

Fig. 3

2. Completely dissolve four pounds of copper sulphate in two and a half of quick-lime and spread it out so that it will become airslacked. When gallons of water. The easiest way is to suspend the sulphate in a coarse bag just below the surface of the water until it is dissolved.

3. Pour gradually two and a half gallons of water over four pounds of good quick-lime in such a manner as to slack it to the finest powder and give a god milk of lime solution; let it cool.

4. Put sixty pounds of the sifted, air-slacked lime into a shallow box—one in which the material can be well worked with a hoe or shovel.

5. Pour the well stirred milk of lime and the copper sulphate solution at the same time into a third vessel and stir until the whole is thoroughly mixed.

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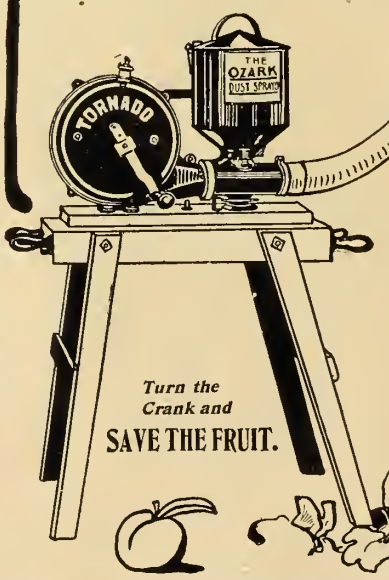

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It will have a deep blue color and be thick. This is so finely divided that it will remain in suspension for hours.

6. Pour this immediately into the double flour bag filter and squeeze out most of the water.

7. Empty this wet, blue material at once (do not let it dry) into the sixty pounds of air-slacked lime and work it up so that it will be well distributed. If the resulting mixture is too moist add more air-slacked lime.

8. Rub this through the coarse sieve while still somewhat damp, mix thoroughly and spread out to dry.

9. When perfectly dry sift it through the fine mesh sieve, crushing all lumps. All of this can be readily made to go through the fine sieve, except the small amount of sand which may be in the four pounds of quick-lime. Mix so

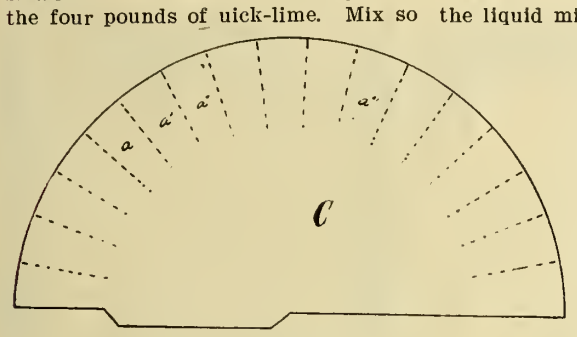


Fig. 4

Pattern for Core. Diameter is 2 3-8 times d of figure. Cut along dotted lines and after bending to cone, curve a, a', etc., outwards. See C of Fig. 5.

that the blue copper compound will be perfectly evenly distributed throughout the whole mass.

Store until needed; it will keep indefinitely.

This powder contains about three and a third times as much copper per gallon as is contained in the liquid Bordeaux mixture. It may be diluted to suit the need with powdered lime or flour, or may be used in this condition. When large quantities are needed use multiples of the quantities given above.

If one hundred and thirty pounds of slacked lime or an equal volume of flour is added to seventy pounds of the stock powder, the resuting mixture will have practically the same copper strength as the "four-four-fifty" liquid Bordeaux mixture. It makes no difference whether this added lime be partially or completely slacked, as no subsequent reaction takes place in

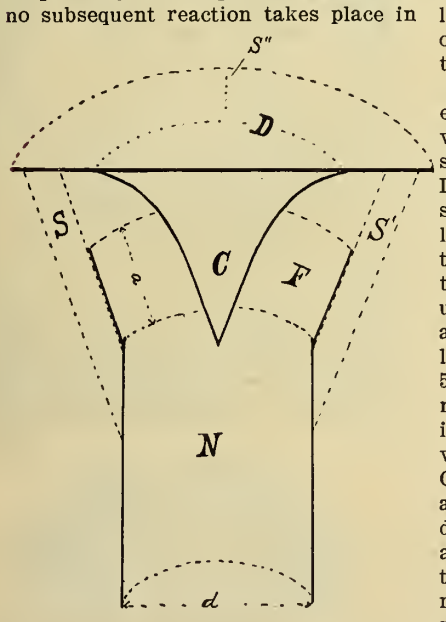


Fig. 5

Nozzle. d—outside diam. of nozzle furnished with machine; diam. at bottom of flange F—d; diam. at top of flange F—1 1-3 times d; height, a, of flange—½d; diam. of top piece, D—2¼ times d. N fits over straight nozzle. C is cone (see Fig. 4). F is flange. D and C deflect dust outward, S, S', S" support deflector.

the dry powder. Any other insecticide, as paris green, for canker worms, may be added in the form of powder in the proper proportions.

The usual method of preparing dust containing copper seems to have been to slack the lime with a strong solution of copper sulphate. When made on a small scale the resulting powder contains more or less of green and blue copper compounds mixed with much of a dark brown compound. The former are probably basic sulphates of copper, or of copper and calcium (lime), and the latter a hydrated copper oxide, formed by the action of the steam in the slacking process. When made on a large scale most of the copper appears at the end in the oxide condition, and a not inconsiderable quantity of the mixture is too coarse grained to stick very well to the non-resisting leaves.

While this oxide condition of the copper undoubtedly has some fungicidal value, the opinion of experimenters seems to be that its value is not at all equal to the value of copper compound contained in a properly prepared liquid Bordeaux mixture. The dry mixture here proposed is the same that exists on the leaf after the water of the liquid mixture has evaporated, except that there is present more lime relative to the copper and less calcium carbonate. As soon as the powder gets wet, calcium carbonate begins to form, of course.

Whether or not this powder when applied to the leaf wet with dew or rain will prove as effective as the liquid Bordeaux mixture, only experiment will show. It seems to have the requisite properties, chemically speaking, namely, hydroxide condition of the copper and the necessary excess of lime to prevent injury to the leaves, at the same time exposing fungus spores already upon the leaf or which may fall upon it afterwards to the toxic action of the copper. It being so extremely finely divided it seems possible to cover the wet leaf surface as effectually as when water is used as a carrier of the toxic agent. The subsequent solvent action of atmospheric water and substances produced by the leaves and germinating spores are very likely the same with either material.

In a bulletin to be issued by the Horticultural Department at the close of this season the results of practical tests with the powder will be presented. If any one tries it, we shall be obliged if he will report the results to us and tell us exactly how he prepered it, the number of pounds of blue-stone, quick-lime and slacked lime he used as well as the appearance of his mixture and how he applied it to the trees.

Recently a large orchard was visited where the trees were being sprayed with dust. The nozzle of the dust sprayer did not seem very efficient. If instead of a stream of dust from a straight nozzle there is formed at the lower branches a dust cloud, larger than the tree, which sowly rises up through the tree, the dust is distributed more economically and the leaves are covered more effectively. A nozzle like that shown in cross-section in Fig. 5 creates a good cloud and can be made of tin at any tin shop. Fig. 4 is a pattern for cuting the tin which when folded forms the deflecting cone, C of Fig. 5, cut along the dotted lines and after bending to form a cone solder it together, curve the pieces like a a etc., outwards, solder the cone to the circular piece of tin, D, Fig. 5, now connect the whole to the nozzle by narrow strips of tin, S S' etc., Fig. 5, turned edgewise to the opening. This nozzle N should fit over the straight nozzle furnished with machines.

The following remarks upon powder spraying mixtures were furnished by Professor Whitten, of the Department of Horticulture:

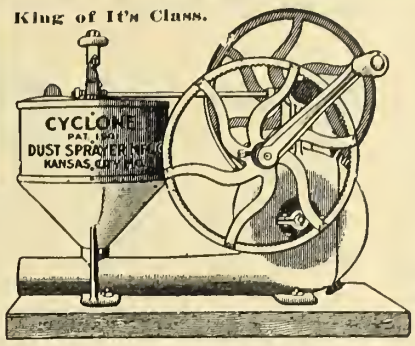
In the past few years a number of fruit growers in Missouri have become interested in using dry sprays instead of the liquid espraying mixtures that have formerly been popular. This interest has been aroused on account of the fact that dry fungicides and insecticides are much lighter to handle and can be applied much more rapidly than those which are applied in water.

Some of our best fruit lands are on steep hillsides, where an enormous amount of power is necessary to haul the heavy liquid spraying mixtures through the orchards. In other cases spraying is done when the ground is soft in spring and hauling heavy loads through the cultivated orchards becomes very burdensome and also cuts up the ground, leaving it in an undesirable condition. In many cases, on the well drained lands where surface ponds cannot well be made to hold water, not enough water can be had within reasonable distance to enable the grower to use the liquid spray. It also not infrequently happens that there are not enough teams in the neighborhood to spray these enormous orchards at the proper time if the heavy liquid sprays are used.

There is great need of an efficient, dry Bordeaux mixture that may be economically made by the grower himself. The powder recommended in this circular has been designed by the acting chemist with the hope that it will meet the needs of the fruit-growers, especially those who cannot use the liquid spray. This dust spray will be tested practically in the orchard of the Experiment Station during the present season and it is hoped that many orchardists will apply it and report results to the Station.

If it is desired to use an insecticide for canker worm or codling moth one pound of paris green may be added to twenty pounds of the dry Bordeaux mixture.

King of It's Class.



On a Business Basis

To sell goods requires CONVICTION OF THE VALUE OF THE ARTICLE THAT IS OFFERED. We establish the VALUE OF OUR GOODS BY THE TESTIMONY OF OUR PATRONS.

Results of a comparative test made by CORNELL UNIVERSITY at Ithaca, N. Y., under the direction of Prof. John Craig; conducted by Mr. J. Corwin Jacks at Batavia, N. Y.

ORCHARD RECORD

DUST SPRAYED, 48 crates perfect fruit, 18 crates inferior, total 66 crates. LIQUID SPRAYED, 35 crates perfect fruit, 15 crates inferior, total 50 crates.. Trees same age, same size, same variety.. On DUST SPRAYED trees, the fruit was larger, more fair, and of higher color, than on the liquid sprayed. Work done THREE TIMES FASTER than by the liquid process.

COLD STORAGE RECORD

At the recent meeting of the W. N. Y. Horticultural Society recently held at Rochester, N. Y., Prof. Craig gave a talk on DUST SPRAY, referring to the experimental work Prof. Craig said, "that from one barrel each of apples taken at random, from each of the three kinds of cared for trees, DUST SPRAYED, LIQUID SPRAYED, and NOT SPRAYED, the result was as follows:

1st.—DUST SPRAYED trees, 72 per cent No. 1 fruit, 28 per cent No. 2.

2nd.—LIQUID SPRAYED, 62 per cent No. 1 fruit, 38 per cent No. 2.

3rd.—NOT SPRAYED, 21 per cent No. 1 fruit, 13 per cent No. 2, 5 per cent No. 3, and 60 per cent No. 4.

ONE APLICATION OF THE DUST EFFECTUALLY cleaned out the Larvae on currant bushes and kept the leaves on all through the season.

The COLORADO BEETLES WERE KILLED, and the BLIGHT ON POTATOES HELD OFF MUCH LONGER THAN BY THE LIQUID PROCESS." Yours sincerely, J. CORWIN JACKS.

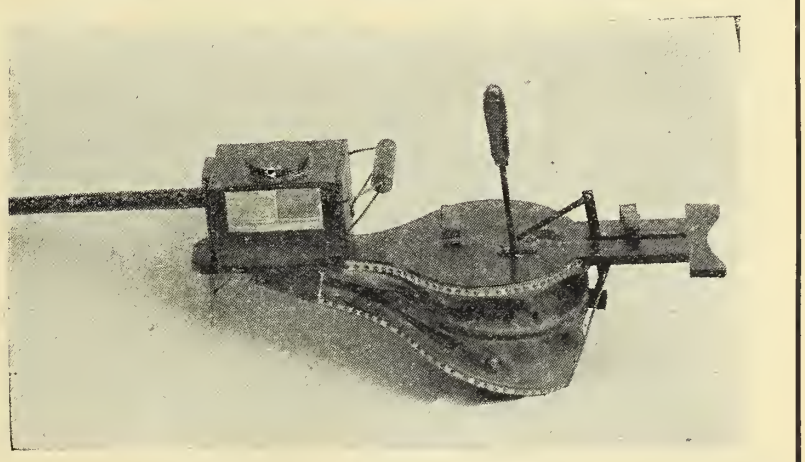
CUT OUT THIS STATEMENT FOR REFERENCE, it will not appear again. Our descriptive catalogue will be sent FREE ON APPLICATION. Our "All About Dust Spray" treatise contains 60 pages. It is replete with practical and scientific information on this subject, right up to date. The commercial growers use our machines and process, we are in close touch with each other. The information contained in this book cannot be obtained elsewhere. If you wish a copy, please write us inclosing 2 cents to cover postage.

DUST SPRAYER MFG. CO., Kansas City, Mo.

Headquarters for Dust Spray Appliances and Information.

THE GRAVES DUST SPRAYER COMPANY

Manufacturers of Dust Sprayers and Insect Exterminators.



(Patented June 3, 1902. No. 701560.)

This double bellows Dust Sprayer has been thoroughly tested and highly recommended by Fred W. Mally, State Entomologist of Garrison, Texas; also J. W. Hursten, Boll Weevil Commissioner of Independence, Texas. "The above Sprayer works with accuracy, ease and speed; its constructions are apparently perfect."—T. D. L. Kinney and R. J. Spinks of Lufkin, Texas.

The Dust formula is the successful mode of dealing with the insect pest. The Dust Sprayer method endorsed by the Missouri Experiment Station at Columbia, Missouri; also by Mr .W. D. Maxwell of St. Joseph, Mo., and I. B. Lawton, secretary of the State Horticultural Society at Bentonville, Arkansas; D. L. Cross, editor of Benton County Sun, Bentonville, Ark., and other men of experience endorse the process.

The above Sprayers will be furnished in three sizes:

DIMENSIONS:

	Width of Bellows.	Length of Bellows.	Capacity of Dust Box.	Price
No. 1	10 inches.	18 inches.	1 gallon.	$6.00
No. 2	12 inches.	20 inches.	5 quarts.	7.50
No. 3	20 inches.	30 inches.	3 gallons.	15.00

One bushel of dust will spray 100 trees for the season. We prepare two formulas, one for fruit, vines and plants; also for mites, lice, etc. It is effectual and cheap. It is a success with canker worms and cotton pests. The Dust will be furnished in sacks at $1.00 per bushel. For further information write for circular.

THE GRAVES DUST SPRAYER CO., Bentonville, Ark., and Pattonsburg, Mo.

Here are the best things advertised in this issue: Spray pumps, on page 2; Disparene, on page 7; dust sprayers, on page 28; seeds, on pages 11 and 15. Missouri Valley Seed Co., headquarters, St. Joseph, Mo.

Gardening Department

Asparagus Culture.

Asparagus plants can be easily grown from the seed in one or two years' time. If you are in no hurry this is the best plan, but of course, if you wish to get a bed started in a short time, it is better to buy the plants of some seedsman, as you can thus save a year or two in time. Plant the seed very early in the spring, the earlier the better, in rows a foot apart. As the seed is slow to sprout, it is a good plan to mix in a few radish seed as they will come up early and mark the row and you can tend and keep the weeds down while you are waiting for the asparagus to come up.

The little asparagus plants are very small at first and you should look carefully in weeding or you will pull them up. As soon as the asparagus shows, take out the radishes or they will crowd it out.

Keep well tended and free from weeds, in fact tend just like you would a bed of onions from seed. The plants grow all summer and can be dug in the fall and stored in the cellar or left in the ground till spring.

Early in the spring take up the plants and set them where they are wanted, first putting the bed in the best of condition. Spade it up very deep and work it up fine. It is a good plan to work in a lot of well rotted manure to make the soil loose and rich. A tolerably moist place is good, but this is not important. Better choose the place that will be most convenient and fix the ground to suit. You can't make it too rich.

Mark out the rows from two to four feet apart and set the plants two or three to the foot in the row. Set about four inches deep just about like you would raspberry pants. Cover all over wtih dirt. The plants are easy to live and if they are covered with dirt they are almost sure to come well.

Keep well tended the first season like you would potatoes. Hoe or cultivate just as suits you best. In the fall cover all over with manure deep enough so that weeds cannot come up through it. If any weeds show through in the spring put on more manure. Keep this up every season and you will have no more trouble with the bed. The asparagus can begin cutting the second season and from then on the bed will get better every year for a long time and is a permanent affair.

See any good seed or nursery catalogue for varieties.

Onion Culture.

Onions can be grown on almost any good soil, but the richer it is the better, and it should be free from weeds. Ground that is infested with weeds will cause more work than the crop is worth. Plow in the fall, if possible, and harrow down well in the spring. Work the soil several times over, but shallow, till the top two inches or so is as fine and mellow as possible. Get the seed or sets in as early in the spring as the ground can be got ready, for onions are hardy things and will stand lots of cold. If they are in early they will get the start of the weeds and tending will be easy.

Drill the seed in rows 11 to 15 inches apart and aim to put on five pounds to the acre. Iron Age and Planet Jr. are counted the best drills.

These machines will drop the seed evenly in a straight row at any desired depth and cover in nice shape.

As soon as the plants show in the row the cultivation should commence and be kept up about once a week till the crop is made. The combined garden tools are furnished with the proper hoes, etc., for this work. The object is to keep the ground stirred and kill the little weeds before they come up. If the ground is clean to start with, very little hand weeding will be necessary, perhaps twice in the season.

When the onions are the size of a straw they should be thinned to about two or three inches apart, as they will grow small and tough if crowded.

When the tops fall over, pull the onions and throw them in windrows to dry and after a few days of drying store them thinly on a barn floor. If piled too thick they will heat and spoil, and if not dry they will sprout.

Onions sets are simply little wee onions and are used to get an earlier crop than can be grown from the seed. The sets are put in thick in the rows about the same width as for the seed and are tended the same. They grow rapidly and besides being fine for early green bunching onions, they make a crop of dry onions early in the summer before the seed onions are ready.

The sets are grown by sowing the black seed very thickly, late in the spring, say in June. For keeping over winter they are spread on slat crates where they can get plenty of air.

A good crop of onions from either seed or sets is 300 or 400 bushels. I have had as high as 800, but this is rare.

Garden Notes.

First nice day that comes, get out and sow some radishes broadcast on any vacant ground you happen to have. Just harrow them in or rake them in and they will take care of themselves. Nine times out of ten they will make a good crop, and if they don't, you are out nothing but the seed, for the ground can still be used for other crops. I may have told you this before, but it is worth repeating.

Plant early peas now. They are hardy things and will stand lots of grief. As soon as the top of the ground is dry, plant them, even if there is still some frost below. I have had the ground freeze solid after the peas were sprouted and never hurt them. Of course it is the smooth peas such as Alaska that I refer to. The wrinkled ones, while they are good eating, are too tender. Half the time they make a poor stand and a weak vine. Plant the peas in wide rows and tend with a team. It makes better peas and less work.

Don't plant beans and corn till the weather and soil are thoroughly warmed up. Nothing is gained by rushing them. I never plant them till the smooth peas are up and green.

Get some Early Milan turnips and sow as early as you can. You can't get them in too early or too thin. If thick, they will do no good, but if you get them in thin they make rapid growth and make nice tender table turnips two or three weeks before early potatoes are ready.

Dip your seed potatoes this year and get rid of the scab. It costs but very little and is a sure cure, if you plant on ground that is not infested with the germs. The solution is made by using ½ pounds of powdered corrosive sublimate to 60 gallons of water. Dissolve the powder in a bucket of hot water and then pour it into the rest of the 60 gallons. Let the potatoes soak in this for two hours before cutting. I use a long trough wide enough for a potato scoop. The potatoes are scooped out of it into crates ready to cut. The solution is poisonous to drink, but not to handle. It will not injure the hands to work in it.

It is my humble opinion that gardening is the most natural calling for mankind. The earliest record we have of mankind, is of father Adam, a gardener. He was divinely appointed to that calling. From that day to this it is my belief that the happiest, most contented men are the gardeners. Every one, old and young, at this time of year feels a touch of that divine command to get out and "tend the garden." Old and young, we all get restless and uneasy at this time of spring, and are not contented till we can get out and make garden. With some, myself for one, it is chronic. Gardening is my real occupation, and always will be. In the winter time I take to the nearest o fthe professions, that of seedsman, and I know that it is the only kind of inside work with which I would be at all contented. Even it begins to tire me when April comes and it is warm enough to keep the office door open all the time.

Notes from a Seedman's Trial Ground.

Under this heading will appear from times, notes from my trial grounds, which are among the most thorough and complete anywhere in the West. Any of the Western Fruit-Grower Family are invited to send in small samples for trial of any interesting or valuable variety they may have.

The Crimson clover is dead. Too bad. In the east it is counted of great value and I have wished that we might grow it here, but this is the

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Send us today, your name and address on a postal and we'll mail you FREE our handsome illustrated Seed Catalogue containing Due Bill and plan good for 50c worth of Flowers or Vegetable Seeds FREE. Your selection to introduce
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Produced $1000.00 per acre last year. The EARLIEST POTATO IN THE WORLD. Most delicious in quality, heaviest yielder known. Ready for market in six weeks. Elegant 100-page Bargain Seed Catalog Free.
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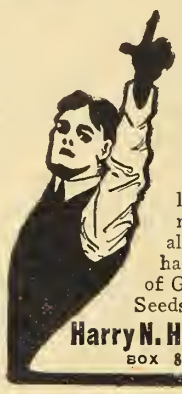
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Michigan Northern Grown Onion Seed.
45 cents a pound and up.
We sold 75,000 lbs. of this seed in 1902. Our customers report yields of 450 to 1,265 bushels of onions per acre from this seed. Some of them intimate that this seed is worth $5 to $10 per lb. more than the California grown seed sold by anybody. We guarantee this seed to be new and freshly grown. We have seed of all the leading and standard varieties. We make special prices on large lots. Onion sets of all varieties. Buy direct from the growers. Catalogue—extended and illustrated—free.
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Cabbage Seed that Grows
There is no doubt or disappointment when you sow Hammond's Improved Early Jersey Wakefield. Undoubtedly the purest and earliest strain known. The result of years of careful selection, both for earliness and perfect heads. Especially valuable to market gardeners. Hammond's Danish Ballhead. A sure header of large, compact heads. Our seed imported direct from R. Wibolts, Denmark. Guaranteed absolutely true to name. See catalogue for cash prizes. Catalogue free.
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164 pages, fully illustrated, colored plate, lithograph gold embossed cover. Every seed buyer should see it before ordering elsewhere. If you are a lover of flowers here is
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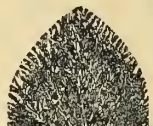
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Prize Collection Radish, 17 varieties; Lettuce, 12 kinds; Tomatoes, 11 the finest; Turnip, 7 splendid; Onion, 8 best varieties; 10 Spring-flowering Bulbs—65 varieties in all.
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Write to-day; Mention this Paper.
SEND 10 CENTS
to cover postage and packing and receive this valuable collection of Seeds postpaid, together with my new Instructive, Beautiful Seed and Plant Book, tells all about the Best varieties of Seeds, Plants, etc.
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SOME GOOD EYES
will see these good eyes. My seed potatoes, like everything I sell, are of the very best. They are Red River grown and you know what that means. My catalog tells how I grew a carload of potatoes to the acre. Write for it. It's free and I throw in a package of flower seed and one of melon seed besides. Samples of seed corn if you want them. $5.00 worth of seed free. Ask about it.
HENRY FIELD, Seedsman,
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The Ear Seed Corn Man.

50 KINDS SEEDS 25 BULBS 15¢
Hollyhock, Ten Weeks Stock, Calendula, Coreopsis, Canna, Ageratum, Snapdragon, Chinese Primrose, Sweet Alysum, Fox-glove Gilia, Monkey Vine, Balloon Vine, Baby Breath, Blue Bells of Scotland, Eastern Star, Petunia, Mixed Daisy, Mixed Asters, Begonia, Mixed Poppy, Mignonette, Calliopsis, Portulaca, Sweet Peas, Cypress Vine, Pansy(mixed), Sunflower, Salvia, Balsam
Will mail you FREE this fine collection of 50 Choice kinds of Flower Seeds and 25 Bulbs for 15 cents in silver or 8 two-cent stamps. Will send Seed Check and. Catalog free by sending your order at once.
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Choice kinds of Vegetable and Flower Seeds at 2 cents per Packet. Flower Plants, 5 cents each. Many choice novelties. Don't buy until you see our New Catalogue. Mailed FREE if you mention this paper.
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A full line of Shade and Ornamental trees and shrubs. Write for prices.

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For 20 years I have been growing nursery stock. My location makes my varieties sure of growth—certain of bearing. To prove my stock is right; prices right; services satisfactory, send me a trial order. Apple trees, 3 to 4 feet, 15c; Plums, same size, 25c; Cherries, same size, 25c; Concord Grapes, $3 per 100; Evergreens, 4 to 8 inches, 10c each—in large lots for less. Or send for my free catalogue—full of truthful pictures—honest descriptions.

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As good plants as were ever grown. List of varieties complete—over 50 of the best ones.

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Growers of Seed Corn Oats and Potatoes

Propagators of Small Fruit Plants, Fruit Trees, etc. **Northwestern Headquarters** for Strawberry Boxes, crates, etc., Planet Junior Machinery, Sprayers, etc. Catalogue No. 16—"A Treatise on the Strawberry."

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Strawberry Plants

All the leading varieties every fruit-grower ought to have: **UNCLE JIM, AUTO, SUCCESS and our IMPROVED BUBACH No. 5.** All money makers. No disease, rust or blight. Prices right. Thousands of choice plants given away with orders. Liberal discounts on large orders. Hundreds of thousands of **Blackberry and Asparagus Roots.** See our catalogue before placing your order

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SMALL FRUIT PLANTS

Now is the time to order for spring planting, as early orders save disappointment in spring rush, owing to shortage of varieties, if ordered late.

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Choice Strawberry Plants

Good supply of large Strawberry Plants for Spring of 1904. All the best Standard Varieties, with some of the Newest Out; also Cumberland, Gregg, Nemaha, Kansas, Haymaker, Cardinal. Raspberries, Grapes, Currants and Gooseberries; 25 years' experience in growing plants and fruit enables us to sell you good stock at the lowest price. Send card for descriptive catalog.

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D. Hill, Evergreen Specialist, **Dundee, Ill.**

third trial with me and it has failed to stand the winter. For Missouri and Kansas it would be all right, but in Iowa I guess we will have to give it up.

The Brome grass is all right. It was planted in June on land that had been overflowed, and made a growth nearly two feet high by fall. It has been green on the under side all winter and is now starting up vigorously. I believe there are great possibilities in it. Any grass that will make a big growth like that the first season, and is green so late and so early will be a good thing on any farm.

The Johnson grass is dead. I gave three cuttings of hay during the summer (this was its first year), but it will not stand an Iowa winter. Still it will be of value here it seems to me. Any plant that will make three cuttings of good hay the first season is worth having. It seems to me it would be of especial value to renters.

The leek has passed through the winter all right. I am not a lover of this oderiferous vegetable, but many people are. I never knew before that it would pass through an Iowa winter. It looks green and nice.

The strawberries all seem to be alive all right, unless it is Clyde, and it always does look poor till fruiting time. Senator Dunlap looks the best now. It is a berry that will stand more hard knocks than any variety I ever saw. It is willing to put up with everything.

I expect to try a lot of different sort of German and Russian tomatoes this summer. They have to have very early kinds to ripen at all there and it seems to me there ought to be some among the lot that would be of value here. I have imported all the leading kinds and will let you know later how they succeed here.

HENRY FIELD.

Shenandoah, Iowa.

Profits from Land.

Editor Western Fruit-Grower:

I want to corroborate and emphasize the statements in the Garden department in the February issue, as to possibilities of a town lot, in what is said of Mr. Ballard of Red Oak, Iowa.

A strict acount of actual sales made will verify the statements. From a residence lot of one-fourth acre, the backyard of which, thoroughly cultivated and enriched, of less than one-tenth of an acre in crops, for three successive years, accounts showed over sixty dollars worth sold each year besides home uses, no account of which was made.

The varieties and succession of crops grown by Mr. Ballard, however, for best results, may be improved, depending on soil and market a good deal. But that is itself a problem not easily solved. One with the years of experience along that line may come short of best results. But not less than two good paying crops each year shoud be the aim and can be secured. Celery is a profitable one for space occupied, and may be grown on ground after peas, radishes, early onions and early potatoes come off. It is a good plan to always plant early potatoes early, for celery, and to always plant radishes between potato rows when potatoes are planted. For head lands, if plowing is done, and along fences, rhubarb and asparagus should be grown, and so utilize every foot of land with some profitable crop. Winter radishes do better and pay better than early varieties for fall use, and even turnips. They may be planted in August on ground that cannot be used for celery, and before freezing packed in damp soil or sand in cellar or buried out doors beyond frost and may be had in midwinter or later, tender and crisp. And along lines of utilizing things it may be well to bear in mind that although not generally known, to the taste of some people radishes are quite as good, and even better than cooked turnips. If cooked enough they cook up as well as turnips and may be served mashed and while they retain a slight radish taste it is not, at least to some, so disagreeable as the cooked turnip flavor.

DAVID EMERICK.

Paris, Edgar Co., Ill.

To Prevent Potato Scab.

Potato scab is a disease which renders the potatoes unsightly, unsalable and unsuited for use. The best preventive is to treat the seed with corrosive sublimate.

Before planting, soak the seed for ninety minutes in a solution of two ounces of corrosive sublimate to sixteen gallons of water.

As a further precaution never plant potatoes on land where scabby potatoes have recently been grown. Fresh stable manure favors the development of potato scab and should not be used directly on the potato land, in places where potatoes are subject to scab. Newly cleared land or fresh clover sod are favorable to potato growing.—Mo. Agl. College.

Is a Rival to Lettuce.

Udo is the name of a Japanese plant the Department of Agriculture is trying to introduce into the United States to compete with lettuce as a winter salad. It has been in cultivation many years in Japan and probably was introduced there from China. It is to be had in all the tea houses in Japan, its crisp, blanched stems being served with salt or boiled with a sauce. The skins of the udo plant are much more paatable than celery and have none of the objectionable stringy fibers of that plant.

They have a fresh taste like the mid rib of a lettuce leaf, with a slight but most agreeable suggestion of pine flavor. The tenderest shoots of young celery are not more brittle than the blanched stems of the udo. Properly served, udo is a mass of thick, white shavings, two to three inches long by half an inch wide, with a brilliant silky luster. It should have a dressing of oil, vinegar, salt and pepper. It is marketable from earlyNovember until early in May and anyone familiar with the forcing of asparagus can cultivate it.

Still After the Mole and Major Holister.

Now, Major Holsinger, you've got me guessing. What kind of a critter is the "vole," anyway? Webster says the word means "to seize and hold," and as my natural history doesn't mention it, he must be a recent invention and something ferocious. Does he run at large in the piney woods? And does he wear a mane or bristles? The animal I dissected was identical in species with the one I caught in my mother's garden more than fifty years ago.

Neoga, Ill. J. T. WALLACE.

Major Holsinger is certainly mistaken on the mole question, no matter if he has all the professors in America to back him up—and I know he has some of them. It won't do to lay the blame on the large, soft, short-tailed meadow mice, or "voles," as the Major calls them. Of course the latter girdle trees in the winter, but the raised runs that disfigure our lawns and follow down a planter mark in the cornfields, leaving never a kernel of corn in their track, are moles, genuine moles. They have the fine, soft fur that boys formerly converted into money purses, and their sharp nose and tremendously strong back-handed claws fit them admirably for both the good and the mischief they do. I have seen a large handful of May beetles' wings at depositing places in their runs, and I have, on the other hand, had acres of garden and corn ruined by them. They should be encouraged in some places and discouraged in others.

BENJAMIN BUCKMAN.

Farmingdale, Ill.

The Black Locust in Kansas.

I have noticed in the Fruit-Grower a discussion of the black locust as a shade tree. We have planted it for twelve years past, and now regret our planting, and would not recommend it for this part of Kansas. Catalpa beats all other trees for timber planting. Trees planted twelve to fifteen years ago now make three to five good posts per tree. Worms do not touch or harm them. Sprouts from stump will grow ten feet the first season. They should be planted 6 by 10 feet, and cultivated well for five years.

The Fruit-Grower is a most welcome visitor. As a help to fruit culture it is unsurpassed. I almost regret that my subscription is paid up so far ahead, but if I can spare the time and the use of my January number I am going to get some subscribers.

Eldorado, Kan. Z. PEFFLEY.

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More than a million and a quarter of them are in use and several hundred thousand farmers say that they are the best investment they ever made. They'll save you more money, more work, give better service and greater satisfaction than any other metal wheel made—because **They're Made Better.** By every test they are the best. Spokes united to the hub. If they work loose, your money back. Don't buy wheels nor wagon until you read our book. It may save you many dollars and it's free.

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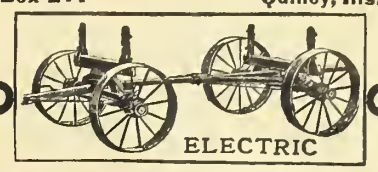

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32 Years World's Headquarters for Everything.

showing the clerks at work, the goods, and, in fact, an interior sectional view of every floor of the tallest commercial building in the world. It makes a very attractive and interesting wall hanger, and is one of the most complex and complicated pieces of lithography ever attempted. If you want it send four two-cent stamps, about what it cost us to print. Ask for our ten-color Wall Hanger. If you want to save your dealer's profits on everything you eat, wear or use, send 15c for our 1128-page Wholesale Catalogue. Millions are saving ⅓ of their former expenses by trading direct with us. If you want both Wall Hanger and Catalogue enclose 20c.

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Strawberries

STANDARD BRED PLANTS.

Catalogue Free, which explains plant breeding, irrigation, and how I was able to pick strawberries for six months in 1903.

Cumberland, Cardinal, and other Raspberries, Blackberries, etc.

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CHOICE STRAWBERRIES

I have 90 acres of them, 30 acres especially for plants. Write me your wants. Catalogue Free.

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AUSTIN'S DEWBERRY

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Original propagator and introducer. Headquarters for plants. Descriptive circular and treatise on dewberry culture, for your address on a postal card, if you please.

Pure Kansas, Gregg and Cumberland

Raspberry Plants

Also a general stock of Nursery Stock. Send for catalo ue.

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PLANTS OF THE **Beaver Strawberry**

Greatest Production of the Greatest Amateur Grower **FREE**

to our customers this spring. Send your name and learn about this offer.—

M. CRAWFORD CO., Box 1004, Cuyahoga Falls, Ohio.

Raspberry Plants

THE KANSAS—King of the blackcaps; medium early, large size, great productiveness, excellent quality and perfect hardiness make it superior to any other variety. A limited supply of choice plants for Spring delivery. Write for prices.

W. W. CLARK, R. 1, Atchison, Kansas

Dewberry Culture

40,000 plants for 1904, Lucretia, Premo and Austin. Have fruited the Lucretia for 11 years without a singe failure. As the roots of the Dewberry run deep into moist ground, they will stand more drouth than any Blackberry or Raspberry. Address

GEO. L. GAST, LeCLAIRE, IOWA

Questions and Answers.

(Continued from Page 21.)

ticularly bad. In some cases twigs with fruit would die, the leaves becoming brown and the fruit withered. What was the cause, and what the remedy?

The injury to the foliage may have been apple scab, which was particularly bad in some sections last season. The remedy is to spray with Bordeaux mixture, beginning as buds are unfolding in spring. The twigs which died were blighted. They should be cut out and burned.

—

H. F. B., Elbfeld, Ind.—Should one-year-old nursery trees be cut back this spring to 18 inches or two feet, if tops are wanted that low, or should they not be cut back while in the nursery, but allowed to wait until transplanted to the orchard? I want low, stocky trees.

Cut the trees back in nursery, and form the heads where wanted.

—

Morris Walton, Browning, Ill., wants to know what nurseryman can furnish tamarack or white cedar trees. He says he thinks the tree also goes by name of black larch. Who can furnish trees?

—

E. C. B., Higginsville, Mo.—I am bothered with canker worms every year, although I sprayed with dust last year. Is the dust as good as liquid spray? Has anyone used dust for San Jose scale? How will one know when San Jose scale gets in his orchard? Where can I get ready-made dust for sprayers?

Canker worms have been controlled by many growers using the dust process, which will permit the mixture to be made unusually strong. We have never heard of anyone trying to control San Jose scale with dust process, and doubt if such attempt would succeed, on account of the scale-like covering of the insect. In January Fruit-Grower an article covered the matter of identifying San Jose scale. The Dust Sprayer Manufacturing Co., 510 Broadway, Kansas City, Mo., and Leggett & Brother, 301 Pearl St., New York, have dust ready-made; Missouri Valley Seed Co., St. Joseph, Mo., are Western distributors for Leggett & Brother.

—

G. L., Pittfield, Ill.—What do you think of the prize article on San Jose scale in Farm Journal, by Frank Dexter, Los Gatos Cal.? He says he uses one pound of caustic soda to six gallons of water and got rid of the scale on his trees, the mixture killing within an hour after it is applied.

Elsewhere in this issue, and also in February number in article by Mr. Brown of Delaware, the statement is made that it is not best to rely on this mixture; that the lime-salt-sulphur mixture has given such good returns there is no need of experimenting with this other mixture, which in some cases, at least, has not given as good results.

—

R. M., Kingfisher, Okla.—Is there a difference between the Cardinal and the New Cardinal raspberries, or is it but one variety?

There is but one variety. When the Cardinal was first introduced it was called "the New Cardinal," but it is no longer new. Cardinal is the proper name.

—

The following questions were referred to Major Holsinger and his replies were received too late for his department; hence they appear here:

Several subscribers ask proper time to set asparagus, best variety, etc. As early in the spring as possible is best, although it can be done safely as late as June 1. So can potatoes be planted late, but the results are not so good. Plant in rows four feet apart and two and one-half feet in row; strike a deep furrow, drop plants in bottom, covering two to three inches. As the plants grow, cultivate, filling in furrows gradually, using care not to cover plants, cultivate clean and all that you can. It will repay you to cultivate late. You can't cultivate too much.

Another asks: "Do I understand you that I can cut some asparagus the first season?"

By no means. If you examine your plants you will find one or more eyes. If these are destroyed the plant dies, hence care is necessary to not cover the plants. If well cultivated and they make a good growth, they will form many eyes for the next year. Some of these may be cut for table and no damage done. If for market purposes, it were unwise to cut the first year after planting, but instead secure a good, strong growth for the next year.

—

S. A., Meridan, Kan.—Wants information as to the merits of Milam apples and its objections. It is an early winter variety and too small. They do not bear as early as Missouri Pippin; I know no tree that does. I feel sure you will make a grave mistake in planting Milam. There are dozens of varieties that will pay you petter. Don't let any agent talk you into planting it. I have had only one tree of it and that was enough.

—

H. A. D., Missouri Valley, Iowa.—Here we frequently lose a strawberry crop by late frosts. Do you think a bed could be covered with light slough hay enough to protect from frost without damage to the plants or do you know of a better way?

Slough hay grass has been considered a good mulch for strawberries. It is free from obnoxious seeds. Should frost threaten it could be used to cover the plants and doubtless would protect them from frost. Care should be taken to not let it remain too long. We have used our mulch as such a protection with profit. I feel certain that slough hay would be equally effective. If occasion requires I would try it.

—

H. S., Roseburg, Ore.—I want to plant out some pear trees and somebody told me the Garber pear was a better fruit than the Kieffer pear. Will you be so kind and give me your advice as to which you think is the best tree and the best fruit for the market. Do you know a pear by the name of King Carl?

The Garber will not compare favorably with Kieffer because of its tendency to blight. In 1902 I had 100 Garber, planted 3 years, from which I had fewer pears than from 5 Kieffer trees that I used to fill up the block. Many of the Garbers showed blight and some were dead. I do not consider the fruit an improvement over Kieffer. Have not fruited King Carl; have it planted two years. It is well spoken of, but then it is new.

—

H. L. T., Zion, Pa.—I planted a small bed of asparagus three years ago, which I intend to sell at a near market. But as I have only a few hundred roots planted and nothing else planted that will be ready for market by the time the asparagus is ready, I am puzzled to know just how to arrange. I would like to know how to keep the asparagus fresh, if I cut say once a day and go to market Tuesday and Saturday of each week. This would cause the asparagus which is cut on Tuesday to lie until Saturday morning before I could take it to market. People in our community practice this plan and get their asparagus to market in good shape, but just how I do not know and cannot find out.

Cut the asparagus perfectly dry, bunch and cut the butts off even. Take a tub or vessel of some sort cover the bottom with water to depth of one-fourth inch, set the asparagus bunches upright in the vessel. Don't wet the tops. It will keep several days if handled in this way. When weather is very warm, if the grass has been wet, it will soon heat. During the early season it can be handled much more easily than later.

Here are the best things advertised in this issue: Spray pumps, on page 2; Disparene, on page 7; dust sprayers, on page 28; seeds, on pages 11 and 15. Missouri Valley Seed Co., headquarters, St. Joseph, Mo.

SAVED

A Billion Dollars to the Dairy Farmers & Buttermakers of the World

That's what the DE LAVAL CREAM SEPARATORS are estimated to have done since their invention twenty-five years ago. From creamery to farm their use has spread all over the world, until now more than 500,000 machines are in use. No other invention ever did nearly so much for dairying.

Have you had your share of this great saving? If not, there could be no better time to get in line for it.

Don't Let Any More of It Go to Waste.

Send for a catalogue and name of nearest local agent.

The De Laval Separator Co.

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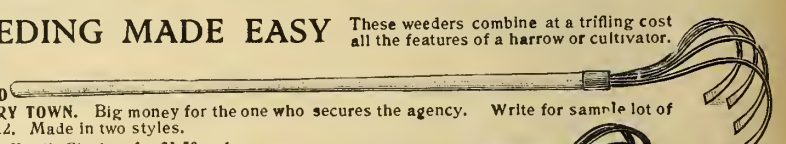
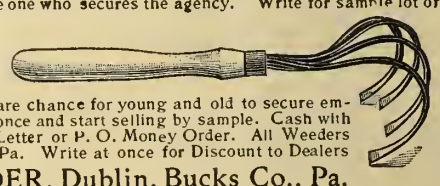
WEEDING MADE EASY

These weeders combine at a trifling cost all the features of a harrow or cultivator.



ONE AGENT WANTED IN EVERY TOWN. Big money for the one who secures the agency. Write for sample lot of 3, 6 or 12. Made in two styles.



3 Long Handle Weeders for $1.50 and 1 Small Weeder free. 6 Long Handle Weeders for $3.00 and 2 Small Weeders free. 12 Long Handle Weeders for $6.00 and 4 Small Weeders free. This is a rare chance for young and old to secure employment. Order your sample lot at once and start selling by sample. Cash with order. Send money by Registered Letter or P. O. Money Order. All Weeders are sold F. O. B. Perkasie Station, Pa. Write at once for Discount to Dealers and Agents. Address

The Free Small Weeders will help to Pay Express or Freight Charges.

LEVI D. YODER, Dublin, Bucks Co., Pa.

10,000 APPLE TREES, 3-YEAR-OLD
20,000 APPLE TREES, 2-YEAR-OLD

The leading varieties are Ben Davis, Wine Sap, Jonathan, Grimes Golden, Rome Beauty, Rawle's Janet, Yellow Transparent, Penn, Red Streak, Collins Red, Duchess of Oldenburg, Minkler, Red June, Gano and some 20 additional varieties. The trees are smooth and straight and sure to please. Also have to offer 4,000 Pear trees, mostly Kieffer, some Garber, Bartlett and Dwarf Duchess De Angouleme. My peach trees are not so heavy this year. Will have about 5,000 light grades. 1,000,000 Strawberry Plants, ten leading varieties. Write for prices stating varieties and grades wanted.

L. F. DINTELMANN, Belleville, Illinois

Lightfoot Nursery Company

Offers for Spring, 1904: 150,000 June Bud Elberta Peach Trees and 1,000,000Strawberry plants.

Peach Trees 6-12 in., $12; 1-2 ft., $15; 2-3 ft., $20 per 1,000. Boxed F. O. B. Cash with all orders.

Strawberry Plants $2 per 1,000. Aroma, Jessie, Sharpless, Bubach, Klondike, Thompson, Gandy, Brandywine, Excelsior, Warfield. Send for free catalogue. **LIGHTFOOT NURSERY CO., H. Lightfoot, Pres. & Manager, Chattanooga, Tenn.**

GENUINE Rocky Ford Cantaloupe Seed

FOR SALE BY

H. WOODS COMMISSION, FRUITS AND PRODUCE. 127 SOUTH WATER ST **CHICAGO**

M. BUTTERFIELD & SON

PRESENT THE

Lee's Summit Star Nurseries

The Nurseries on the Hill—highest Point on Mo. Pacific between Leavenworth and St. Louis

WHERE QUALITY is considered first. The best soil, modern methods, long experience. Varieties tried and true for the middle west. Skilled workmen. Prices actual, i. e., the cost of growing with a legitimate profit added.

Complete assortment. Everything hardy and grown out of doors. Send us a list of your wants for prices or better still, come and see the stock, take it with you if you want. Plant a Rambler Rose, anyway—25c.

M. BUTTERFIELD & SON, Lee's Summit, Missouri

Want Reliable Local Agents in Missouri, Kansas and Illinois.

Send No Money

WE WILL SHIP YOU OUR $15 MADE TO MEASURE ALL WOOL BLACK CHEVIOT PERFECT FITTING SUIT FOR ONLY $4.50

C. O. D. without one penny in advance (with full privilege of examination) and one-half dozen all linen white pocket handkerchiefs either mens' or ladies', provided you send us ten names and addresses of gentlemen who would be interested in our custom made suit offer.

Write us today, giving your name, address and express office and following measurements:

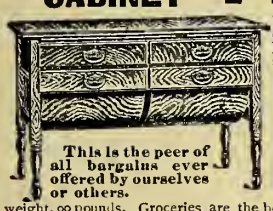
Chest (around body, over vest close under arms), Sleeve (inside seam), Waist (over pants), Length of Pants (inside seam from close in crotch to heel).

Our suits are made of the best all wool suitings, linings and trimmings, the most worthy the market affords, coats have neatly padded shoulders, hand-worked collar and lapel, and double canvas front, making garments self-sustaining—WE make and cut the suit as ordered and **give you full privilege of examination at your express office.** Try it on, and satisfy yourself of the handsome appearance, excellent fit, high quality and workmanship and be convinced that it is exactly as represented, and would cost you at your local tailor from $15 to $18, then pay the express agent $4.50 and express charges and the suit is yours.

We cannot afford to make the proposition we do with the remotest chance of failing to do as we agree. The risk is all ours, we trust you—if you do not wish to order without first seeing samples of our **All Wool Black Cheviot Suit, write today** and we will send sample, measurement blank, tape measure and full instructions.

LOUIS & HAROLD COMPANY, (Not Inc.)
211-218 E. Van Buren St., Chicago, Ill., U. S. A.

Kitchen Queen CABINET FREE



This is the peer of all bargains ever offered by ourselves or others.

With this order of groceries for **$9.99. It is true** that we send you this golden oak Kitchen Cabinet with two large bins, two drawers, each divided, making four commartments; two sliding bread or meat boards free with this order. Size of top 26 by 46 inches, heighth 32 inches; shipping weight, 90 pounds. Groceries are the best and guaranteed.

Send no money if within five hundred miles; if further send one dollar, say you want order No. BB, 89. Cabinet and groceries will be sent by first freight to your nearest station for examination. If cabinet and groceries are satisfactory on examination pay agent $9.99 or $8.99 if $1.00 has been sent, and charges. If not, refuse the order.

If preferable we send you with this order a five drawer Oak Chiffonier for $1.00 extra. Dinner sets, silver sets, rugs, shoes, Morris chairs and 50 other premiums free with grocery orders. Write for free catalogue No. 101.

This Kitchen Cabinet FREE.	
10 lbs. Best Gran. Sugar..	$ .39
5 lbs. J. and M. Coffee...	1.40
2 lbs. Majestic Tea.....	1.20
10 lbs. Best Head Rice ..	.80
2 1-lb. cans Bak. Powder.	.50
10 lbs. S. C. Prunes.....	.60
1 lb. Cocoanut (Shred.).	.20
25 l'ge bars Laundry Soap	1.00
10 bars Scouring Soap	.50
1 4-lb. bar Castile Soap..	.56
1-lb. can Pure Pepper....	.29
2 4-oz. Lemon Extract...	.45
2 4-oz. Vanilla Extract...	.55
3 pkgs. Breakfast Food..	.30
10 lbs. Gloss Starch.....	.50
1 can Cinnamon	.12
1 can Mustard	.12
2 lbs. Best Currants	.26
2 lbs. Best Raisins... ..	.25
Total.....	$9.99

RANDOLPH MERCANTILE CO., 16-22 Michigan Ave., Chicago.
Reference: Fort Dearborn National Bank, Chicago.

Barn Paint 48c Per Gallon in Half Barrel Lots.

As a medium-priced paint our Ready-Mixed Star Brand Barn, Fence and Roof Paint has no equal in covering, wearing and appearing qualities. We do not hesitate to recommend it fully as better than anything in the market at the price.

Send for Free Paint Sample Color Card giving full line of samples, amount to order for a given surface, complete instructions for painting and other valuable information. Don't pay two prices for your paint. Write today for our color card and buy the best guaranteed paint in the market at lowest prices. 63

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32 years World's Headquarters for Everything,
Michigan Ave., Madison and Washington Sts.,
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Double Action Cutaway Harrow Used by Clark For Large Hay Crop.

CLARK'S SULKY CUTAWAY REVERSIBLE DISK PLOW

CUTAWAY HARROW CO. HIGGANUM, CONN. U.S.A.
SEND FOR CIRCULARS.

McElree's Weeder & Uncovering Attachment

fits any cultivator; will weed and uncover any plant that is cultivated. saves time and plants; does not stop cultivator or stoop over. Weeds the space between plants in row. Send for circulars.

PAT JULY 14, 1903.

Wm. McElree, Dunkirk, O.

YOU CAN MAKE $3 TO $10 A DAY
Fitting glasses for us. Big profits. Our 24-page **FREE EYE BOOK** tells how. Write for it today.
Jacksonian Opt. College, Dept. 2053, Jackson, Mich

Apples in Montana.

The writer has just returned from the state horticultural meeting at Great Falls, deeply impressed with the possibilities of Montana as an apple producing state. Although the society offers no premiums, the fruit exhibit was better than that at many eastern horticultural meetings. Flathead Co. offers a prize cup, a handsome trophy of solid silver, for the four best plates of winter apples. The varieties that won this year were Delaware Red, King, R. I. Greening and Rome Beauty. The Missoula Nursery gave nine prizes, each consisting of $10 worth of apple trees, for the nine best plates of apples. The Helena Nursery had a fine exhibit of cut flowers. This firm has 80,000 square feet under glass in their greenhouses and ships flowers all over the Northwest, including Seattle.

The Iowa man was surprised to see bottled cider among the exhibits, and still more surprised to see the unanimous way in which the delegates absorbed a 30-gallon barrel of cider, donated by one of the members. A large jug of cherry wine was passed around at one session and quickly disposed of. A great many small, green apples in Montana are made into cider, which has the virtue of being made from sound stock. It brings good prices—30 cents per gallon wholesale, and 50 cents retail, because of the high price of apples.

Fruit growing in Montana is confined chiefly to the valleys west of the Rocky Mountains, although a few successful experiments have been made in other localities. The first apple trees in Montana were planted thirty-seven years ago and some of them are still bearing fruit, free from all insects and fungus diseases, although neglected for years.

In Missoula and Ravelli counties 139,000 apple boxes were sold last year, indicating a crop of 230 car loads. Fred Whiteside, of Kalispell, harvested the folowing crop last year from 60 acres planted to fruit trees, mostly apple, with potatoes between the rows.

4,000 boxes apples at $1.25.....	$5,000
1,000 gal. cider at 30c	3,000
7,000 bus. potatoes at 30c.....	2,000
	$10,000

The leading varieties are Wealthy, Wagner, Gano, McIntosh Red, Delaware Red and McMahan White. A few hundred trees are eight years old, 2,000 trees six years old and 1,000 trees five years old, the balance being too young to bear.

The codling moth is very bad in some orchards at Missoula and it has also appeared at Kalispell. The State Board of Horticulture is making a strong fight against the pest, three inspectors being appointed for each district. These inspectors also make war on fungus diseases and other insect pests and also examine all fruit and nursery stock shipped into the state, condemning all infected stock. The cost of this work is charged up to the owner of the stock, being 2c per box for fruit or $5 a car. The merchants are glad to pay this, because it forces the wholesalers and growers to ship them a better grade of fruit.

The only insect pest that is general in the orchards of Montana is the apple aphis. This can easily be held in check by spraying with whale-oil soap and a decoction of quassia chips, or dipping the ends of the branches in the mixture. The aphis is a little green louse that hatches out when the buds unfold in the spring. They collect on the under side of the leaves and suck the juice therefrom. The leaves curl up and growth is checked. If the aphis are allowed to multiply from year to year the tree is finally killed. These lice bring forth living young every ten days in the summer and lay egs in the fall on the ends of the branches. It is supposed to be impossible to destroy the eggs, but the inspector for this district reports that in spraying for the oyster shell scale with lime-sulphur-salt solution all the aphis eggs were destroyed.

The bushel box is used altogether for packing apples in Montana. This method is better than barreling, but it has its disadvantages. The fruit must be carefully graded according to size and every apple carefully fit into the box. The apples are placed in layers and it is a fine point to get them to come out just right. An experienced packer will, however, pack 50 to 60 boxes a day, for which he is paid 4c a box.

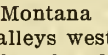
We get $1.00 to $1.50 a box for apples here in the Flathead Valey, although aerly apples sometimes sell for less. Yellow Transparent, Red June and Duchess are the standard early apples, ripening in September and growing to great perfection. We raise European plums, pack in 5-lb. baskets, four baskets to the crate, 50c to $1.00 per crate. Sour cherries, 6c to 10c lb. Cherries, plums, red raspberries and strawberries bear big crops regularly.

Two-year apple trees bring 18 to 25 cents each, though in some parts of the state they sell for much higher prices.

Great Falls did the handsome thing by the horticulturists, taking them on free excursions to the Rainbow Falls of the Missouri River, Giant Springs and the Boston and Montana Smelter, and entertaining them at a sumptuous banquet in the evening. Great Falls has 6,750 trees growing in 450 acres of parks and 10 miles of boulevarded streets, costing $95,000 to date. The city grows its own trees in the city nursery.

O. H. BARNHILL.

Holt, Mont.

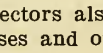


Two Good New Fruits.

M. Butterfield & Son, Lee's Summit, Mo., write to the Fruit-Grower that they are offering this year trees of the Florence apple and of a new apricot of much promise. The Fruit-Grower has received specimens of both these fruits, and can recommend them as to quality. The apricot is in every way desirable for those who want this fruit. And the Florence apple is certainly of excellent quality and attractive appearance. It is red-striped, mostly red; of good size, and in quality one of the best. If the tree is as good as the fruit, the Florence will prove a winner. Referring to this apple, Mr. J. S. Butterfield writes:

"We have great confidence in the Florence apple, and expect it to rival the Jonathan. We have only a few hundred trees which we want to send out, a few trees here and there with other varieties, more for testing than for any other purpose."

Specimens of the Florence apple were sent to Dr. Whitten of the Missouri Experiment Station some time ago, and he speaks very highly of it. Prof. Stinson, who was then in charge of the Missouri Fruit Experiment Station, also recommends the Florence as a most excellent apple.



A. W. Montgomery, Goldendale, Wash., sends six new subscribers, and says "These subescribers were picked up in six minutes after I received the January number." One a minute is not bad. Cannot every one of our readers devote a few minutes to the work of trying to get some new subscribers for the Fruit-Grower? We expect it of everyone.

LAMP-FITS.

How do you know what chimney fits your lamp?

Your grocer tells you.

How does he know?

He don't.

Do you then?

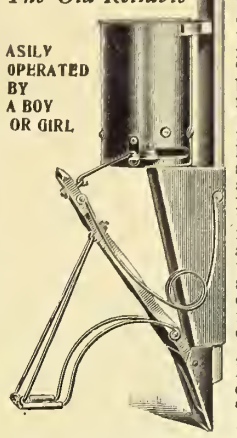
That's about how lamps are fitted with chimneys by people who don't use my Index; and they complain of bad chimneys! Lamp-Fits indeed! Do you want the Index? Free.

MACBETH, Pittsburgh.

American Standard One Hand Automatic ROTARY DISC Planter

The Old Reliable

EASILY OPERATED BY A BOY OR GIRL



POINTERS

An absolutely successful rotary dropping disc—adjustable for all sizes and numbers of kernels; drops accurately and never skips a hill or clogs.

A sheet spring brass "cut-off" that does its work perfectly; does not injure the grain and never wears out. This planter is better made, has reached a larger sale, has proven more popular and has given better satisfaction than any other hand planter ever manufactured. Sold in forty-six states and territories of the Union, also seven foreign countries. Send for descriptive circulars.

AGENTS WANTED IN EVERY TOWN

Sheffield Mfg. Co
BURR OAK, MICH., U.S.A.

We Believe in Protection

TREE PROTECTORS

Will protect your trees from rabbits, mice and borers; will also protect the stems from sun scald and can be left on during the summer, and will not injure the tree.

The cut represents our Tree Protector after having been applied.

Same are made of veneer, and are pronounced the cheapest and easiest applied of anything ever used.

St. Louis Basket and Box Co.
2nd and Arsenal Sts.
ST. LOUIS, MO.

One Million

Choice Apple and Peach Trees to offer for Spring. Also a full line of all other kinds of Nursery Stock. Get our prices befor placing your order. We will save you money. Wholesale catalogue now ready—send for copy.

Tree Protectors at $5.00 Per Thousand

Hart Pioneer Nurseries
Box E Fort Scott, Kas.

AGENTS WANTED

Good man in every county to sell

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Orcharding in Missouri

BY DR. J. C. WHITTEN

(Continued from February Number.)

PRUNING APPLE TREES.

The root system of the young tree should be properly pruned a the time should be properly pruned at the time chard. A great many believe that as many roots, and as long roots as possible should be left on the tree. As a matter of fact in orchard practice, it is not necessary to have a very large root system in order to secure good results. In transplanting large, old trees it is desirable to save all possible roots and to have these disturbed as little as possible in transpranting. In the case of young fruit trees, however, good growth may be secured if the roots are well cut back. One may not fear, then, to cut away all broken, managled, dried or dead parts of the root system in setting young apple trees. In fact a tree is better off without such dead portions as these than it is with them.

If the trees nave been so handled that all main roots and small fibrous ones are fresh, if they show no signs of having dried out, and especially if the cuts show signs of healing or if new rootlets are beginning to start there will be little need of pruning the roots at the time of setting. Usually, however, it is not possible to handle young trees from the time of digging until they are received for planting in the orchard without the roots drying out more or less. The small, fibrous roots are the first to dry out and die. The cut ends of the main roots also sometimes dry out for some distance. If, however, the main roots are for the most part fresh and the stems and twigs show no signs of shriveling, the trees will be all right if the roots are properly trimmed.

Figure I.—Two-year-old tree of symmetrical type, before and after pruning. Pruned for planting out, by simply shortening side limbs and slightly cutting back the leader.

If the roots have died out somewhat in handlng, all the main roots should be shortened up to where the wood is fresh (see fig. II). The dead fibres should also be cut away, to admit of pressing the soil firmly in contact with the live part of the root. There is no one thing that interferes more with geting the soil in close contact with a main root than does the presence of a lot of dry, wiry fibrous roots. The dry or dead parts of a root cannot possibly do any good if they are left on the tree and they may do a great deal of harm by holding the soil away from the live part of the root. All broken roots should be cut off and all long ones are better cut back than bent up in the hole.

One-year-old apple trees will consist of straight whips. These should be pruned by simply cutting them off at a height so they will branch out at the proper point of heading. If it is desired to have the heads eighteen inches high the trees should be shortened to two feet high, for they will then make their limbs in the upper six inches of the stem that is left. If limbs start below the point of heading they may be rubbed off while they are young. A half dozen good limbs should be encouraged to grow near the top, one to become the central leader.

Two-year-old trees will be well branched and their heads already formed. They should be pruned by shortening the side limbs somewhat. It is usually best to cut off one-half to two-thirds of their length. The lower limbs should be left longer and the upper ones shorter, so as to give the tree a cone shape. The aim should be to main ain a straight trunk, or central leader, around which the branches are uniformy produced. The main trunk should not be cut off unless it extends high above the upper limbs. If it is too long it may be shortened somewhat, but in any event it should be left long enough so it will continue to outgrow all the side limbs, thus keeping a cenral trunk to the tree. (Sse Fig. I.)

Forked trees shoud be corrected by cutting off one side of the fork, thus allowing the other side to become the leader. If one side of the fork is small enough so cutting it close to the body of the tree will not make too large a wound it may be removed entirely. If its base is thick enough that its removal will make a large wound it should be shortened to a stub, containing four to six buds. These buds will start as side limbs and the other side of the fork will straighten up and become a straight leader. Forked trees are liable to split down when they get old enough to bear fruit if the fork is not corrected at the time the tree is set out. (See Fig. 11.)

Apple trees after being set in the orchard should not be pruned very severely. There is a current notion in the minds of most planters that, theoretically, all surplus limbs should be prevented from forming in the first place, by pinching them out when they first begin to push out from the bud. That no limb shoula be allowed to grow where it will not be needed permanently. This would avoid all necessity of ever cutting off surplus branch. It would restrict pruning operations to such as could be done with the thumb and finger nail.

It is argued that the production of branches that are to be pruned away is a waste of energy on the part of the tree; that the food and vitality which was expended in producing a surplus limb might have been directed to other parts of the tree if the bud from which this limb was formed had been pinched off in the beginning.

In answer to the above argument it may be fairly stated that in the commercial orchard it is not practicable to give such intimate attention to the individual tree as would be necessary to carry out any such elaborate disbudding process. Where such a method is

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Every fruit-grower is interested in keeping the trunks of his trees healthy and free from borers, aphis, bark lice, etc.; also in protecting the trunk against sunscald. The best preventive of injury from any of these is Otwell's Tree Paint, which is prepared by a practical orchardist, and is recommended by successful growers everywhere. At this season of the year it is very important that trees be protected against these pests, and for this nothing is so good as OTWELL'S TREE PAINT, using the special summer paint. This paint not only keeps insects away, but by keeping the tree in a healthy, vigorous condition, enables it to withstand the attacks of insect and fungous enemies, which are always most numerous on a sickly, unthrifty tree.

Otwell's Summer Tree Paint is composed of nine distinct ingredients, every one of which serves a specific purpose. The paint is applied with an ordinary paint brush, and one gallon will paint 100 to 500 trees, according to size.

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No free samples, for the reason that a sample would not be a good test; a gallon costs but little, and will allow a thorough test to be made.

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"I used the Summer Paint, painting my trees in May—1,500 of them. I was so well pleased with its effect that when it got hot and dry in August, I painted them again. I followed directions to the letter, so I was sure I had done my part, and my trees show that the Paint has done all claimed for it. I will make this offer: I am willing to give any man $10 who will find one borer in my 1,500 trees, or where there has been one."—H. W. Rausch, Sec. Richland Fruit-Growers' Assn., Richland, Mo.

W. E. Carlin, Jerseyville, Ill., who did such effective work in getting up clubs for the Western Fruit-Grower last, year, writes:

"To Whom It May Concern: I have been personally acquainted with W. B. Otwell, of Carlinville, for some time—he lives in the adjoining county, 35 miles distant. Before using his Tree Paint, I tried various applications on the body of my trees, some of which made the bark rough and dark. Last spring I used 25 gallons of the Summer Paint on 3,200 trees, and am well pleased with the result. I find it kills borers and leaves the bark on the trees green, smooth and of a healthy appearance, besides it assists in retaining the foliage later in the season. We have just finished applying the Winter Paint, and therefore can not speak of its merits. I furnished a neighbor 5 gallons of the Summer Paint, and he liked it so well, he wants enough of it next year for his 20-acre orchard."

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6 to 12 in., $1.50 per 100; $12.50 per 1,000—Elberta, 40,000; Carman, 8,350; Belle of Ga., 10,300; Hiley, 2,250; Sneed, 250; Chinese Cling, 400; Waddell, 1,000; Alexander, 150.

12 to 18 in., $2.00 per 100; $16.50 per 1,000—140,000 Elberta; 7,550 Belle of Ga.; 1,150 Hiley; 550 Sneed; 750 Alexander; 250 Chinese Cling.

18 to 24 in., $2.50 per 100; $19.00 per 1,000—150,000 Elberta; 1,100 Sneed; 550 Hiley.

2 to 3 ft., $3.00 per 100; $25.00 per 1,000—100,000 Elberta; 200 Hiley; 150 Sneed.

Apple

2 yr., ¾ and up, 5 to 7 ft., $6.00 per 100; $50.00 per 1,000—750 Ben Davis; 540 Jonathan; 240 Winesap; 330 Mo. Pippin! 405 M. B. Twig; 30 Early Harvest; 30 Baldwin; 105 Kinnard's Choice; 30 Gano; 30 Hargrove.

⅝, ¾, 4 to 6 ft., $4.50 per 100; $40.00 per 1,000—640 Ben Davis; 100 Mo. Pippin; 60 M. B. Twig; 80 York Imperial; 40 Baldwin; 40 Gano.

9-16, ⅝ 4 to 5 ft., $3.75 per 100; $35 per 1,000—1,500 Ben Davis; 125 Mo. Pippin; 100 Shannon Pippin; 200 Kinnard's Choice; 75 Wallace Howard; 50 Jonathan.

½,9-16, 3½ to 5 ft., $3.25 per 100; $30.00 per 1,000—3,750 Ben Davis; 1,425 Jonathan; 850 Winesap; 100 Kinnard's Choice; 75 M. B. Twig.

3 to 4 ft., $2.75 per 100; $25.00 per 1,000—1,450 Ben Davis; 425 Jonathan; 425 Winesap; 750 Early Harvest; 100 Limbertwig.

2, to 3 ft., $2.50 per 100; $20 per 1,000—825 Ben Davis; 175 Winesap.

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attempted the result is failure to carry out the details of this ideal. The grower will be forced to the use of the pruning tools sooner or later.

Again, shaping the tree wholly by disbudding is not the best thing for the tree, even if it could be rationally carried out. A surplus branch may serve a very useful purpose for a season or two and then become superfluous, when it should be removed. A tree will grow more stocky and vigorous if it has a goodly number of branches while it is young. The very fact that a tree pushes out a branch is a pretty good indication that it is able to support this branch, for a time, at least, to its advantage. It should be borne in mind that the crude sap that is taken up through the roots is not capable of being directly used to promote growth of the root system and trunk of the tree, but that it must first pass to the leaves and green parts of the tree and there be elaborated into plant food that is capable of being used in the growth of the tree. Without leaves, or green parts, then no growth can take place. Every branch that finds room on the tree, and sap enough to support it, bears leaves in which crude sap is being assimilated. This assimilated food is then used to promote growth. A part of it is carried to the trunk and to the roots where it is used to make growth. A limb may then serve the purpose of assisting in the elaboration of plant food, while the tree is getting a start, and then may be cut off when other limbs above it get numerous enough to do the work. It is noticed by all those who top graft trees that the scion will make better growth the first year if all its side branches are left on. They simply increase the elaborating surface so more plant growth can take pace. After a season's growth has taken place a certain amount of pruning may be done. Disbudding, while the tree is young and has but few branches may remove a limb that otherwise would have been of great assistance in promoting more vigorous growth of the tree.

Up to the time when the apple tree reaches bearing age the pruning should be restricted mainly to removing any limbs that form on the trunk below the head, to shortening any limbs that tend to outgrow the others and make the tree one-sided and to correcting forks. It is obvious that sprouts at the root or on the trunk, below the head should be taken off as early as possible if they form. The northern limbs will usually tend to outgrow the southern ones in this climate. These long limbs will cause the tree to tip to the north if they remain. This exposes the south side of the trunk of the tree to the hot sun. The longer northern limbs should be cut back in winter to allow the south ones to keep up with them in growth. Very little cutting of southern limbs should be done as this is liable to let in sunlight that will scald the trunk.

Most of the pruning should be done in the winter, as the orchardist has more time at command during winter. Forks that form in the main leader should be corrected by removing one side of the fork. If two limbs cross each other as the tree gets older, and rub sufficiently to cause injury one of them may be shortened or removed entirely. The tree should be allowed to make a dense head in this climate to protect the bark of the trunk and main limbs from sunscald, to shade the ground and prevent its getting too hot, to keep down weeds under the tree and to assist in elaborating plant food so the tree will be stocky.

After the tree reaches bearing age its head will generally be opened up by the bending of the limbs under their load of fruit. Trees with heads so dense that some growers declare will not admit light enough to ripen the fruit when they begin to bear, will be found to open up enough to admit even too much sunlight when the first heavy load of fruit begins to reach full size.

Dead, diseased or injured limbs should be removed whenever they occur. In the case of old trees, having large limbs, it is not advisable to cut off surplus limbs close to the trunk. This leaves very large wounds that do not heal well. In this climate the removal of large limbs usually results in the death of the trees at an early date. If a large limb is diseased or broken it is best to cut it back to some good side limb than to remove it entirely. DR. J. C. WHITTEN.
Columbia, Mo.

(To Be Continued.)

Figure II.—Two-year-old apple tree of straggling, forked type, before and after pruning, at the time of setting in orchard. Forks corrected by pruning so as to secure main trunk (or leader) with side branches. Root system should be pruned so as to remove surplus dead fibers and shortening main roots, so soil can be easily worked in among them at time of planting.

Best Pears and Plums for New Hampshire.

The New Hampshire Experiment Station has a bulletin in press written by the horticulturist, Prof. F. Wm. Rane, in which he recommends the following varieties of pears and plums for planting in the state. They are named in order of importance.

Pears—Anjou, Bosc, Sheldon, Seckel, Clairgeau, Vermont Beauty, Onondaga, Laurence, Duchess and Bartlett.

Plums—Burbank, Abundance, Lombard, Bavay (New Green Gage), Wickson, Chabot, Pond, Golden Drop, Grand Duke, Bradshaw and Niagara.

For the northern part of the state, Stoddard, Quaker, Surprise, Hawkeye, Cheney and Wyant are recommended.

This bulletin is sent free to all who are interested in fruit-growing. Address the Director, Agricultural Experiment Station, Durham, New Hampshire.

⚜ ⚜ ⚜

Commercial Apples for Michigan.

The Michigan State Horticultural Society has been carrying on some investigations as to the most popular commercial apples in that state, and the consensus of the opinion of over 400 leading growers has been obtained by Secretary Bassett, which shows the following varieties in the lead: Duchess, Baldwin, Northern Spy, Grimes' Golden, Hubbardson, Wagner, Stark. Michigan is rapidly regaining its old time reputation as the producer of fine apples, thorough spraying, cultivation, pruning and fertilizing accomplishing this desirable result.

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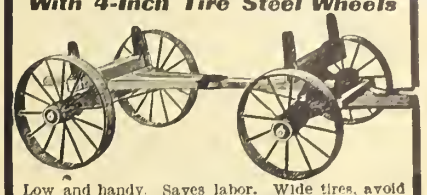
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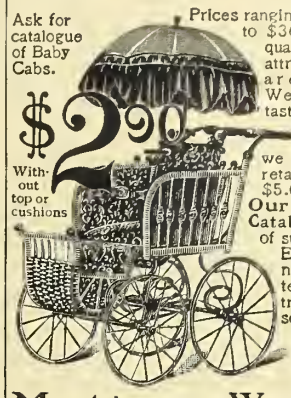
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Windbreaks for the Southwest.

The question of windbreaks for orchards in some of the Southwestern states has not received the attention it deserves. There are many persons who protest against the use of windbreaks, but a recent bulletin by Prof. O. M. Morris of the Oklahoma Experiment Station makes a strong plea for the windbreak properly managed. This reference to windbreaks is in Bulletin No. 60, entitled "Planting Trees for Posts, Fuel and inbreaks"—a most excellent bulletin, by the way, telling of the care of forest tree seeds, planting of same, cultivation of the seedlings, etc. Referring to the subject of windbreaks, the bulletin says:

The most disagreeable feature of the climate of Oklahoma and the neighboring states is the great amount of hard wind. A planting of trees around the house and farm yards does much to diminish the effect of the wind and increase the comforts of farm life. Such plantings may also be of great value in providing shelter for stock. The comforts and conveniences created about the farm home by a good windbreak are so commonly recognized that no attempt will be made to point them out here. In fact the benefits so derived are so commonly appreciated that a great many farmers plant their orchards so they will serve the double purpose of an orchard and a windbreak and their greatest value often lies in the latter office.

The orchard will fill its place in the economy of the farm as an orchard if well cared for and should not be used permanently for a wind-break. There are few of the fruit trees that are sufficiently hardy to make a good windbreak and endure the exposure to which they are there subjected and still bear even a fair crop of fruit. It is a far better plan to set the orchard in a block form and plant rapid growing forest trees for a wind-break. The orchard will be greatly benefited if it is protected from the southwest wind by a belt of timber. A dry wind blowing across a field dries the surface of the soil very rapidly and carries away a great deal of soil moisture. A wind-break checks the force of the wind and in this way saves a great deal of moisture for the crop that is on the land. A wind-break formed of trees draws large quantities of water from the land on which it grows, but this loss is more than offset by the amount of water saved in the adjacent field or orchard.

Orchard trees sheltered by a windbreak or shelter belt of timber grow in much better form and are not leaned to the north by the wind. The trunk of the tree will be better shaded by the top and thus many cases of sun-scald and borers will be avoided. Pruning may counteract the effect of the wind to some extent, but a good wind-break is far more effectual. Trees sheltered by a belt of timber or a grove are not broken like those more exposed, and carry a greater percent of their fruit to maturity. It is not an uncommon experience for three-fourths of the fruit to be shaken from the tree before it is mature. The codling moth is the cause of a great deal of the windfall fruit in Oklahoma, but the hard wind has about as much immature fruit to its credit. A good wind-break will reduce the amount of wind-fall fruit and will make it possible to do better work in spraying and thus check the ravages of insects and diseases on the fruit and foliage. Good spraying cannot be done in a hard wind.

Some fruit-growers object to a windbreak for an orchard on the ground that it is a harbor and breeding ground for insects and diseases, and that the row of trees next to the wind-break suffers for the water which has been drawn from the soil and used by the trees forming the wind-break. If the wind-break is a harbor and breeding ground for insects and diseases it is a fault of the care and cultivation given it. It should be cultivated and cared for the same as the orchard and any insects and diseases injurious to the orchard should be combatted the same as in the orchard. The insects and diseases that are most common in the orchard seldom attack the kind of trees used for the wind-break, and the reverse is also true. If the wind-break robs the outside row of trees of food and water it is a fault in its location. A space of thirty to forty feet should be left between the wind-break and the first row of true trees.

The ideal wind-break is a belt of timber or a grove of trees taller than the trees in the orchard. Such a shelter belt cannot always be grown on the average prairie farm and a hedge or at best a narrow belt of timber may answer the purpose. If possible, this planting should be completed two or three years before the orchard is set, so the young fruit trees may be protected from the hard wind when they are first set in the orchard. The trees that are to form the wind-break may be set in the form of a hedge, or far enough apart in the row so they can develop and make good trees. Both plans are good and make good windbreaks when suitable kinds of trees are used. The amount of land that can be devoted to this purpose should be the principal point in deciding the formation of the planting. The hedge row form of wind-break requires a plant with a thick growing top like the Russian mulberry, and osage orange. Seedling peach trees are some times used to good advantage for this purpose. The plants should be set about one or two feet apart, and should be well cultivated to encourage as great a growth as possible. These trees make a very dense top when in full leaf and the Russian mulberry and osage orange are not commonly attacked by diseases and insects that live upon orchard trees and fruits. The Russian mulberry is the best tree, commonly grown in Oklahoma, for such purposes.

If there is room for a more extensive planting it is a better plan to set the trees four or five feet apart in rows four feet apart. In this form of planting the trees can be cultivated for a few years and made to supply posts and wood for use on the farm. The outside row of trees should be left unpruned or some low, spreading kind of tree should be planted with the tall growing varieties. The tall growing trees if pruned to grow good posts and poles, will not make a good low windbreak. If the two outside rows are not pruned they will make sufficient undergrowth. The Russian mulberry and tamarisk are two of the best low spreading trees to use in a mixed planting of this kind. Seedling peach trees are sometimes used for this purpose to good effect. Elm, catalpa, soft maple, and black locust are the best of the tall growing trees used for a windbreak in Oklahoma.

A few farmers are growing good wind-breaks composed of cotton-wood, black locust, and plum trees. The cottonwoods are planted twelve to sixteen feet apart and two or three black locusts between. The plums are planted in another row outside the row of larger trees . Either the wild plums or some cultivated varieties can be used. This combination can seldom be used successfully on upland. On loam and clay lands the black locust, soft maple, elm, catalpa, and Russian mulberry should be used. The black locust and Russian mulberry make a very good combination. The soft maple is not adapted to close mixed planting and when it is so planted provision should be made for its removal in a few years. The other trees named may be planted in mixed or pure plantings and will usually give good results.

⚜ ⚜ ⚜

"I cannot get along without the Fruit-Grower. One number is well worth the subscription price."—J. B. Howe, secretary Newton County (Ind.) Horticultural Society. Mr. Howe also sent for one of our binders, in which to preserve the Fruit-Grower for a year. Have you one of these? They cost only 75 cents, and will keep the papers intact for a year, when they can be taken out and the next year's paper filed. You ought to have one, else the copies of the Fruit-Grower may be destroyed.

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are healthy and hardy. Buds cut from bearing trees insure stock true to name. 913 acres—two million trees—apple, peach, cherry, plum, pear and quince. **Ornamental trees** and shrubs. **Order direct** at wholesale prices. Beautifully illustrated catalogue sent free. Write to-day.

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Washington as a Fruit State.

Millions of years ago, when the earth was cooling and the continents were forming, the slowly heaving mountain ranges were sometimes rent by great fissures from which molten lava poured forth in floods, and volcanic ashes issued in immense volumes. Large portions of what are now the states of Idaho and Washington were subjected to repeated deluges of lava, which in turn were covered by accumulations of volcanic ashes and soil, sandwiched one above another until the mass measured in places thousands of feet in depth, and covered thousands of square miles. This mass has in places been, by later upheavals, folded into low mountain ranges, which for a time, held back the waters of the Columbia and tributary rivers, forming great lakes, into the beds of which the waters carried the ashes, sands and decomposed lava (basaltic rock), which now form the soils of the valleys of the Snake, Yakima and other rivers of this region—soils of wonderful depth and fertility. Some of the rivers have cut through this bed of soil and, in places, through one or more layers of basalt; and strata after trata of these old lava flows are seen, in places, outcropping on the sides of the surrounding mountains. The Northern Pacific Railroad runs for several miles beside the Yakima River, between Kiona and Prosser, with the water-worn edges of two or three lava flows standing like terrace walks along the other side of the track. These volcanic soils, like those of southern France and Italy, seem particularly adapted to fruit-growing, and especially to grape growing. Although comparatively few grapes have as yet been planted, those which have come into bearing promise great things in that line. Mr. Joseph Lannin, who was for five years president of the West Michigan Fruit-Growers' Association, vice-president of the Michigan State Horticultural Association, and for many years president of the South Haven and Casco Pomological Society, and who had charge of the Michigan Horticultural exhibit at the Chicago World's Fair, now a resident of Sunnyside, says: "I have made a study of fruit-growing for more than forty years, and do not hesitate to say that this valley will be one of the great fruit-growing countries of the world." He is specially enthusiastic over grape culture here, as he considers conditions ideal for grapes.

Probably no other state in the Union has such diversity of climate, or such a variety of soils. The bench lands on the south side of Snipe's Mountain, not five miles from Sunnyside, ripen fruits and vegetables fully a week earlier than here, and at Kiona, not over 35 miles down the valley, they market produce two weeks earlier than here. I was told while there, recently, that the raising of early strawberries for the markets of Seattle, Tacoma and Spokane is a leading industry. My informant said that they had tested all the best early varieties and had discarded all but the Hood River. It is claimed that the earliness, beauty and quality of this berry make it the leader on these markets, and that other berries would not sell as long as Hood Rivers were to be had.

At present only a limited acreage is cultivated about Kiona owing to the lack of canals. This is to be remedied in the near future by a sixty mile extension of the Sunnyside canal, to cover over 100,00 acres of what are said to be some of the finest lands in the state. Over 50,000 acres of this is state land, which is to be sold to actual settlers at a flat rate of $10.00 per acre (not yet on sale), and $30.00 per acre for water right. There are several small ditches at Kiona, with current wheels for lifting water. The largest of these is about 30 feet high and is to lift water to irrigate 12 acres of orchard. The owner has tried various devices, including the Chinese chain pump, reciprocating and centrifugal pumps, and finally the large wheel with buckets on the rim. He had just completed this when a flood carried it away, but he pluckily rebuilt it and is now waiting for the next flood to test it. But "water is everything" here, and must be had to grow crops. There has been an unprecedented rush for lands in this valley the past season, and many homesteads and desert claims have been filed on lands to which water cannot be brought except by a very long and costly high-line canal, which will not likely be built for many years. A few have secured lands of great prospective value, but there is practically nothing left of any value, subject to entry, except an occasional relinquishment.

That fruit growing is to become one of the leading industries of this region is evident from the fact that from 50,000 to 100,000 trees are being planted annually in the Yakima Valley, according to statements in Tacoma papers, and from an experiment station bulletin I learn that seventy nurseries have been licensed to sell in this state, most of them located in the state.

I notice the front gate black-board at many fruit farms, especially on well traveled roads, on which are written "wants" and "for sales" of the proprietor. With the organization of fruit-growers' associations and the reputation which Yakima fruit has already gained, the average fruit-grower ought at least to make a good living.

GEO. H. PATCH.

Sunnyside, Wash.

❦ ❦ ❦

Z. T. Rupe, Centerville, Iowa, writes that the January number was a good one, but no better than other issues of the Fruit-Grower, except that it was larger. "They are all good; in all the years I have taken the Fruit-Grower there has never been an issue which was not worth the subscription price to me. I have learned something from each one."

❦ ❦ ❦

Best Varieties of Apples for New Hampshire.

In a bulletin now in press, Professor F. Wm. Rane, horticulturist of the New Hampshire Experiment Station, recommends the following list of varieties of apples for planting in New Hampshire. They are named in so far as possible, in order of importance:

For Summer—Williams, Red Astrachan, Oldenburg.

For Autumn and Early Winter—Gravenstein, McIntosh, Wealthy, King, Hubbardston, Grimes' Golden.

For Winter—Baldwin, Spy, R. I. Greening, Red Canada (Nonesuch), Roxbury Russett, Ben Davis, Jonathan, Pewaukee, Grandite Beauty, Bethel.

For a sweet apple the Tolman is preferred although of a green color.

For the northern part of the state he recommends replacing Baldwin by Bethel. "Other things being equal, red apples are preferred on the market." This bulletin will be sent free to all who desire it. Write Director of Agricultural Experiment Station, Durham, N. H.

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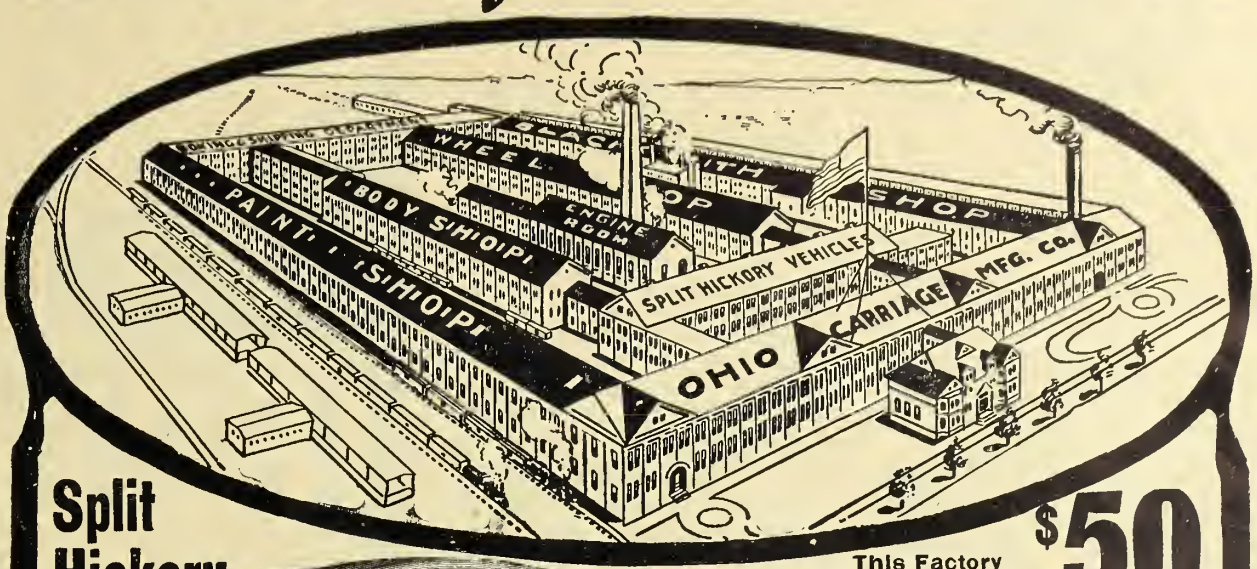

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Every Split Hickory Special Buggy is furnished complete with good, High Padded Leather Dash, Fine Quality full length Carpet, Side Curtains, Storm Apron, Quick Shifting Shaft Couplings. Full Leathered Shafts with 39-inch Point Leathers, Special Heel Braces and Corner Braces. Full description of this Special Bargain Buggy at $50. Send for our **Free 136-Page Catalogue** of Split Hickory Vehicles and Harness.

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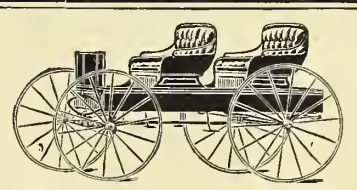

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Combination Gear Spring Wagon

You see it is built for business as well as pleasure. It's one of the *strong, reliable, safe* kind which always carries its load to the end of the journey. Here are just a few of its many good points:

The body is 7 or 7½ feet long and 34 inches wide, with solid hardwood frame and full ¾ inch panels. Full width drop end gate. Heavy center brace under body. Wide, roomy, removable and adjustable seats with high full panel spring backs and spring cushion. 1⅛ inch double collar steel forged axle in one piece. Selected hickory beds full clipped on axle. Best hickory reaches, full ironed and steel braced. Best oil tempered steel springs—full platform behind and elliptical in front. Best hickory wheels. Sarven patent or compressed band hub. Best round edge steel tire, hand set, put on hot and bolted between all spokes. Trimmed in heavy broadcloth, whipcord or fibre leather. Body is painted black and neatly striped and ornamented. Gear is painted Brewster green or wine. Any desired color on special order. Furnished either with or without top as desired.

Now doesn't that sound like a good wagon? Well it is. We know that a better one can't be made and sold at the price which we shall quote you on this one. You can have it on

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Just write me ten names of spectacle wearers and I will do this:—First I will mail you my perfect Home Eye Tester Free. Then (after you have sent me your test) I will mail you a full $2.50 family set of spectacles (which will wear yourself and family a lifetime) for only $1.00—and with this I will also send a Handsome Rolled Gold Pair Free. My regular price for this full family set of spectacles is $2.50 and your home dealers are charging from $2.50 to $5.00 a **pair** for them, which would make this set cost you about $10.00 if you bought them from your home merchant. I am really giving away the **whole** set free (the dollar I will ask you to send me with your test is **only** to pay for this announcement). I am doing this for a short time **only,** just to **prove** to you and all other spectacle wearers in the United States that **my** spectacles—the Dr. Haux "Famous Perfect," Vision Spectacles—are the most perfect fitting, clearest and the best that money can buy, and I'll give you your dollar back and let you keep the spectacles also if **you yourself** don't say they are the best and finest you have ever bought at any price. Address:—
DR. HAUX SPECTACLE CO., ST. LOUIS, MO. ☞**I WANT AGENTS ALSO.**
NOTE.—The above is the largest spectacle house in the United States and is thoroughly reliable.

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BUILD YOUR OWN INCUBATOR
You can do this easily with common tools and **Save More Than Half.** Our Complete Book of Plans instructs fully. We sell you at cost all fixtures like Tank, Lamp, Regulator, etc. **No Experiment.** Handsome Catalog Free.
CHANNON, SNOW & CO., Dept. B Quincy, Ill.

Major Holsinger's Department

I submit the following from our veteran horticulturist of Gashland. He is quite enthusiastic in support of one Ben Davis, who has been held up to scorn by quite a number. If any there be who dare assail Benjamin after this, let him be as an anathema maranatha:

Well, old Ben Davis is being buffeted from all quarters, but Ben is able to stand it. While the highly cultivated taste of some find fault with its quality, perfume and aroma, the masses "like Ben Davis." And though this may be inferior to Jonathan, Huntsman and others, it has more good points recommending it to grower, shipper, seller and consumer than any other commercial apple.

It comes into bearing earlier than most others, gives good crops more certainly every year, is equally prolific, as good keeper, shipper and seller; can be marketed in large or small quantities at remunerative prices to grower and seller. Cooks easily and quickly, looks clean and nice on table and for daily use does not surfeit the taste as the more highly flavored. Attractive in size, form and color, it excites the children, pleases the cook, satisfies the mistress and puts dollars in the grower's pocket, and is so abundant that the price places it in reach of the humblest household.

It has fine head, neither too erect nor too spreading. Can be grown on any soil, on any location in the cold north, or the sunny south, in the cultivated east, or the broad plains of the west, down in the valley or on the mountain sides and never fails to give fruit while its life lasts, and produces more dollars to the acre than any of those varieties struggling so hard to supplant it. Hurrah for old Ben Davis—stand up, old fellow, you'll be here on top when many of the "choice and finer varieties" are forgoten. More love you and more buy you than any of the beautiful colored, rich flavored and highly aromatic sorts.

DAN CARPENTER.

Gashland, Mo.

MUSHROOMS.

R. I. L. wants to know how to grow mushrooms. I don't know. I have known quite a number who soon gave it up; as disaster resulted. There are so many conditions necessary to success, that those usually undertaking the matter are ill provided, so as to succeed. I hope some one will give the needed information. By this I don't ask a certain party who is sending out circulars, who while seeming to be disinterested, has spawn to sell which is better than all others. They profess to be willing to buy all your mushrooms if you will only buy their spawn. Bless my heart. Think of it. "If their spawn is used." Why, mushrooms can be sold without regard to where the spawn has been secured. Only get the mushrooms. Their sale is the least part of the contract.

MEETING OF M. V. SOCIETY.

The February meeting of the Missouri Valley Society was one of interest, as many of the old timers were present. The meeting was well attended and was a very pleasant affair. These monthly meetings are truly enjoyable in this, that they bring us together, binding us in that fellowship that contact only can give. The salutations of greetings, with inquiries of the welfare of families tend to bind us in a companionship of brotherhood. Long may they continue to send sunshine into each other's hearts.

President G. W. Holsinger called the meeting to order, and Mrs. Chandler, the secretary, read the minutes.

W. G. Gano gave a talk on fruit packages. It has been customary with our people to market in the open split peck basket, said Mr. Gano, but they are unsatisfactory, as the fruit is liable to be bruised in them, and owing to not having covers, require too much space. They cannot be piled upon each other, as being without covers, the fruit would be pressed and damaged. These baskets, while good enough for potatoes, onions, etc., they should be replaced by a package having a cover, when they could be handled to better advantage.

Mr. Lowmiller spoke of the paper box. G. L. Holsinger said he had investigated the paper box, but that they were unsatisfactory; besides costing more than the wood package. They would not hold up as the fruit softened.

Mr. Espenlaub suggested a wooden bottom might help stiffen them so as to overcome this defect.

C. V. Holsinger said the matter of expense was in favor of the wooden package, and being more satisfactory than paper, they will continue the wooden box, at least until the paper box is more satisfactory and the prices nearer together. Being asked the difference in price of the two boxes, ne said about 80 cents per thousand.

Prof. Chase, who is a Michigan fruit grower, said the most desirable fruit package was the bushel package; that they can be set upon each other and can be returned to the grower, fitting within each other and so stiff that the fruit is protected. For yellow peaches which are firm it is very satisfactory. For early white or thin-skinned peaches they use the one-fifth bushel basket. These baskets have covers and cna be piled upon each other, and as they have handles, they are convenient.

Mr. Johnson of Arkansas: "We must educate the people. I believe the best package is the six-basket crate. These baskets when properly packed are a beautiful show. At least one-twelfth of the fruit being visible. The crates are sufficiently stiff to prevent their bruising when stacked upon each other."

Here we butted in by saying that this was a local society and consequently more or less a local question. Mr. Johnson is a commercial grower, consequently a shipper. We of this society do not ship more than one per cent of our fruit. Experience teaches us that seling from the wagon we must sell from open packages, and in packages that are handy to handle. In other words, the package for our market should be so provided that the fruit can be seen and carried upon the street cars, as many of our customers are working people. Then again, the grocer who handles the fruit prefers them in this way, as they are less troublesome than packages that have to be put up, which is the case with the six-basket crate, they not having handles. It will be seen therefore that what will apply to our people locally will be impossible for those who must reach the market by shipping.

G. L. Holsinger suggested that some of the boxes in these crates were thus provided by wire handles or "bails."

Mr. Goodman: "The four-basket crates have bails. Our custom is to make three grades of peaches. All No. 1 fruit is of good size; no 2 grade is made up of sound, good peaches, of smaller size, while soft ones are shipped in the one-fifth bushel basket, not labeled, the two former being stenciled. We have used both the four and six-basket crate, but like the four best."

Mr. Wheeler: "For peaches and grapes I prefer the eight-pound basket (these are the handle baskets not crated)."

As the split peck basket is largely used in our Kansas City market, we took occasion to say that we thought it the part of wisdom to adopt the eight-pound basket, in which to market our grapes, as I had observed that in the St. Joseph market the same day their fruit thus handled sold for fully as much as our larger package. The peck basket when well rounded, weighs twelve pounds, so that the loss to the grower is from one-fourth to one-third, while tne difference in the price of the package is but trifling.

A commitee of three were appointed to confer with and report on fruit

Planet Jr. Companion Tools

No. 3. Planet Jr. Hill and Drill Seeder shown below on the right holds its position as the tool for perfect hand seeding. Converted in an instant from drill to hill planter and back again. Plants in hills 4, 6, 8, 12 or 24 inches apart. A convenient cut-off prevents seed waste in stopping, no hills missed in starting. A steel marker rod lines out rows 6 to 20 inches apart, and it opens the furrow, drops the seed, covers different depths, and rolls down. Operator drills or plants in hills all garden seeds with great accuracy, aided by an excellent graduated index at top of handle.

No. 12 Planet Jr. Double Wheel Hoe is the ideal companion tool for the above. The crop is never too small or too large for it to work perfectly. Its hoes, cultivator teeth and plows are quickly set to do almost every kind of work. Cultivates between or astride the rows, scuffles, kills weeds, furrows, ridges, etc. Wheels are adjustable for wide or narrow rows and for depth, and handles adjust to suit the operator. Leaf lifters avoid injury to low plants and permit close cultivation after plants are large.

Planet Jr. 1904 Catalogue shows forty different machines, including Seeders, Single and Double Wheel Hoes, Hand, One and Two Horse Cultivators, Horse Hoes, Beet Sugar Cultivators, etc. Over 100 illustrations, including 16 beautiful half tones of home and foreign farm and garden scenes. Mailed free to all.

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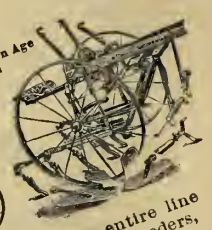
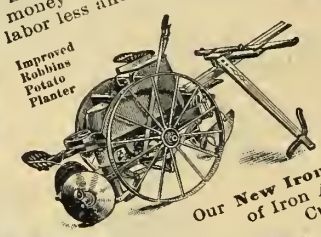

No. 60, Iron Age Pivot Wheel Cultivator.

No. 6, Iron Age Double and Single Wheel Hoe, Hill and Drill Seeder.

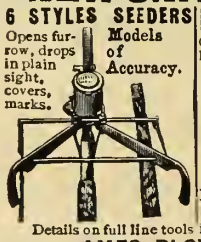

Improved Robbins Potato Planter

Our New Iron Age Book describes and illustrates the entire line of Iron Age Horse Hoes, Wheel Hoes, Hill and Drill Seeders, Cultivators, etc., and Improved Robbins Potato Planter. Write for it. It's free.

BATEMAN MFG. COMPANY, Box 506 Grenloch, N.J.

"NEW UNIVERSAL" LINE OF GARDEN TOOLS

6 STYLES SEEDERS Models of Accuracy. Opens furrow, drops in plain sight, covers, marks.



Double or Single Wheel Hoe, Cultivator, Plow, Rake. Changes quickly made. Cultivate between or astride the rows. Any depth, any width.

Note High Arch and Plant Guards. Bent Oak Handles on all Tools.

Details on full line tools in 1904 free catalogue. Write for it.

6 Tools in 1. Combined seeder, marker, hoe, rake, plow, cultivator. Single or double wheel. Every adjustment easily made. For planting and all kinds of cultivation.

Wheel Plows with cultivator, rake and hoe attachments. For garden and poultry yards.

AMES PLOW COMPANY, 59 MARKET STREET, BOSTON, MASS.

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SUCCESS Manure Spreader

Leads every other machine for the mechanical spreading of manure. Its superiority appears in the fact that it is a distinct improvement on the Kemp Spreader, which we still manufacture and which has been the typical Spreader for 25 years. Spreads all manures of every character and condition and all commercial fertilizers. Pulverizes and spreads evenly, thick or thin, broadcast or drills in rows, any desired quantity per acre, unloading the largest load in 3 to 5 minutes; apron automatically returns to position in the next 65 feet driven.

A SPECIAL FEATURED MACHINE

for convenience of handling and perfection of work. Notably superior in its Beater Freeing device. Direct Chain Beater Gear, Speed Regulation and Automatic Return of Apron. Positive and dependable in all movements. Simplest in gear, lightest in draft, least chance for breakage. The driver never dismounts for any purpose but controls everything from his seat. Made in four sizes and sold under strongest guarantee as to materials, workmanship and duty. Investigate fully before buying. Catalogue with valuable chapter on farm fertilizing mailed free.

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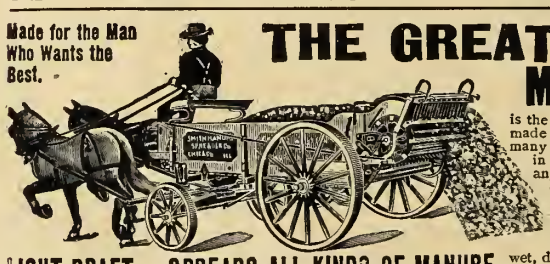
Made for the Man Who Wants the Best.

THE GREAT WESTERN Manure Spreader



is the only Spreader made that has an **ENDLESS APRON** and the many advantages which it possesses. It's always in place and ready to receive the load without any turning back either by hand or complicated, easily broken machinery. The front and rear axles are of same length which, with the **Broad Tires Prevents Rutting** of fields, meadows, etc. and makes **LIGHT DRAFT.** **SPREADS ALL KINDS OF MANURE,** wet, dry, frozen, light, chaffy, packed or caked. Spreads lime, plaster, wood ashes, cotton-seed and hulls, etc. **Can be changed instantly to spread thick or thin while the machine is in motion—8 to 25 loads per acre.** Has the only successful **END GATE AND BEATER AND HOOD PROTECTOR IN USE.** Made of best material in every way and sold under a **POSITIVE GUARANTEE** as to **quality, capacity and durability.** All parts breaking within one year will be replaced without charge. **Write for free Illustrated and Descriptive Catalogue**—the best and most complete spreader catalog ever published.

SMITH MANURE SPREADER CO. 16 & 18 S. CLINTON STREET, CHICAGO, ILL

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WE OFFER FOR SPRING OF 1904 THE FOLLOWING:

Apple, 2 and 3 year; Pear, Standard and Dwarf; Peach, 1 yr., all sizes; Cherry, one yr., very fine, mostly sours

Plum, Japan, European and Native

Soft Maple, Wiers' Cut-Leaved Maple, Elm, Box Elder, Ash, etc. etc. Catalpa (Speciosa) 1 year 12 to 24 and 6 to 12 inch.

Also good assortment of other stock a large portion of which is in our Storage Cellars ready for early shipment.

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SELF-FILLING PEN
"The Pen That Fills Itself"

Dip pen in any ink-well or any ink, press lever and the operation is over. As a matter of cleanliness, comfort and convenience, don't you owe it to yourself to learn more about this perfect pen? The metal presser bar prevents pen rolling off your desk—**a very important feature**, and one that is worthy of your serious consideration.

If you will let us send you our beautiful new illustrated catalogue, it will make you a CONKLIN enthusiast.

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530 Madison Avenue, TOLEDO, OHIO.

XX OR BEARING AGE FRUIT TREES.

We are the one nursery that makes a specialty of growing and marketing trees of bearing age. If you don't want to wait on young stock in your grounds or small orchard, try Sweet's famous

GENESEE VALLEY XX TREES.

Grown with special care to transplant at fruiting age. Many have borne in the row and are sure to give satisfaction. Four to five years old, one to two inches diameter, and 6 to 8 feet high. Magnificent assortment of **Standard and Dwarf Pears, Plums and Cherries.** Every tree a superb specimen, clean, vigorous, shapely and strong rooted, dug and shipped so as to suffer least damage from transplanting. No scale or other disease. Full line of fruit and ornamental trees, shrubs, vines, etc. Established 1869. Write for new free catalog.

GEO. A. SWEET NURSERY CO., 27 Maple St., Dansville, N. Y.

NEVER-ROOT HOG TAMER AND EAR MARKER

guaranteed the best tool to prevent hogs all ages from rooting. Your feed then all goes to pork; not to root. Makes nose like either cut. Once done always done. **Marks all stock.** Complete with reversible nose knife and ear marker (3 blades) **only $1 prepaid.** Good Hog Holder 75 cts.

Circulars Free. **W. I. Short Mfg. Co. Box 165 Quincy, Ill.**

Renew your subscription today.

packages, W. D. Cellar being chairman.

Reports of committees followed:

Mr. Gano: "Peaches are all killed; some cherries injured; plums, even Japanese, seem O. K."

Goodman: "Missouri will have one-half peach crop. Elbertas are generally gone; some districts are worse than others. As you go south the damage is less. Japan plums promise a full crop."

G. L. Holsinger: "From present indications we will have one-half crop peaches. Even some Elbertas escaped. Cherries are not injured."

Mr. Lowmiler: "The apple orchards are all right."

Mr. Cellar thinks the apple all right at Edwardsville and feels confident there will be some peaches as well.

Concerning small fruits Mr. Chandler said: "Everything is in fine fix."

Mr. Wheeler: "Pears are all right. Having had a rest they undoubtedly furnished sufficient fruit buds and if nothing happens, we will have pears.

There were some apples on exhibition. FRANK HOLSINGER.

Strawberries at Gashland, Mo.

In the Western Fruit-Grower, our model horticultural paper, on page 12 of the February number, headed, "A Model Strawberry Patch," is a well-written article on the advantage and productiveness of intense culture as practiced by Mr. Kirklin in obtaining 4,074 boxes or 166 crates off of three-fourths of an acre. This is counted a great success. It may be at Columbia, but would not be so considered at Gashland, even in 1903—the hard year for the strawberry; here as elsewhere.

Adam W. Craig, half mile from Gashland, picked and shipped 800 crates or 19,300 boxes, and there rotted on vines from lack of crates and boxes, 20 crates or more, off one and one-half acre. This on upland on which an orchard of apple and pear was set more than fifty years ago and has gone the way of all the earth. This leads Mr. Kirklin by 244 crates, or 5,856 boxes on a half acre—more than double his crop.

Now, what will three-fourths of an acre do here in a good year and favorable seasons? The winter of 1894-5, Robt. Fulton bought ten acres of heavily timbered upland covered with a thick undergrowth of hazel brush. He cleared up about one acre, broke it, put in good condition and on 24th of May, 1895, set three-fourths of an acre, scant, to strawberries. Clean and intense culture followed. The following year he gathered and marketed 427 crates in Kansas City.

The average crop in normal season has been 400 crates per acre. The worst seasons have averaged 275 to 300 and for all it has been about 350 to 375 crates per acre. For this year's crop the Association has orderd 35,500 crates which is likely to be a short supply. D. CARPENTER.

Gashland, Mo.

A Horticultural Cure-All.

J. T. Wallace, Neoga, Ill., writes as follows:

"Modern fruit-growing is a problem that will rack the brain of our wisest heads, but it is rather humiliating that with all the study and experimenting of our horticulturists of the United States it has been left to our Canadian neighbors to furnish us with a cure for all our ills, whether insect or fungous, to which our fruit trees are subject, and offering us immunity from all our dread enemies. This same panacea insures us bountiful crops of sound, smooth fruit for four years, simply by one application of some kind of a mixture known only to the originator.

"A smooth-talking individual representing himself to hail from somewhere in Canada, and furnishing testimonials from many supposed orchardists in that region, has made a tour of this region, offering, for the small sum of 50 cents per tree, payable half cash and half Sept. 1 (provided we have a fruit crop and he gets back), to bore a hole in each of our trees, whether apple, peach or whatever kind, clear to the heart, fill this hole with his secret powder, drive in a plug, and seal it over. This dope is so strong that no codling moth, canker worm, curculio, caterpillar, or even the apple scab or canker fungus will ever dare to come near the tree for four years. Now, brother fruit-growers, shall we continue to worry and sweat with our spray pumps, or shall we simply plug our trees and await a bountiful harvest? This man failed to explain how his medicine will be absorbed by the heart-wood, but he showed the writer a contract made by a prominent orchardist and the editor of a horticultural paper in this state, so we may expect astonishing returns next fall.

"In the meantime, however, I should like to inquire of those who have had experience, and who are not interested in the sale of pumps or dusters, what is the relative value of the dust spray and the liquid process. If a man is needing a new outfit, would you prefer dust or liquid for a small orchard, the relative expense of course being considered?"

This remedy which is to be "injected" into trees reminds the Fruit-Grower of the remedy which was sent us two or three years ago, to be given a trial. We sent it out to one of our readers to be tested, but have never received any report—and the inventor has never asked for one. It will be a hard matter to get satisfactory replies to the question concerning the dust and liquid sprays. Some prefer one and some another, and at the meetings at which the question is discussed there is always quite a difference of opinion among those present.

Change in Large Advertising Agency.

Mr. D. M. Lord, for many years president of Lord & Thomas, of Chicago, one of the largest advertising agencies in the country, has retired from active business life, and has been succeeded by Mr. A. L. Thomas as president of this firm. Mr. Lord's stock in the company has been purchased by Mr. C. R. Erwin and Mr. A. D. Lasker, the former having been chosen as vice-president of the firm and the latter as secretary and treasurer.

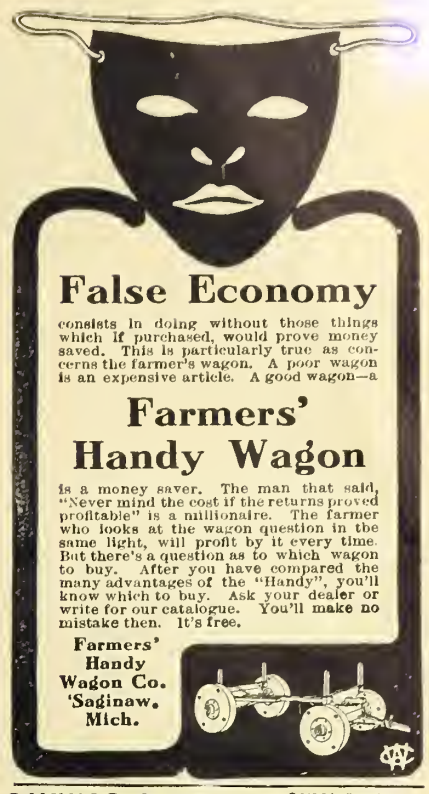
Mr. Lord is one of the best-posted advertising men in the country and had been instrumental in building up the large patronage which Lord & Thomas enjoy. His successors in the firm are all good advertising men, and there is every reason to believe that the firm will have a constantly increasing business.

The main offices of Lord & Thomas are in the Trude building, Chicago, and its New York office is in the American Tract Society building.

How to Cook Dried Fruits.

Valuable directions for cooking California cured fruits have been prepared by a large fruit-packing company, and may be summarized as follows: Wash thoroughly several times in lukewarm water. Put the rinsed fruit in covered enamelled saucepan, cover with cold water, and let stand twelve hours. Pour into another saucepan this water, saturated with fruit juice, add sugar according to taste (with prunes little or none at all), boil for fifteen or twenty minutes to a rich fruit syrup, and pour it boiling hot over the soaked fruit. Then let the fruit simmer for fifteen to thirty minutes, though prunes should simmer about two hours. Let the fruit cool gradually. Lemon or orange peel improves the flavor. Prepared this way dried fruits recover their plumpness, look like fresh fruit, and are delicious. The syrup should be rich and clear. Fruits cooked this way can be used for pies and puddings also. Never cook dried fruit without soaking it thoroughly and never boil it quickly.

"I cannot grow strawberries without the Fruit-Grower," writes James H. Hoover, Verona, Mo. And he renews his subscription for three years. Have you renewed your subscription yet? Do it today.



False Economy

consists in doing without those things which if purchased, would prove money saved. This is particularly true as concerns the farmer's wagon. A poor wagon is an expensive article. A good wagon—a

Farmers' Handy Wagon

is a money saver. The man that said, "Never mind the cost if the returns proved profitable" is a millionaire. The farmer who looks at the wagon question in the same light, will profit by it every time. But there's a question as to which wagon to buy. After you have compared the many advantages of the "Handy", you'll know which to buy. Ask your dealer or write for our catalogue. You'll make no mistake then. It's free.

Farmers' Handy Wagon Co. 'Saginaw, Mich.

SAVINGS BANKS ONLY PAY 3 TO 4 PER CENT!

WE HAVE A PROPOSITION

that will interest you and will pay AS MUCH OR MORE IN DIVIDENDS

PER MONTH.

ASPHALT REFINING

is our business. We want to tell you about it.

Send your name—we will mail the Particulars Free.

G. D. CARR, Treasurer,
217 South Water St. CHICAGO, ILL.

SHENANDOAH YELLOW

The corn that has made Shenandoah famous. Has outyielded all other varieties of yellow corn wherever tested. A deep grained 100 day yellow corn, ripe in September. Will outyield, outshell, and outsell any yellow corn you ever grew. The world's husking record, 201 bu. in ten hours, was made in this corn near Shenandoah, Dec. 8, 1903. Send for free catalog, photographs and samples of this and other varieties of corn. $5.00 worth of seeds free on club orders. Ask about it.

HENRY FIELD, SEEDSMAN, BOX 15, SHENANDOAH, IOWA
THE EAR SEED CORN MAN

Sandusky & Co.

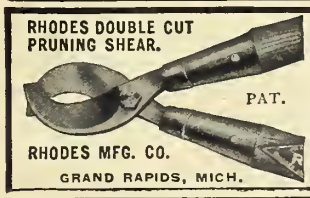
General Commission

116 South Third Street and 115 Market Square St. Joseph, Mo.

Wholesale Fruits and Produce Berries a Specialty

Dealers in Berry Box Material, Grape Baskets, Egg Case Material. All kinds of Baskets in stock. Established 1864.

RHODES DOUBLE CUT PRUNING SHEAR.

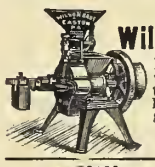


Cuts from both sides of limb and does not bruise the bark.

Write for circular and prices.

RHODES MFG. CO.
GRAND RAPIDS, MICH.

Make Your Own Fertilizer
at Small Cost with
Wilson's Phosphate Mills



From 1 to 40 H. P. Also **Bone Cutters**, hand and power, for the poultrymen; **Farm Feed Mills, Graham Flour Hand Mills, Grit and Shell Mills.** Send for catalogue.

WILSON BROS., Sole Mfrs.,
Easton, Pa.

TRADE HULL'S ANTISEPTIC STICKING SALVE. MARK

Heals and Protects

For Frosted Feet, Cracked Hands, Burns, Scalds, Cuts, Bruises, Corns, Bunions, Sores, etc. Guaranteed to give satisfaction. Not an experiment—a time tested, valuable healing remedy, Successfully used for 40 years. Sample 1c; large stick 15c, post paid. Agents wanted everywhere.

Hull's Salve Co., Augusta, N. J.

Vick's Family Magazine

The oldest and best Horticultural Magazine in America and the one that helps people. **SEND 10 CTS.** for Six Month's trial subscription, which includes 6 beautiful Fisher Charcoal Landscape Covers, and 192 large pages of helpful reading. Subscribers make big money around home.

VICK PUB. CO., 101 State St., Rochester, N. Y.

Fruit Notes From Experience.

I send herewith a few hints which I have learned by experience, which had I known them twenty years ago, would have saved me labor and many dollars.

Apple trees grown in fertile bottom land are unfit to transplant on poorer soils. Every time a tree is transplanted it should be changed to a richer soil unless you intend to stunt the growth.

Quick growth of trees in the nursery renders them more liable to disease after being transplanted than moderate growth.

Extreme change of soil, unless it be to a better one, is telling on the vitality of a tree.

The reason fruit trees of today are not so hardy as those of 50 years ago is because their vitality has been impaired by crossing and recrossing—inbreeding for desired fruit.

The growing of trees compares favorably with stock growing as to the effect on their health by breeding for desired results. The seedling of fifty years ago knew no disease, neither did the razor back; they need no nuture. The Poland China of today succeeds only with intelligent care and the effects produced by crossing an drecrossing has impaired their vitality so that only the careful feeder succeeds.

Pear orchards succeed best to cultivate two years then sow to clover to prevent blight. During wet seasons pear trees that are cultivated are more apt to blight than in dry seasons or than those in sod.

Keiffer pears would not be considered so coarse grained if they were planted with other varieties that would fertilize them and the quality is much changed also. Experience in fruit-growing is generally obtained at an age when high flavors of fruit is not so enticing as in youth.

If you want Keiffer pears that are fit for a king and relished by all, plant every other tree a Duchess de Angouleme; pick from trees when stem parts readily and store in a dark, cool room; let them get mellow and you will have a smooth, velvety surface and a juicy, fine flavored pear that will delight even those who never ate a good Kieffer pear. I have sold them for eating in competition with three other kinds (one of them was the Winter Nellis) and three successive customers took my Keiffer-Duchess pollenized pear.

S. S. BRODBECK.

Gallatin, Mo.

Fruit Farming in East Tennessee.

The superb number of the Western Fruit-Grower for January, 1904, has been to hand some days and with its table of contents, fit for a king, has set this scribe to thinking of days long gone by, when many of your Missouri readers were dwelling in these hills eating the luscious fruits once grown in Tennessee.

Fifty years ago the apple trees seldom missed fruiting and the peach orchards often afforded such crops of fine fruit, that after drying, making peach butter and peach leather, there was a large amount of feed for the porkers and plenty to go to the still house for brandy.

The writer well remembers a time when great interest was shown in planting budded trees for peach orchards and great hopes were entertained of much enlargement in fruit culture; but for some cause, either a change of climate, or a lack of facilities of getting the fruit to market, very few farmers succeeded in making money out of the peaches. So much of the early ripening fruit never came to proper maturity, that it was unfit for market. The native peaches were so small that they ceased to be valuable, even for use in the home. The present condition of the peach orchards is not so good as twenty or thirty years ago and one crop in seven years is about the average.

This East Tennessee country is some what like the negro's tobacco patch, "long, narrow and mighty rocky." The special portion considered herein is the upper region, about the foot of the Smoky mountains of the Appalachian chain and on the waters of the swift-flowing .Watauga and Nollichuchie. Mountains and hills combined in various directions make the country roads very crooked and traveling not so easy as on the western levels. These hills harbored a hardy race in pioneer days, some of whom crossed over to King's Mountain and helped win American independence from the British red-coats. After more than a hundred years of occupation by as noble people as the country affords, the conditions now, as regards farm culture of apples, peaches, pears and cherries, are truly discouraging. To one not much learned in the arts of orchard management the many questions to be solved by our native people seem perplexing.

Every farmer has more or less of fruit trees—such as apple, peach, pear, plum, quince and cherry trees, and at times, when the spring frosts do not kill the young fruit, a generous supply for home use is found. Much of the the fruit crop is not profitable, owing to the kind of fruit or damage caused by insects.

As to blackberries and dewberries, while the fields growing these are frequently cleaned up and cultivated in grain, like the blue grass in Southwest Virginia, they will grow and thrive and give a good crop every year, enough for the owner of the land, a portion for the neighbors, if they will only come and pick. They need no planting, no plowing, nor pruning and barefooted pickers are not of much use in harvesting the crop.

There is no question of the adaptation of the worn-out lands of this section to the profitable raising of fruits of various kinds, if well trained and skillful farmers would take the matter in hand, as they do other crops. To bring about this line of work nothing appears to be more important than a larger circulation, among our farmers, of papers devoted specially to this industry. Less politics and more fruit-growing news. If such papers as the Western Fruit-Grower could be placed in the farmer's home instead of so many idle story papers, the young men and women would soon gain a knowledge of how to make the old farms pay a neat profit on many acres now unfenced, except with hedges of blackberry briars.

With many good wishes for the prosperous farmers, among the readers of the Western Fruit-Grower, we would be glad to have them revisit the old time hills and enthuse their friends in their native heath, with this work of making the apple trees bloom and bear as in the days of the early settlers.

JACOB R. PAYNE.

Limestone, Tenn.

Paonai (Colo.) Fruit Season.

The annual report of the North Fork Fruit-Growers' Association, Paonia, Colo., shows that growers of that section had a very profitable season. The association shipped out 167 cars of fruit, and handled 28 carloads of supplies for the members. Peaches were shipped as far east as Boston, selling for good prices. One paragraph in the report of the manager is interesting, in that it shows that he is of the same opinion as the manager of the Grand Junction Association, as reported in the Fruit-Grower. This gentleman says:

"I also wish to urge upon the grower the necessity of growing large fruit. Nothing pleases a buyer better, or is more remunerative to the producer than the growing of large well colored fruit, and the grower who bases his coming seasons prospects on the returns of last year for pie peaches and small apples, has a very bright prospect of entertaining a surprise party, for every indication is that he will be asked to cough up freight charges."

At one of the horticultural meetings this winter the opinion was expressed that apples can be grown too large; that they are not desirable when they are abnormal in size. But these reports would indicate there is little danger of this condition.

"I think the Fruit-Grower is the best all-round fruit paper I have ever seen, and I will do all I can to extend its circulation. I am an old soldier, 74 years old, and have to go on crutch and cane." Now, will we not especially appreciate the help of this old man? It will cost an effort for him to get subscribers, and they will be all the more appreciated.

Are you ever in doubt about the right kind of seed to use? You know that the proper selection of pure bred seed will increase the earning power of your farm.

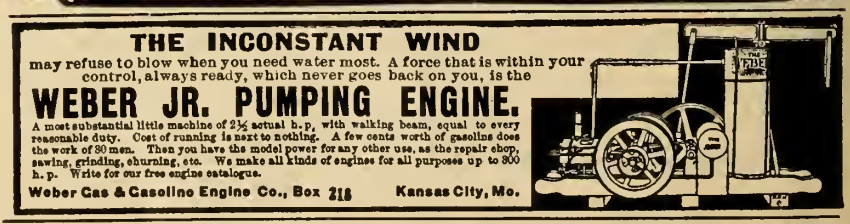
THE TWENTIETH CENTURY FARMER

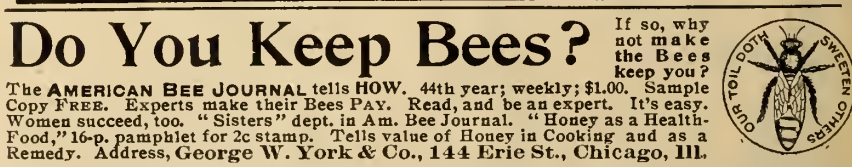
helps you select seed that will yield the biggest crop in your particular locality.

Starting in our Annual Seed Number, February 17th, some intensely interesting and valuable articles will be published on the selection of seed especially corn, wheat and forage plants. These articles are by practical farmers who have made a success of their business and write of actual results obtained—not from theory. Their advice is worth following. As your land increases in value you undoubtedly find it necessary to get the greatest yield possible per acre—all crops must be cultivated scientifically to get the best results. An enormous increase in the yield and quality of your crops can be obtained by using the right kind of seed.

Send for a sample copy of our "Seed Number," or send 25c for 3 months subscription—and get all the articles mentioned. Splendid prizes for getting new subscribers—Premium list free.

Address THE TWENTIETH CENTURY FARMER.
1734 Farnam St., Omaha, Neb.

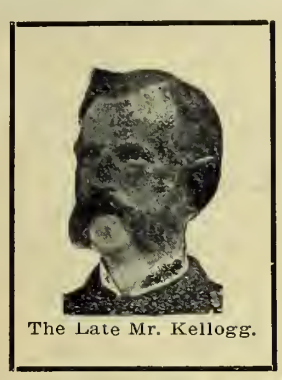




Death of R. M. Kellogg.

R. M. Kellogg, well-known to Fruit-Grower readers by reputation, if not personally, died at his home in Three Rivers, Mich., Feb. 24. Mr. Kellogg was in his sixty-first year, and had been sick for about three weeks, although his health has been failing for some time. His wife has been an invalid for some months, and was in a hospital at Indianapolis when her husband died, and doubtles worrying over her condition hastened Mr. Kellogg's death.

In the death of Mr. Kellogg the horticultural world loses a notable character. He was well known as a writer on horticultural topics, particularly on the subject of strawberries, and for the last few years has devoted his attention exclusively to the strawberry. He was one of the leading strawberry men

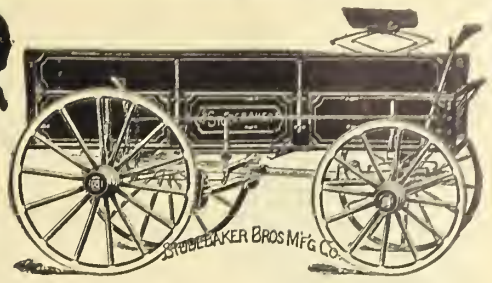


The Late Mr. Kellogg.

of the country. Although Mr. Kellogg wrote for the Fruit-Grower for a number of years and at one time conducted a department in this paper regularly, we had never met him personally until last December, at the meeting of the Missouri Horticultural Society. Later we met him at the Illinois meeting. tA both places Mr. Kellogg talked on subject of strawberry culture.

The business of the R. M. Kellogg Co., of Three Rivers will be continued by the members of the company. Some time ago the company was incorporated, Mr. F. E. Beatty becoming the active manger of the firm's business. With Mr. Beatty is associated Mr. Lyman M. Kellogg, brother of the deceased, and these gentlemen will carry forward the work begun by Mr. R. M. Kellogg. Both gentlemen have had much experience in this work, and are in position to look after the great busines which has been built up through the years.

STUDEBAKER QUALITY



Compare a Studebaker Farm Wagon with any other, point by point—wood stock and ironing; wheels, spokes, hubs, tire and felloe; axles and skeins; boxes, gears, bolsters, paint—everything—and you will understand why the Studebaker is sold in excess of any other make in the world. The simple truth is,

The Studebaker is the Best

farm wagon ever built. We have been hammering away at farm wagons for fifty years, and we know what counts for long life and good service. We have the pick of the best lumber sawn in America; we keep 55,000,000 feet of it drying in our yards; we have a larger and better equipped factory and we have more patented, special features than any other manufacturer. That's why more Studebakers are sold than of any other make; that's why every Studebaker customer is a satisfied customer. The same thing is true of Studebaker Carriages and Harness. They are made to last a life time. Sold only by regular dealers. Send to us for Free Booklet No. 64

STUDEBAKER BROS. MFG. CO., SOUTH BEND, IND.

All Studebaker goods carried at each of the following repositories:

NEW YORK CITY: Broadway and 7th Ave., at 48th St. SALT LAKE CITY, UTAH: 157-159 State St.
CHICAGO, ILL.: 378-388 Wabash Avenue. DENVER, COL.: Cor. 15th and Blake Sts.
KANSAS CITY, MO: Cor. Hickory and 13th St. DALLAS, TEXAS: 317 and 319 Elm St.
SAN FRANCISCO, CAL.: Cor. Market & 10th Sts. PORTLAND, ORE.: 330-334 E. Morrison St.

Local Agencies Wanted Everywhere. Factory and Executive Office: South Bend, Ind.

When you go to the World's Fair, St. Louis, look up our exhibit in Transportation Bldg. and shake hands.

that the buyer does not care to run the risk. However, it is not so perishable as the strawberry and where there is a sufficient quantity of a single variety I have no doubt but there are dealers who would buy and pick the fruit. (3). From the standpoint of hardiness I should very decidedly recommend the Mahaleb in preference to the Mazzard as a stock for the cherry. It is not so congenia, as the Mazzard, but is hardier and should be used in preference to the latter wherever the grower is troubled with rootkilling. The Mazzard belongs to the Sweet cherry group and all the Sweet cherries are more or less tender in this section. (4) The Damson plum does best in a clay soil and is usually planted from 16 to 20 feet apart. If two-year-old trees are planted, they should bear a light crop the second year after setting out, and they should be in their prime for heavy crops when from five to seven years old. As to the possible profits from plums, I should hesitate to advise without knowing more regarding the local market conditions and transportation facilities. There are two types of the Damson, and the Shropshire is much the superior in size. The Damson is quite susceptible to rot and to make the orchard profitable one must plan to spray systematically. In this state plums of the Americana or native type, such as the Wyant, Hawkeye and Surprise are hardier and less susceptible to both rot and curculio injury. Personally, I should feel inclined to weigh their value carefully before deciding in favor of the Damson or other European sorts. In this state plums of the Americana group have proven hardier in fruit bud and more profitable.

Don't Bark Your Fruit Trees.

Attention has been called many times to the fact that when the bark on a fruit tree has been broken by whiffletree or anything of that kind, various forms of fungi and insects find a weak point at which to make an attack. It is important, therefore, as everyone knows, to avoid any injury to the bark. It has often been a hard matter to cultivate close to the trunk and not injure it with whiffletrees, but a way has been provided whereby this close cultivation can be given, and there will be no danger of injuring the trees. The way out of the difficulty is to use Baker's Traceless Harness, which is made by the B. F. Baker Co., Burnt Hills, N. Y. The advertisement of this firm appears elsewhere in this issue, and has appeared in the Fruit-Grower for a number of years. This harness is used by a great many of our readers, and by fruit farmers everywhere, for it appeals especially to those who wish to cultivate trees of any kind. With no whiffletrees to bark the tree, there is no danger of injury, and one can cultivate close to the tree. Look up the advertisement and write for catalogue before time to begin cultivating the orchard. Address B. F. Baker Co., 228 Main St., Burnt Hills, N. Y., and mention the Fruit-Grower when you write.

Here are the best things advertised in this issue: Spray pumps, on page 2; Disparene, on page 7; dust sprayers, on page 28; seeds, on pages 11 and 15. Missouri Valley Seed Co., headquarters, St. Joseph, Mo.

A Beautiful Hanger.

We have just received a beautiful lithographed hanger or poster printed in ten colors, sent out by the manufacturers of the "Iron Age" farm and garden implements,—Bateman Manufacturing Company, Box 506 Grenloch, N. J. Many thousands of these are being hung up throughout the country in conspicuous places, where farmers and gardeners cannot help but notice them. Besides showing clearly several of their leading "Iron Age" tools in operation in the field, it shows the factories of this company. We wish to here give the assurance to our readers that the tools as offered by this company are thoroughly up to date and all implements manufactured by them, whether bought direct or indirect, are guaranteed to be as represented. Their 48 page "Iron Age catalogue is sent free upon application.

As evidence of the fact that the "Acme" pulverizing harrow is an excellent tool we point to the fact that there is probably one quarter of a million of them in use today.

Cherries and Plums as Profitable Crops.

J. A. S., Deerplain, Ill.—(1). "How far apart in the row should Morello cherries be panted? What returns should be expected from such an orchard when it is in its prime? (2). Is the crop from the cherry tree sold on the tree as apples sometimes are, or must the owner pick the fruit? (3). Is it advisable to have the trees budded on Mazzard or Mahaleb stocks? How long can cherries remain on the tree after they get dark in color before they become over-ripe? (4). I also want to plant two acres of Damson plums. How far apart should they be planted. Will such an orchard likely prove profitable? How old will the trees be before they bear a profitable crop? Do such fruits do well on red clay soil?"

Answer by Prof. Erwin, Iowa Experiment Station: 'On average soils I should plant the English Morello 15 feet apart. Good trees in their prime should bear from 40 to 50 quarts per tree. As to how much of this fruit you really get depends somewhat upon the number of trees in the orchard and the kind of a fight you propose to put up against the birds. Where there are only a few trees the birds sometimes get a considerable part of the fruit. The larger the orchard the less the loss proportionately from birds. In some experiments conducted in this state with netting used as a protection for the trees, there were some instances where the crop was from one-fourth to one-fifth greater from trees protected in this way. (2). So far as I am aware the cherry crop is not sold in the orchard as in the case of apples. I presume this is owing to the fact that it is such a perishable product

We Shall Spend $500,000

To Give Liquozone Away.

This Company, after testing Liquozone for two years in the most difficult germ diseases, paid $100,000 for the American rights. That is the highest price ever paid for similar rights on any scientific discovery.

We are now spending $500,000 to give the product away—one bottle to each of a million sick ones. We are doing this so that every sick one may let Liquozone itself prove what it can do.

Kills Inside Germs

The greatest value of Liquozone lies in the fact that it kills germs in the body without killing the tissues, too. And no man knows another way to do it. Any drug that kills germs is a poison, and it cannot be taken internally. Medicine is almost helpless in any germ disease, as every physician knows.

Liquozone will do for sick humanity more than all the drugs in the world combined. It does what no skill can accomplish without it. It cures diseases which medicine never cured.

Acts Like Oxygen

Liquozone is the result of a process which, for more than 20 years, has been the constant subject of scientific and chemical research. Its virtues are derived solely from gas, made in large part from the best oxygen producers. By a process requiring immense apparatus and 14 days' time, these gases are made part of the liquid product.

The result is a product that does what oxygen does. Oxygen gas, as you know, is the very source of vitality, the most essential element of life. Liquozone is a vitalizing tonic with which no other known product can compare. Yet it is a germicide so certain that we publish on every bottle an offer of $1,000 for a disease germ that it cannot kill.

The reason is that germs are vegetables; and Liquozone, which — like oxygen—is life to an animal, is deadly to vegetable matter. It is carried by the blood to every cell of every tissue, and no touch of impurity, no germ of disease, can exist where Liquozone goes.

Germ Diseases

These are the known germ diseases. All that medicine can do for these troubles is to help Nature overcome the germs, and such results are indirect and uncertain. Liquozone kills the germs, wherever they are, and the results are inevitable. By destroying the cause of the trouble, it invariably ends the disease, and forever.

Asthma
Abscess—Anemia
Bronchitis
Blood Poison
Bright's Disease
Bowel Troubles
Coughs—Colds
Consnmption
Colic—Cronp
Constipation
Catarrh—Cancer
Dysentery—Diarrhea
Dandruff—Dropsy
Hay Fever—Influenza
Kidney Diseases
La Grippe
Lencorrhea
Liver Troubles
Malaria—Neuralgia
Many Heart Troubles
Piles—Pneumonia
Pleurisy—Quinsy
Rheumatism
Skin Diseases
Scrofula—Syphilis
Stomach Troubles
Dyspepsia
Eczema—Erysipelas
Fevers—Gall Stones
Goitre—Gout
Gonorrhea—Gleet
Throat Troubles
Tuberculosis
Tumors—Ulcers
Variococele
Women's Diseases

All disease that begin with fever—all inflammation—all catarrh—all contagious diseases—all the results of impure or poisonous blood.

In nervous debility Liquozone acts as a vitalizer, acomplishing what no drugs can do.

50c Bottle Free

If you need Liquozone, and have never tried it, please send us this coupon. We will then mail you an order on your local druggist for a full-size bottle, and we will pay your druggist ourselves for it. This is our free gift, made to convince you; to show you what Liquozone is, and what it can do. In justice to yourself, please accept it today, for it places you under no obligation whatever.

Liquozone costs 50c and $1.

CUT OUT THIS COUPON

for this offer may not appear again. Fill out the blanks and mail it to the Liquid Ozone Co., 458-460 Wabash Ave., Chicago.

My disease is .....

I have never tried Liquozone, but if you will supply me a 50c bottle free I will take it.

....

.....

.....

M110S Give full address—write plainly.

Any physician or hospital not yet using Liquozone will be gladly supplied for a test.

Grand Special Offer

To the Western Fruit-Grower readers for one month only.

STRAWBERRY PLANTS THAT WILL GROW

300 FOR $1.00

100 of that choice new variety SENATOR DUNLAP and 200 of two other choice varieties with instructions how to grow. Send today Cat Free.

J. L. TODD, ATLANTIC, IA.

The Cushman Power Spraying Outfit

Simplest and strongest Sprayer on the market. Carry high pressure and do better and faster work. Weight of pump is 300 lbs.; 3 horse-power engine, is 150 lbs. When spraying season is over use engine for sawing wood, grinding feed, shelling corn, etc. Mfd. by **L. W. CUSHMAN, Urbana, Ill.**

SCALES

Farmers, send for my Special Offer on Wagon and Stock Scales. Have the best and cheapest scale on the market; 5-ton Scales as low as $29.00. I ship Scales on trial and I pay the freight. Address **Eugene Castleman,. Brown's Station, Mo.**

BEFORE ORDERING

Small Fruit Plants

ask for descriptive catalogue of Strawberry, Raspberry, Blackberry, Currant and Grape, with discount, and be convinced of the value we give for a little money. A1 quality, **true to name,** regardless of quantity.

BABCOCK & NASH, Bridgman, Mich.

Tree Paint FOR BORERS, RABBITS, insects, etc. Best, cheapest tree protector out. Is a pouris vegetable and mineral compound. 500,000 trees protected last year; get special offer. Agents wauted. WM. ROBINSON, Bowling Green, Mo.

Kansas & Ohio Raspberry Tips

At very reasonable price. Large quantity of Early Harvest blackberry roots for the trade.—**T. B. MILLER, Springdale, Ark.**

3 MONTHS FREE

THE INVENTOR'S REVIEW.

A journal of advice for everybody. Fully illustrated. Gives latest and most reliable information concerning industrial, mining, oil and other stocks and enterprises. No investor can afford to be without it. Keep posted. Knowledge is power. Fortunes have been lost for the want of knowledge of opportunities that came too late, and fortunes have been made by gaining knowledge easily obtained if you will only seek it. Great opportunities come and go. Great fakes likewise. Get posted before investing in anything. Write at once for free sample copy.

THE INVESTOR'S REVIEW,
1534 Gaff Bldg., Chicago, Ill.

Economy Cherry Clipper

With it one can clip more than two by the usual way and save every cherry. Sent prepaid for 45c. Illustrated circular free.

Address Patentee and Mfr., **B. J. DOWNING, DENVER, COLO.**

FOR EXCHANGE—Oliver typewriter, perfect order, for nursery stock. Cost $100, price $65. Rev. S. C. Stanhope, Stuttgart, Ark.

Gasoline Engines for Spraying Outfits.

A great many Fruit-Grower readers are interested in power spraying outfits, which will do quick, effective work and maintain a very high pressure. For large orchards these outfits are becoming most popular. Those who desire the best outfits are considering the matter of using gasoline engines to furnish power to operate spray pumps, and all such persons should write to the Weber Gas & Gasoline Engine Co., Box 218, Kansas City, Mo., for a copy of their catalogue. This company makes gasoline engines of all kinds, and has an engine exactly suited to the needs of fruit-growers of which a special is made. This company has an advertisement elsewhere in the Fruit-Grower, and will be pleased to furnish any information as to the size of pump one will need for this work, together with its weight, cost, capacity, city. When you write, mention the Western Fruit-Grower.

What Rheumatics Should Eat.

Bacon is good.

Avoid red meats. They're rich in uric acid.

Chicken, turkey and all flesh of fowls is excellent.

Fish of all kinds is good.

Vegetables of all kinds are good, especially rice and macaroni.

Use vinegar and spices sparingly.

Drink plenty of pure water—but little with meals, however.

Go slow on tea and coffee, and use no liquors whatever.

Rheumatic pains are evidence of the presence of urid acid, lactic acid and other foreign substances which are absorbed from red meats and "rich" foods. While careful diet will prevent future accumulation of acid poison, the acid already in the system must be expelled or a long period of torture endured. It is best to do this without introducing drugs into the stomach which interfere with digestion. Magic Foot Drafts, which are small plasters applied to the soles of the feet, have the property of stimulating the expulsion of acid poisons through the large foot pores in the form of sweat, 64 per cent of the nitrogen of which is in the form of the poison urea. The Drafts, which are worn without the least inconvenience, draw out and absorb these impurities, and have been so successful that they are in use in almost every country in the world. The Magic Foot Draft Co., 332F Courtland St., Jackson, Mich., send the Drafts free on approval to everyone who writes. If you are satisfied with the benefits received, send one dollar. If not, send nothing. You decide. A fine booklet on rheumatism, illustrated in three colors, is sent free with the Drafts. Write today and be cured.

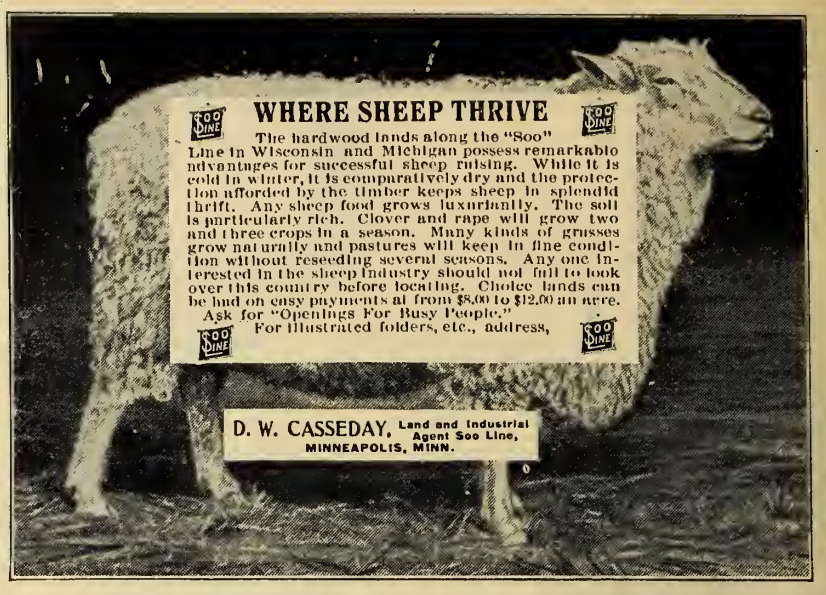
Use Good Judgment

In Other Words, Buy.

BY BUYING NOW YOU ACT WITH wisdom. To gain a competeuce means to embrace this opportunity.

I offer for sale a splendid 80 acres just south of this city, an hour's drive, reached by Broadway macadam road, all tillable but about three acres at barn lot. Rich and well located; will grow wheat, oats, corn, grass, timothy, clover and alfalfa in greatest abundance. Now, listen! It has 20 acres of winter apple rchard of Ben Davis, Gano, Jonathan, Arkansas Black and other varieties, 125 bearing pear trees, 375 small pear trees, 350 grape vines, one acre of blackberries, fenced and cross fenced, with wire, a cheap 5-room house, heated and lighted by natural gas; a splendid well at the house, fine stock water in abundance at the barn lot. The fruit will pay a big interest on cost and then you have sixty acres to farm. On account of splendid business opportunity in California the owner will sacrifice this. Call on or white

J. H. LIPSCOMB,
306 Fidelity Trust bdg., Kausas City, Mo.



Schulze Trees Fruit

WHERE OTHERS FAIL

Result of the O. K. whole root Pedigree trees. We sell wholesale direct to planter and do up to date packing, guarantee safe arrival. **We Pay Freight.** Write for Planters' Guide and Fruit Book Improved (free). We offer true to name Reagan Red or Black Ben. Davis, Collin's Red or Champion, Oliver Red or Senator, Richardson Red or Apple of Commerce, Delicious, Liveland Raspberry, etc. Scions obtained from bearing trees. A large assortment of all kinds of nursery stock, peach, plum, cherry, apple, Pear, etc. No. 1 apple trees for $6.00 per 100. Get list of varieties and make up your own order.

MORE SALESMEN WANTED **SCHULZE BROS., Brussels, Ill.** MORE SALESMEN WANTED

Fruit Farms and Fruit Land for Sale

Write us for list of bargains in fruit lands and orchards. Frazer Real Estate Co., Gravette, Benton Co., Ark.

FOR SALE—Ten acres, peach orchard, fully planted and equipped. Fruit belt of Texas. $750. Easy terms. D. C. Bovee, 609 Ashland Block, Chicago, Ill.

MISSOURI LANDS IN THE GRAIN BELT

Henry, Cass, Bates, Pettis, Johnson, Vernon and adjoining counties. Write us for maps and descriptive matter. **THE KYLE AGENCY, Clinton, Henry County, Missouri. J. H. Kyle, Mgr.**

LANDS CHEAP.

Large bodies of land and ranches in Kansas, Oklahoma, Texas, Old Mexico, Louisiana, Arkansas, Southern Missouri and California. Tell me what you want and where you want it and I will send you list of bargains of the kind you want in that locality. Also have smaller farms and ranches in all parts of said states. I am working above mentioned territory thoroughly. Write me and see how well and how promptly I will serve you. I divide my net commission even with any land agent or anyone else who sends me the name and address of a prospective buyer to whom I afterwards make a sale. I have land at 35c to $35 per acre. Geo. W. Morris, Lyndon, Kansas.

Fruit, Ranch and Mineral Lands

in Southern Missouri for sale at low prices in subdivisions to suit buyer. Title perfect. A small investment may make you rich. Delays are dangerous. Write at once to **N. F. Murray,** Oregon, Mo. Box 53.

WHEAT BELT OF KANSAS, $5 TO $10 PER ACRE.

Ranch lands in Colorado, $1.50 per acre; fine crops; good soil, water and climate; all lands sold on 10 years' time, one-tenth cash. Special excursion first and third Tuesdays every month; company refunds purchaser's fare. Union Pacific Land Agency, 225 Sheidley Bldg., and room 8, Union Depot, Kansas City, Mo.

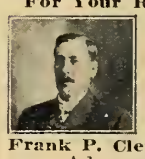
We are the largest dealers in real estate in Grand Valley, the famous peach, apple and pear growing section of Western Colorado. Orchards here 8 years old net the grower from $500 to $700 per acre. The climate is the best in the world and is a specific for lung and throat troubles and asthma. Write us for information. The Home Loan & Investment Co., 357 Main Street, Grand Junction, Colorado.

Fruit and Alfalfa lands in the best fruit country in the United States. NINETEEN SUCCESSIVE CROPS, including PEACHES; free timber and building stone. Coal, $1.25 per ton. Delightful climate, no wind storms. $200 to $600 made on one acre of **Fruit.** Correspondence solicited. C. C. Hawkins, Paonia, Colorado.

Fine Fruit and Corn and Cotton land for sale in the Sunny South. From $3.00 to $1,250 per acre. For folders address G. W. Mathis, Fordyce, Ark.

FOR RENT OR SALE—On crop payments, several choice farms. Send for list. John Mulhall, Sioux City, Iowa.

DO YOU WANT CASH
For Your Real Estate or Business?



I can get it for you. Send me full description and lowest cash price. My methods differ from all others. My office is headquarters for cash buyers. Makes no difference where you are located. Write today. Established 1881. Bank references.

Frank P. Cleveland, Real Estate Expt.
Adams Exp. Bldg., **Chicago.**

Here's a Snap

160 Acres, Howell County, 1 mile from R. R. town, 2½ miles from a town of 1,500; 2 sets of buildings, lays well; 1,000 nine-year-old assorted apple and Elberta peach trees, fine condition; 65 acres cleared and fenced; balance big timber, fine water. A beautiful home and paying farm, $2,600; good terms.

Snap No. 2

160 Acres, McDonald County, Mo., 2 miles to R. R. town, 30 acres cultivated, 50 acres in pasture, balance big oak timber, 80 acres fenced, and 20 in fine orchard, 4-room house, barn, 3 springs, team of horses, wagon and harness, spring wagon, 2 cows, 2 calves, sow & 6 pigs; all farm implements, $1,500, possession. A sure snap. Excursion $9 round trip from Kansas City, 1st and 3d Tuesday each month. Go down with me and buy a home. Big list farms, Mo., Kan., Ark. or Okla., also free pocket map, either state. Send 10 cents in stamps or silver.

LOTT. THE FRUIT LAND MAN.
127 W. Eighth. Kansas City, Mo.

2000 Apple, 6000 Peach Trees

In surplus list. TRUE TO NAME. We think we have as fine a stock of peach trees as can be grown. Over 50 varieties, as good a list of kinds as can be made by 40 years' experience in fruiting. 50 varieties apple, first class stock. Kansas Raspberries at $4.50 1,000, while they last. Salesmen wanted.

Dean & Billingsly, Greenwood, Ind.

EVERY FRUIT-GROWER (Small or Large) SHOULD SEND FOR OUR NEW BOOK

FRUIT-GROWERS' SUPPLIES OF ALL KINDS

To All Who Grow Fruit, a Postal Will Bring It. It Tells All About the Best

Spray Pumps—Liquid, in all sizes. Spray Dusters—in all sizes. Spraying chemicals, tobacco dust. Spray Hose, Couplings, Nozzles, Pruning Knives, Budding and Grafting Knives, Grafting Wax, Raffia, Tree Protectors, Tanks, Strainers, Extension Rods (bamboo lined and iron), Ladders (straight, step and extension), Pole Pruners, Apple Pickers, Baskets (grape, market, shipping and picking), Pruning Shears (hand and long handle), Berry Boxes and Crates, Berry Box Tacks and Nails Apple Barrels, Barreling Tresses, Cider Mills, Liquid Three Fertilizer, Bone Fertilizer, Cultivating Harrows and Plows, Tree Labels, Pruning Saws, Horticultural Books, etc.

We are General Western Distributors for:

Field Force Pump Co., Elmira, N. Y.—Manufacturers of Empire King and Orchard Monarch Spray Pumps, etc.

Leggett & Bro., New York City, N. Y.—Manufacturers of Little Giant, Champion and Jumbo Dusters, etc.

Bowker Insecticide Company, Boston, Mass.—Manufacturers of "Disparene" and other celebrated spraying chemicals, etc.

This is only a brief list. If there is anything you want more information on, write us. Every shipment guaranteed or money refunded.

MISSOURI VALLEY SEED CO.

Largest Horticultural Supply House in the World. ST. JOSEPH, MISSOURI OUR GOOD-SEED BOOK IS ALSO FREE

Great Crops of Strawberries

AND HOW TO GROW THEM

They Grow Big Red Berries

Physically Debeloped Plants

The Book of All Strawberry Books

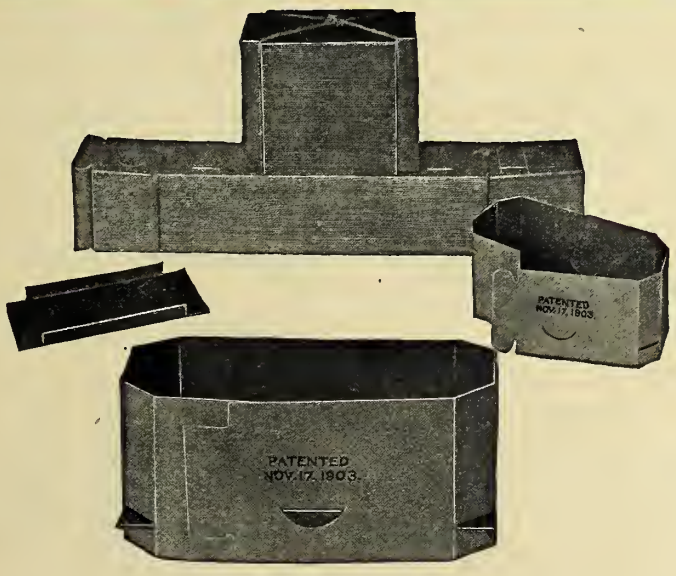
IT is a treatise on Plant Physiology and explains how to develop the fruit organs in a plant. Improving plants through physical changes in buds is now recognized as correct by all advanced horticulturists. If you want to be the strawberry mogul in your community, send for this book.

FREE

R. M. KELLOGG

Three Rivers, Michigan

National Berry Box



Patented Nov. 17, 1903.

Above illustration is a photographic view, showing the NATIONAL BERRY BOX, folded ready for use, box and bottom partly bent ready for a final fold or close, and two bundles, each 100 pieces—sides and bottoms—as they are bundled for shipment.

The NATIONAL BERRY BOX is made out of touch folding combination board with strawboard bottom, both sides are coated with parafine wax to render the boards moist and juice proof, and prevent mildew so often on wood boxes. Is easily put together, no skill nor appliance necessary; can be taken out into the field in bundles and folded up by picker, as needed, in a moment, THUS SAVING THE NAILING BY EXTRA HAND. Is **lighter** in weight than the old style wooden box, and hence **less expensive** to ship. Is also a **splendid medium** for cheap advertisements by having **all sides printed** as desired, this however, can only be done in **large quantities,** at moderate prices.

Every thousand boxes received, means one thousand boxes complete, without waste, as the splitting by nailing, warped bottoms, etc., in wooden boxes is very numerous. Hundreds of thousands of them have been used and re-ordered, a proof of giving entire satisfaction. These boxes can be used several times over again and will always be good and in clean condition; can be washed if soiled.

Price $4.50 per M., without printing.. F. O. B. Factories.

Special discounts on quantities.

MANUFACTURED BY

NATIONAL PAPER BOX CO.

KANSAS CITY, MISSOURI

Strawberry Plants

That Pay to Plant

Clyde ***Ridgeway*** ***Gandy*** ***Senator Dunla***

These plants were dug March 1st, 1904, carried to our packing shed counted at once and photographed. We have had no rain or moisture of any kind since November 1st. Our plants were mulched early and you can see they are in perfect condition; not quite as heavy as if the ground was very wet, but easy to dig and come out in fine shape. They will be somewhat lighter to ship. Never did we have plants make such fine appearance at time of digging. We want our friends and customers to know we can fill orders very promptly, and with plants that are second to none. Every bunch is labeled when counted, which decreases the probability of mistakes in packing.

We grow large quantities of other small fruit plants. They are just as good in quality as our strawberry plants. If you have not ordered your plants, send in your order at once. We have a large supply and you are sure of getting just what you want. If you have not received our catalogue, write for a free copy. Address

F. W. DIXON, Holton, Kas.

Bonham, Texas, 3-10, 1904.

Mr. W. F. Dixon, Holton, Kans.

Dear Sir: The bill of plants came in on Saturday, the 5th. Are fine and in good shape. Will go to Durant, I. T., tomorrow, to plant balance that have arrived there. Signed, W. C. TRIMBLE.

(Mr. Trimble bought 100,000 plants.)

The Incubator Indian.

Readers of Western Fruit-Grower have undoubtedly noticed in recent issues the ads of Hiawatha Incubator which have very naturally included the figure of a sturdy young Indian to embellish the display announcements. We do not know the artist who worked up these drawings but we should judge he must have traveled in the West and lived among the red men as his drawings are so strikingly characteristic. A further example of the artist's skill has come to our desk

in the new catalogue issued by this concern. It is done in colors on a dark green stock and is a remarkably effective piece of business illustrating. The above cut gives a very inadequate idea of it. The camp fire lights up the figure and features of the Indian who stands with his back to the rising moon. The book is as good inside as the promise given by the cover. The matter is written in a breezy, crisp style; just what one would expect from a Western man. We understand the author is Mr. M. O. Adams, secretary of the Incubator company, a recognized authority on questions relating to poultry and incubattion. Taken all in all, the book deserves more than passing notice and we hope this reference to it may prompt many of our readers to write for a copy. It is an interesting addition to incubator literature. Address Hiawatha Mfg. Co., 838 Oregon St., Hiawatha, Kansas.

1—C. J. Martin, president. 2—Wm. Seelig, vice president. 3—T. A. Thompson, secretary. 4—O. P. Shoemaker, director. 5—A. C. Epperson, director.

Anyone who contemplates buying an incubator or brooder ought not to overlook the Sure Hatch Incubator Co., of Clay Center, Neb., and Indianapolis, Ind. The Sure Hatch is a hot water machine, and is so carefully constructed that it is as good as its name. It is guaranteed to work successfully if the operator follows the simple directions furnished, even without previous experience or education in the use of incubators or brooders. The egg trays, the regulator, the heater and other features of the Sure Hatch show the earmarks of success; and the Sure Hatch brooders are constructed in the same careful manner. The book is filled with valuable hints on the care of incubators and brooders, and other poultry information; but not content with this, the company, for the benefit of Sure Hatch customers, have established an information bureau, which gives advice and practical information on nearly all branches of the poultry business. Anyone who wants an incubator or brooder, or who is willing to be convinced that he could make money out of poultry, ought to write for a copy of the Sure Hatch catalogue for 1904.

The No. 6 Iron Age Combined Double and Single Wheel Hoe, Hill and Drill Seeder.

This is an implement advertised in the new catalogue of the Bateman Mfg. Co., Box 506, Grenlock, N. J. Illustrations in the catalogue show the tool ready for sowing garden seeds in continuous rows or in hills at four, six, eight, twelve or twenty-four inches apart. The change from sowing in continuous rows to that of dropping in hills can be instantly made, or the reverse. The seed sowing device is very simple and can be removed quickly, and the tool changed into a complete single or double wheel hoe by making use of the small working tools, extra wheel, etc., shown in the cut about the machine.

Space will not permit the full explanation of the excellent manner in which this tool is made throughout. We call attention briefly, however, to certain important facts. The wheels are made of steel, sixteen inches high, and therefore will not give to the inequalities of the soil as a low wheel will do. They are light in comparison to the heavy cast iron wheel, yet by many years of use they have proven to be of the required strength.

The frame is of bicycle construction, consisting of pipe coupled to malleable castings, and is designed and braced in such manner that it is exceedingly strong and will not break or get out of shape.

In designing the seed sowing device simplicity of construction, convenience of adjustment and perfection of work were kept constantly in mind. The agitator is simply a revolving brush of selected bristles, which absolutely will not injure the seed. The seed hopper holds two quarts. The light weight of this tool, combined with the remarkable strength of same, cannot help but appeal to you as having excellent advantages, especially since this is a tool that is to be pushed solely by hand.

This implement, as well as a complete line of garden tools, horse hoes and cultivators, riding cultivators, two-horse walking cultivators, special trucking tools, potato planters, etc., are made by the Bateman Mfg. Co., Box 506, Grenlock, N. J., who guarantee their implements to be as represented, and will be pleased to send their catalogue free to all who make inquiry for same.

A Chick Marker Free.

Every poultry raiser needs one of these handy markers. It takes just a little time to punch a small hole or holes in the web between the chick's toes. There are fifteen ways you can mark them. This helps to identify one breed from another, also prevents any confusion in records. We want every poultry raiser to have one of these markers as a souvenir from the Gem Incubator Company. If you would like one of these markers free together with a copy of our handsome new catalogue, make the request at once, enclosing 5 cents in stamps for postage and packing mentioning Western Fruit-Grower, and you will receive the same by return mail. Don't delay for the supply is limited. Address: The Gem Incubator Co., Box 50, Dayton, Ohio.

The Model Incubators.

One of the makes of incubators which is attracting much attention this season is The Model, made by Charles A. Cyphers, 39-47 Henry St., Buffalo, N. Y. Mr. Cyphers has had a great deal of experience in the manufacture of incubators, and The Model is the outcome of his years of experience. It has many points which commend it to the careful person, all of which are fully explained in the catalogue which is sent free for the asking. Fruit-Grower readers should send for this catalogue, and see what this expert has to say concerning artificial incubation. Address as given above, mentioning the Western Fruit-Grower when you write.

Scott Incubator.

Co-operative enterprises are becoming popular in the United States. Creameries, elevators, stores and many other kinds of business are carried on successfully by co-operative companies, and the idea of profit sharing with the customer seems to be making rapid progress. In France, Germany, Denmark, England and other European co-operative stores or "syndicates" carry on great enterprises whose business, in the aggregate, runs into the hundreds of millions of dollars. Great co-operative stores in England, take the place of our department stores. The system is one that ought to be encouraged in this country, and considerable interest, along this line, has been aroused by the proposition of the Scott Incubator Company of Indianapolis to place their business on a co-operative basis. A neat illustrated 32-page book gives full particulars and is sent free to any one who inquires for it. The Scott people have been doing a good business and making money, but they point out how they can do a great deal more business if they enlist the co-operation of a large number of stockholders throughout the country. "Every stockholder an agent and every agent a stockholder" is the corner stone of the proposition.

Johnson says the real worth of an Incubator is in its hatching, ease of operation, economy and respectable appearance, and that all other considerations are foreign to a sensible way of looking at these things.

M. M Johnson's new Catalogue of **Old Trusty Incubators** has come to hand; big fat catalogue that is full of poultry meat. It is the kind of catalogue one wants to show to his friends, and read over with the women folks We say: "Well done, Johnson" All the expert catalogue writers on earth could not have produced such a catalogue. Every page gives a lesson and there are 108 of them. There is sound philosophy of honesty and unselfishness in it. There is not a farm home in America which would not be brightened and cheered by this book which Johnson calls a catalogue.

From the Nebraska Farmer of Dec. 24, 1903.

Denver, Colo., December 19, 1903.

Mr. M. M. Johnson: Your catalogue came to hand. Never did I see one so full of good common sense and language. Not in a single instance have I seen wherein you have overdrawn on the possibilities and probabilities of poultry raising, as is so often the case in books of a like nature. Being an engineer myself, and having a pretty good idea what constitutes a good heating system, I would certainly say that your invention should appeal to thinking people whether they have made hot water circulation a study or not. I shall retain the book and your letter a long time so that I can see how Johnson talks.

Wm. A. NIGH, Engineer Stock Yards, Box 91.

Try Harrison's Trees.

The right kind of trees for this spring's planting can be had at the Harrison Nurseries, Berlin, Md. If you have never tried Harrison's, this is a good time. Their trees have long been famous. The climate and soil combine to produce the best. It is the long time policy of the concern to rely upon the quality of their stock rather than agents, to do their selling. An order once placed with the firm is sure to be followed by others. Readers of this paper may take our assurance as to receiving right treatment. Their offering this spring is large and exceedingly fine. There's almost an endless variety of apples, all seasons and every kind worth planting, all good varieties of peaches of which they make a specialty and on which they excel, pears, cherries, asparagus, etc. Their prices are as low as can be found anywhere. Don't make the mistake of buying trees of any kind without sending for Harrison's catalogue. Ask also for their special spring tree lists. They are mailed free. Mention the Fruit-Grower.

A Few Choice Fruits.

People who are particular about planting choice small fruits, both as to variety and character of stock, can do no better than lay their wants before Allen L. Wood of Rochester, N. Y. This is the class that largely makes up his trade. Large as this trade is, if more people knew of the advantage of dealing with him, it would be greatly increased. There's usually a disappointed feeling when the stock arrives after buying on representations of agents or from fancy catalogue pictures. The disappointment is keener when fruiting time comes. There's no regret following a purchase from Mr. Wood. His fancy fruit collections this year, at low prices to show the quality of his stock, ought to interest those who have not room for much but want the best. There's an even dozen of these collection offers. He advertises them with us. Some one of them is most likely to meet every planter's wishes. He publishes a special list of these, separate from his catalogue. Both the list and catalogue will come to you free. If you have room for a few choice things this spring and don't care to invest much, it is worth while to write him.

Here are the best things advertised in this issue: Spray pumps, on page 2; Disparene, on page 7; dust sprayers, on page 28; seeds, on pages 11 and 15. Missouri Valley Seed Co., headquarters, St. Joseph, Mo.

The "Acme" pulberizing harrow is the cheapest or lowest priced riding harrow on the market.

Grand Island Route

SHORT LINE

Between

ST. JOSEPH and KANSAS CITY

Direct line to Hiawatha, Seneca, Marysville, Kan.; Fairbury, Hastings, and Grand Island, Nebraska.

Quick Time to California and the Pacific Northwest.

C. T. HUMMER, C. P. & T. A.
S. M. ADSIT, Gen'l Pass. Agent.
BOARD OF TRADE, ST. JOSEPH, MO.

'Tis the "Comfort Line"

Free Reclining Chair Cars

ON THE POPULAR

Henderson Route

BETWEEN

St. Louis, Louisville the East and Southeast

As we are the originators of Free Reclining Chair Car Service Between St. Louis and Louisville, Don't You Think It Would Pay You, In Traveling, to "Get the Henderson Route Habit?"—It Will Us.

ASK ABOUT IT

W. C. LINDSAY, General Agent **F. G. CUNNINGHAM, Trav. Pass. Agt.**
ST. LOUIS, MO.

Geo. A. Sweet Nursery Co.

The Fruit-Grower has received the catalogue of this firm, which is one of the neatest which has reached this office this season. This company is one of the oldest in the country, as well as one of the most reliable, and its catalogue is naturally in keeping with the standing of the firm. A full line of fruit trees and plants is carried as well as a complete line of roses and other ornamental stock. A feature of the catalogue which will interest all fruit-growers is the pictures of parts of the orchards of various patrons of the firm, showing how the trees look when planted out in the orchards. The advertisement of the Sweet Nursery Co. appears in this issue, and we recommend that our readers look for it, and then send for catalogue.

The "Acme" pulverizing harrow, while a "general purpose" harrow, is pre-eminently adapted to the preparation of ground for winter and other grain where the drill is to be used and for covering in the seed where the drill is not used.

RHEUMATISM

Cured Through the Feet

Thousands Are Cured At Home Every Month by MAGIC FOOT DRAFTS. Why Not YOU?

Try Them—FREE

The Drafts cured Mrs. W. D. Harriman, wife ef Judge Harriman ef Ann Arbor, Mich.

They cured H. C. Van Valkenburg, Previdence, R. I., ef an intensely painful case of muscular rheumatism.

They cured severe rheumatism of the arms, neck and back fer T. C. Pendleten, Jackson, Micn.

Mrs. Caspar Yahrsderfer, Jackson, Mich., 70 years e.., was cured in a few weeks, after suffering 30 years.

The Drafts cured James Gilbert, Lecemetive Dept., Mich. Cent. R. R., Jacksen, Mich., after 27 years of pain.

Dr. Van Vleck, Jacksen, Mich., writes that they cured him and he is now using them in his practice.

They have cured hundreds ef cases prebably just like yeurs. Isn't the chance worth taking? You try them free. Send us yeur name. We will send you by return mail a pair ef Magic Feot Drafts—prepaid. If yeu are satisfied with the cemfort they give yeu, send us One Dellar. If net, yeu send us nothing. **You decide.** Magic Feet Drafts are wern witheut the least incenvenience, and cure rheumatism in every part ef the bedy by stimulating expulsion ef acid peisens through the great feot peres. Splendid booklet, illustrated in celers, free with the trial Drafts. Den't suffer, but write teday te the Magic Feet Draft Ce., 332F Oliver Bldg., Jacksen, Mich.

A SAMPLE BOX OF

The Best Headache Cure

ever offered for sale fer 12c postpaid. A sample Bex ef the **Safest** and **Surest** Corn Cure on the market fer 12 cents pestpaid. Agents wanted.

BALLAGH & COMPANY
NEVADA, MISSOURI.

SAPERDINE

Best Borer Prebentibe Knowm

Four years' practical test. Absolutely prevents borers. Also protects bark from injury by rabbits and sheep. A scientific remedy. Application requires no apparatus. Cheap and efficient. One application yearly, in April or May. For further information address DR. H. O. BEESEN, NOEL, MO.

100 TAYLOR Blackberries $1

The sweetest, best Blackberry for home use. Reminds you of the sweet wild berries of childhood's happy days. Can be planted as late as June 15. Add 50 cents per 100 if by mail. All other berry fruit plants. Catalogue free.

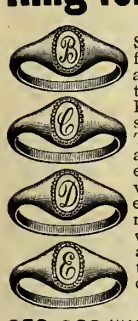
L. J. FARMER, Pulaski, N. Y

Baldwin Cherry Trees

The largest, sweetest and best, is being planted from Maine to Oregon, and the supply of trees is being rapidly reduced. My Special Offer is good for only 30 days. 200,000 other fruit trees at wholesale. New descriptive catalogue free.

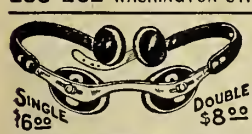
Baldwin, Nurseryman, Seneca, Kas

A Dollar Ring for 12 CENTS



A SOLID GOLD SHELL SIGNET RING, WARRANTED for three years. Finished with a row of raised beading around top and any initial engraved FREE. The picture does not show one half their beauty. They always pass for a $5.00 ring and are all the *rage* at the present time. Suitable for men, women or children and we want everyone to get this ring so they may know the quality of goods we make. For this reason we ask you to send us only 12 cents to help pay postage on ring and catalogue. State size and initial.

S. H. BURNS & CO.
258-262 WASHINGTON ST. BROOKLYN, N. Y.



Ruptured

Send for our RADICAL CURE TRUSS *On Free Trial*

"THE ONLY PERFECT TRUSS." Totally unlike anything made. **You Pay When Satisfied.** WE TAKE ALL RISK.
F. BUCHSTEIN CO., 608 R 1st Ave, S., Minneapolis.

$700.00 PRIZE CONTEST

Open to everybedy. Intensely interesting. Bank references given. Write for particulars. **THE PSYCHIC PUBLISHING CO., Rome, Ga.**

Fruit-Grower Ads Pay Best.

It might interest you to know that we have kept an aecurate aecount of the returns of the money invested in advertisement in ten different papers, and we find the results from our advertisement in the Western Fruit-Grower exceeds that of any other paper by more than ten times. Our judgment is, that it is largely due to the intelligent class of people The Fruit-Grower reaches; particulary the faet that The Fruit-Grower is read by a majority of horticulturists.

Our method of propagating trees has also been an important factor in turning trade our way. The people have come to know the value of trees, which have been propagated from choice, bearing trees of known merits, in the production of quality and quantity of fruit. Our trees are so bred that we now know every one will produce fruit of the highest color, richest flavor, most uniform size, best keepers, and the trees are hardy, early and prolific bearers. Many horticulturists who have investigated our work in this direction, say "Truly our trees are entitled to be called thoroughbred or pedigreed." Also the merit of the Missing Link is now better known, and as the people know of its merit as a keeper, bearer and hardy tree, of course they plant large numbers of the trees.

We have greatly enjoyed reading The Fruit-Grower in the past, and we wish for it the greatest possible success.
Yours very truly,
MISSING LINK APLE CO.,
(Nurserymen), Clayton, Ill.

Re-Topping Sweet Apple Trees.

A correspondent recently sent te the Maine Agricultural Experiment Station the following questions which were answered by Professer W. M. Munsen as below:

"Can sweet apple trees be successfully grafted? Will it pay te re-tep a large sweet apple tree, a reet or mere in diameter? Should an erchard ef 100 trees be all of ene variety?

It is very doubtful if the flaver ef the fruit has any relation te the value of a given tree for purposes ef grafting. Telman Sweet is often used as a basis for top-werking.

Apple trees up te a foet in diameter may be tep-werked if unsatisfactery. Care, however, should be used that too much ef the tep is not removed in any ene year. Cut eff abeut one-third ef the tep the first year and insert scions en stubs not more than two or three inches in diameter. The next year remore more of the top and insert other cions, and the following year complete the work.

It is not advisable to plant a solid block of 100 trees of one variety unless there are other trees in the immediate vicinity. Some varieties are self-fertile and will give satisfactory results if planted alone; but it is always safer to provide for cross fertilization. In large orchards every third or fourth row should be of a different variety. Two or three varieties are enough for a commercial orchard, however, and it is seldom advisable to plant more.

Chas. D. Woeds, Director.

Evergreens from Seed.

The method employed in raising evergreens frem seed has been and is still considered a trade secret by most nurserymen. However, we are able to present our readers the following valuable article from the veteran evergreen grower, Mr. Charles F. Gardner, of Osage, Iowa, who was for three years honored with the Presidency of the Iowa State Horticultural Society, and who has had over forty years active experience in the work of growing evergreens from seed. Mr. Gardner says:

"First select a small well drained spot in garden and prepare the seed bed by spading thoroughly, and then rake the surface until soil is pulverized as finely as possible to get it. On this freshly made seed bed scatter the seed, allowing about twenty-five seeds to the square inch of ground. Press seed into earth with garden roller, or back of spade, and then immediately cover with a very light coat of sand. As soon as planted a partial shade must be made so that the rays of sun will be broken before reaching the bed. The best way to make this shade is to make a lath box two feet high and large enough other ways to nicely cover over the bed. Leave space of one and one-half inches between lath and this will give the right amount of shade, and will also keep chickens, etc., from scratching into the bed. Leave one side of box open and place open side down over the bed. The seed will germinate in from five to seven days, the first thing being noticeable will be the seed itself, which comes up through the sand on a sturdy little stem. In a few days the seed shell drops off and the little tree unfolds its first branches. Keep all grass and weeds fro mthe little trees, and in fall lightly mulch with clean dry straw or hay. The shade must be left over the bed until trees are two years old, at which age they can be transplanted into rews in garden."

One ef the first nurseries in the West te grew evergreens from seed was The Gardner Nursery Ce., whe grew them by the million each year. If you are a lover ef evergreens, and wish te try growing them frem seed, write te this company, mentioning this article, and they will send yeu a packet free, centaining 100 seeds, by return mail.

A Square Deal in More Ways Than One.

We repreduce belew a pheto of ene of Henry Field's corn crates. This manner of shipping seed corn seems te be ideal, and we heartily back up Mr. Field in his efforts to give the farmers real seed cern ef genuine merit. In a shape that remeves any pessibility ef deceptien. The farmer who gets his

seed cern in ene of these crates can tell at a glance whether it is goed er net, and can shell it up to suit himself.

While Mr. Field is mest widely knewn as a seed cern man, and especially in cennectien with ear corn, he sells all kinds of garden and field seeds, mestly Iewa grown, and carries inte all branches of his business the same henesty, eriginality, and directness that characterizes his seed cern prepesitien. Being raised a market gardener, he is especially qualified for the seed business, and his catalegue is full ef valuable information fer gardeners. His 1904 catalegue we consider ene of the handsemest catalogues ef the year. It may be had free, and alse samples of seed cern, by addressing Henry Field, Seedsman, Shenandeah, Iewa. Mention this paper.

A Life Sacrificed.

Russell, Kan., February 4, 1904.
Stromberg-Carlsen Tel. Mfg. Ce.,
Chicago, Ill.

I am werking a great deal this winter, working up telephene lines. I have been handling the ——— and the ——— telephones and weuld like te make a deal with yeu fer 25 er 50 ef yeur telephenes. Weuld send cash with order er as soon as received. I could give you satisfactery references. I mean business and will deal with yeu if prices suit me. I would want prices on four and five bar 1,600 ohm bridging instruments.

One ef my beys was werking en my farm in Pawnee Ceunty, Kan., fifteen miles frem the doctor. He was taken sick with appendicitis, and if I ceuld have had a telephene there I might have getten a decter in time to have saved his life. So you will see I know the importance of having telephones in the country and have worked up a telephone line on my farm to town and am now working up seme lines in Russel County. Am doing this work not so much for my gain but in time of need. Respectfully, W. W. Cook.

A New Berry Box.

Recently the Fruit-Grower referred to the need of a berry box made of paper, to take the place of wooden boxes, timber for which is becoming scarce. The National Paper Box Co., Kansas City, Mo., advertise in this issue a paper box which the company claims solves the problem. The cempany states that while the boxes seemingly cost a little more than the woeden box, the cost is really no greater, if as great, when all things are considered. There is no loss from split and imperfect boxes, and there is no warping. These boxes are made of heavy cardboard, which is coated with parafine was on beth sides, which renders the boxes proof against moisture and from abserbing the fruit juices. These boxes will net mildew, as will woeden boxes, and will keep in perfect condition.

The National Paper Box Company reperts inquiries from all over the United States, answering the Fruit-Grower advertisement, showing there is need of this package. Right to manufacture the boxes in different states is offered fer sale, and the prediction has been made that this box will solve the problem of future supply of berry packages. For any desired information address National Paper Box Co., Kansas City, Mo., mentioning the Western Fruit-Grower when you write.

Here are the best things advertised in this issue: Spray pumps, on page 2; Disparene, on page 7; dust sprayers, on page 28; seeds, on pages 11 and 15. Missouri Valley Seed Co., headquarters, St. Joseph, Mo.

"I don't think I will try to do without the Fruit-Grower until I quit trying to grow fruit," is what George S. Townsend, Troy, Mo., says when he sends a block of five subscribers.

The "Acme" Pulverizing Harrow is practically a combination of three tools, viz: Harrow, Crusher and Leveler.

COTTON BELT ROUTE

Low Rates Southwest

Twice a month the Cotton Belt sells homeseekers' tickets to points in Southeast Missouri, Arkansas, Louisiana and Texas.

Dates are March 1 and 15. April 5 and 19.

The rate is about half fare, stop overs allowed going, 21 days' return limit.

This is a country of mild climate, of diversified crops, of cheap homes.

Write for descriptive literature, maps, etc.

E. W. La BEAUME, G. P. & T. A.,
Cotton Belt, St. Louis, Mo.
Form 144

Attention Farmers

Why remain in the North and stay indeors six menths in the year consuming what yeu raise during the other six months?

Ge South where you can werk out deers every menth in the year, and where you are producing semething the year round. If you are a steck raiser you know your steck are new "eating their heads eff" and, besides, have to be pretected from the rigors of winter by expensive shelter.

Economical stock feeding requires the combination of botn flesh-forming and fat-forming feeds in certain proportions. Alabama and Florida produce in abundance the velvet bean and cassava, the first a flesh producer, and the latter a fat producer, and they are the cheapest and best fattening materials known to the world.

More money ean be made and with less labor, in general farming, fruit and berry growing and truck gardening aleng our road in the South than in any other section of the Union.

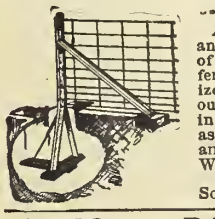
If you are interested and desire further information en the subject, address.

G. A. PARK,
Gen'l Immigration and Industrial Agent, Louisville & Nashville R. R. Co., LOUISVILLE, KY.

General Nursery Stock

Apple, Peach, Pear, Cherry and Plum trees, Berries, Grapes. Hardy Roses, Shrubs, Vines, Evergreens, etc. Strictly first-class. Satisfaction guaranteed. Write for prices. Agents wanted.

E. MOHLER, Plattsburg, Missouri



"STAY THERE!" Anchor Posts at ends and corners will add years of usefulness to your wire fences. Made of Galvanized Steel Angles thoroughly anchored and braced in all directions. As cheap as wood posts, easier to set and will last much longer. Write for circular and prices.
CHASE COLVIN,
South Charleston, Ohio.

No More Blind Horses

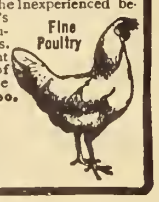
For Specific Ophthalmia, Moon Blindness, and other sore eyes, **BARRY CO., Iowa City, Iowa** have a sure cure.

No Guessing

You know in advance what will come if the eggs are fertile when you use the self-regulating

Successful Incubators and Brooders

The machines for busy people and the inexperienced because they run themselves. That's the unqualified experience of thousands. The same under all conditions. Eastern orders have prompt shipment from the Buffalo House. 100 pens of Standard fowls. Incubator catalogue with fine illustrated poultry catalog free.



Des Moines Incubator Company,
Dept. 553,
Des Moines, Ia.

A Well-Behaved Lamp

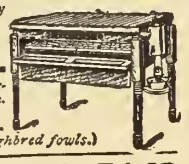
Trust it not to fume. Needs little attention. Electric burner never clogs. Every part about

WEIR INCUBATORS AND BROODERS

is constructed to raise hardy, profitable chicks. Sensitive regulator — even heater — fresh, clean, warm air for chicks and eggs. $5 up. Catalog free.
THE F. E. WEIR COMPANY, LIGONIER, IND.

TRY AN IDEAL.

J. W. Miller's incubator—made by the man who knows. It is really self-regulating.



30 DAYS FREE TRIAL

We get no money until you are perfectly satisfied. Poultry Book Free.
J. W. MILLER CO.,
Box 68, Freeport, Ill.
(Poultry supplies and thoroughbred fowls.)

IT IS A FACT

that poultry pays a larger profit for the money invested than any other business; that anybody may make a success of it without long training or previous experience; that the Reliable Incubators and Brooders will give the best results in all cases. Our 20th Century Poultry Book tells just why, and a hundred other things you should know. We mail the book for 10 cents. Write to-day. We have 115 yards of thoroughbred poultry.
RELIABLE INCUBATOR & BROODER CO., Box B-155 Quincy, Ill.

I J. F. Siems, want every one to know all about the

Natural Hen Incubator

and will be greatly pleased to send our **catalogue,** telling all about it, together with a **25c Lice Formula Free of charge.** If you send us your address. Only plan totally different from all others. 200 egg hatcher only $3. Agents wanted everywhere, either sex. No experience necessary. Secure your territory at once. Address
NATURAL HEN INCUBATOR CO., Box B- 87, Columbus, Neb.

True Bred Poultry

Our 75 breeding pens contain the best fowls of the best varieties. We have **All the Standard Breeds.** Our Poultry Farm contains more high grade poultry than any other farm in this country, and is produced from a long line of prominent prize winners. Our COMPLETE POULTRY BOOK, postpaid for 4c. Worth many dollars to you. Write for it to-day.
ROYAL POULTRY FARM,
Dept. 488 Des Moines, Iowa.

MICA CRYSTAL GRIT

makes digestion go on regularly and that means good feeling, thriving, paying fowls. Mica, quartz, iron and magnesia in just the right proportions. 100 lb. bag, 65c; Remember our other 100 lb. bag specialties: Laying Food, $2.25; Chick Feed, $2.50; Oyster Shells, 60c; Clover Meal, $2.00, all F. O. B. Chicago, cash with order.
Don't fail to get our new Poultry Supply Catalogue.
DARLING & COMPANY,
Dept. 33, Union Stock Yards, Chicago, Illinois.

Exact Heat

That's what you get when your incubator is fitted and governed with the Compound
ACME REGULATOR
Catalog of Lamps, Incubator Supplies, free. Ask about plans for building machines at cost.
The H. M. Sheer Co., Box 21
Quincy, Ill.

POULTRY PAYS

when the hens lay. Keep them laying. For hatching and brooding use the best reasonable priced Incubators and Brooders — built upon honor, sold upon guarantee,
Send for Free Catalog
THE ORMAS
L. A. Banta, Ligonier, Indiana

Doesn't Overheat Air

The ventilating and heating system of the **Gem Incubator** doesn't burn the air and kill chicks in shell. Learn more about this low priced, high per cent hatcher from our free catalogue.
Gem Incubator Co., Box 50, Dayton, O.

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lack sufficient nourishment. Fatten them —make them healthy—feed them **Mrs. Pinkerton's Chick Food.** It prevents bowel trouble. It's all food—easily digested. Write for catalog of prize birds at St. Louis and Chicago 1903 Shows. Gives prices and valuable information.
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Poultry Department

Likes the White Leghorns.

Wm. N. Kitchen, Grenfield, Ind., raises poultry in connection with his work of fruit growing. He says: "We have tried the Plymouth Rocks, the Black Langshans, Buff Cochins and Light Brahmas, and last of all we tried the White Leghorns, and they are certainly the ones for eggs. My wife has been getting eggs all winter and they have sold for a good price. The White Leghorns are rather tender, but we keep them up during very cold weather."

Poultry Questions.

Please tell me through the poultry column of your paper if a four foot wire netting fence will keep poultry in by clipping one wing. Is it possible to make four-foot posts do for a five-foot or more wire netting fence and at the same time be presentable? If I keep fifty hens in a yard, 75x100 feet, all summer, should I feed them beef scraps in place of meat food they would get on range? Should I feed beef scraps and how much to small chicks inclosed in a yard? GRACE JOBSON.

Bucklin, Mo.

This was referred to M. M. Johnson, Clay Center, Neb., who replies as follows: In reply to G. J., Bucklin, Mo., will say that it depends a great deal upon what variety of poultry it is, whether a four-foot fence would be sufficient to keep them in. It also depends a great deal on the kind of fence which has been in use: If they have been in the habit of flying over wire fences, they have learned the art. A very nice way to fix a four-foot fence is to stretch the fence on the outside of the posts, have the posts about the same height of the wire fence, and while it would be a little trouble to sharpen the top of the posts, it would be a good thing. Then, on the inside of the fence, stretch a small wire, about No. 14, right at the top of the posts on about the same level of the top wire of the fence. By this plan the fowls very seldom notice the small wire, and in trying to light on the fence, the small wire catches their necks and throws them back right on the inside of the fence. Clipping the wings is a very good plan. The most satisfactory way to fix a yard, such as your correspondent mentions, is to put a board ten or twelve inches wide at the bottom of the fence close to the ground; this will keep in the small chicks, and add another foot to the neight of the fence. Where the posts would be too short for this, pieces could be nailed or bolted to the tops of the posts to make them high enough. It would be a very easy matter to over-feed with beef scraps, such as we buy. A quart of beef scraps to fifty hens twice per week would be sufficient. The beef scraps do not entirely take the place of fresh meat. A pint of beef scraps fed to one hundred chicks twice per week would be all right. As in the case with older fowls, the beef scraps do not entirely take the place of fresh meat, bugs, worms, etc.

On a piece of ground 75x100 feet there could be quite a lot of green stuff raised, rye, lettuce, and stuff of this nature. The reason why I limit the quantity of beef scraps is because most everyone has a lot of meat scraps and things of this kind from the table, and this makes up for the limited quantity of beef scraps.

The greatest trouble in raising a large number on a small piece of ground is in the ground getting poisoned. The fowls are tramping over it continually, and possibly in wet weather, the ground gets poisoned and the fowls do not do so well. It is a good plan to spade up the ground often, or plow it. Fresh earth is a good disinfectant, besides a new field for them.

Rations for Laying Hens.

An important consideration in the production of eggs is the food which is given the hens. It should be borne in mind that "growth and egg production can only be sustained by the food in excess of that required to support life. Hens in full laying seem to require rations which have a larger relative content of protein and ash, and show an increase in fuel value of 15 to 40 per cent, acording to size, over those required for maintenance."

A sample of a ration which would correspond to the requirements of laying hens is suggested by Professor Wheeler of the New York Experiment Station, for hens weighing 5 to 8 pounds: Cracked corn 1 pound, wheat 0.75 pound, corn meal 0.75 pound, and 0.5 pound each of wheat middlings, buckwheat middlings, and animal meal, with 0.66 pound of fresh bone ond 0.75 pound of young green alfalfa.

The natural food of poultry consists of grains, insects, green forage, and grit, and accordingly in domestication it is reasonable that they should be fed cereal grains and other milling products, such animal feeds as meat meals and skim milk, and should also receive an abundance of green feed or such substitutes for it as roots or steamed clover. Oyster shells, grit, and an abundance of clean drinking water are also prime requisites.

In the United States corn is a favorite feed for chickens, though, as Professor Wheeler states, common grains "seem practically interchangeable and many grain by-products can be freely substituted for different whole grains or for each other and all combined as desired."

The Massachusetts Station has compared corn with wheat and corn with buckwheat, beef scraps or other animal feed constituting a part of the ration in every case. As regards corn and wheat, the results for several years have not been entirely consistent, though on the whole the egg yield on both grains has been satisfactory. In a comparison of corn and buckwheat, "the egg yield has been rather small with the advantage decidedly in favor of the corn."

In a test at the Utah Station the egg

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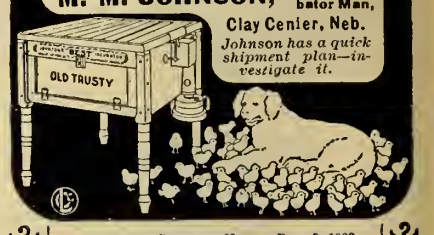

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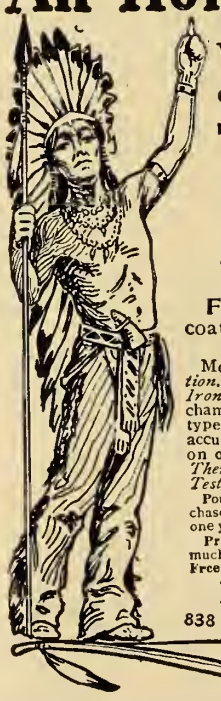

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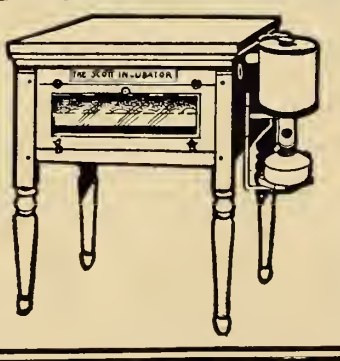

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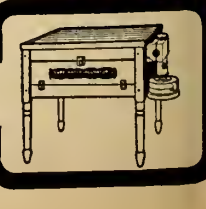

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a book that will help every poultry keeper solve all the problems and make poultry keeping pay. An account of actual experience, you ought to read. Free if you mention this paper. Geo. H. Lee Co., Omaha, Neb.

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of the leading new and old varieties in assortment for Spring, 1904. We sell direct to planters, at very low prices.
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Please mention Western Fruit-Grower.

yield on a wheat ration was better than on corn, though both grains were fairly satsfactory. Substituting sunflower seed for most of the corn did not materially affect the egg yield, though the cost of feed per dozen eggs was somewhat greater on the sunflower seed ration.

In Ontario, an important poultry region, where the winters in general are more severe than in the United States, wheat, according to Prof. W. R. Graham of the Ontario Agricultural College, is the most popular feed. Corn, he states, is not used there to so great an extent as in the New England States, though he believes that its use is justified and might be profitably extended. Owing to its high fuel value, and fat-producing qualities, it is an important addition to winter rations. According to Professor Graham—

"Oats should be a first class food for poultry; but, owing to the large percentage of hull, they are not relished by chickens, and for this reason they are somewhat indigestible. When ground, they are used pretty freely in mash food; also, the rolled and granulated oatmeals are used for feeding young chicks. The ground oat, without the hull, is used extensively for fattening fowls.

"Barley, either whole or ground, is very good. It has rather too much hull; but otherwise it is a satisfactory food. It is considered by many to be next to wheat in point of value.

"Buckwheat is very popular as an egg-producer in districts where it is grown extensively. Some difficulty is at times experienced when first feeding it to fowls in getting them to eat it, but this is usually overcome in a day or so, if other feeds are withheld. Boiling the buckwheat will sometimes start the birds to eat it. After the birds once get accustomed to its appearance, it is much relished by them. Ground buckwheat is an excellent food to use in a fattening ration. It is somewhat like corn in its fattening properties, and therefore it is better for winter than summer use.

'Shorts and wheat bran are both used extensively in making mashes, or soft foods. They are excellent foods to use in maintaining the health of the flock."

The relative merits of whole grain and of ground grain made into a mash have been studied from time to time. The practice of successful poultry raisers and the results of numerous tests show that to secure the best results the day's rations should be made up of both sorts of feed. In experiments at the West Virginia Station better results were obtained with both old and young fowls "when about one-third of the grain ration was fed ground and moistened than when all of the grain was fed whole and scattered in the litter." Scattering a portion of the unground grain, however, has the advantage of compelling the hens to take exercise which they need. Opinions differ somewhat as to the proper time for feeding whole grains and the mash. According to tests at the Massachusetts Station, the best results followed feeding the mash in the morning and the grain at night. According to Professor Graham, it is more satisfactory to feed the mash at night.

The objection to the former plan is that the hen is likely to become gorged with food early in the morning, and thus take to the roost for the rest of the day, which is usually followed by hens becoming too fat, and the egg record becoming small; but notwithstanding, many successful poultrymen use this method to advantage. The objection to feeding the mash at night is that it becomes quickly digested, and the bird has not sufficient food to last it during the long winter night; but this objection can be overcome by giving a little whole grain after the mash at night.

In experiments at West Virginia Station the egg production was practically the same whether the mash was fed in the morning or at night.

Different kinds of animal feed, such as meat meal and cut green bone, have been compared at a number of stations, notably at the Massachusetts Station and more recently at the West Virginia Station, the general conclusion which may be fairly drawn from all the tests being that the more common materials of this kind are about equally satisfactory provided they are of good quality.

It was observed in a test at the Utah Station that pullets fed dried blood as a part of the ration began to lay earlier than those given none. In some cases this feed seemed to increase markedly the egg production, though in others the yearly egg yield was not materially affected by the addition of dried blood to the ration.

Animal feed is usually regarded as essentially for poultry, especially for ducks, but a series of tests carried on at the New York State Station indicates that the better results obtained with rations containing animal matter are due largely to the greater proportion of mineral matter which such rations contain and that equally good results may be obtained with chickens by feeding a ration made up of vegetable feeding stuffs, provided mineral matter is added to the ration to take the place of that which is lacking in the vegetable feeding stuffs as compared with animal products. The experiments of the New York State Station bring out very clearly the importance of providing laying hens with rations containing an abundance of mineral matter, a point which is sometimes neglected. It is especially important that the rations should be well supplied with lime and phosphates, which are essential to the formation of egg shells, bone, and other tissue. "Most grain foods which naturally constitute the bulk of ordinary rations contain little mineral matter and the amount of lime is notably low." The lime and phosphates may be supplied in oyster shells and bone ash. It is considered best, however, in practice to use some animal food.

The green feeds which are justly considered so important add to the palatability of the ration, furnished a considerable amount of nutritive material, and undoubtedly help to maintain hens in good condition. The New York State Station recommends for this purpose the more nitrogenous forage plants such as clover, alfalfa, and immature grasses. These feeds also contain more of the needed lime than do grains." It must be remembered that fowls are not fitted to depend too largely upon bulky feed and that the proportion of grain in the ration must always be fairly large. Acording to Professor Wheeler, another and very important reason, which is sometimes overlooked for using such foods as young clover, fresh or dried, is the effect on the color of the egg yolk.

Eggs from hens which are fed only certain grain and animal substances generally have yolks of a pale yellow color. This is often objected to by those who have a preference for eggs with darker, orange-colored yolks. The liberal feeding of fresh or dried young clover, alfalfa, or grass will generally insure the deeper coloration. The cause of this frequent lack of what may be considered the normal yellow color of the egg yolk is not well known, but the occurrance of the pale color can be generally prevented by attention to the food.

The above facts are illustrated by the results of a test at the New York State Station, in which four lots of hens were fed alike except that no hay nor green feed was given to one, while the others had different amounts of clover hay alternating with green alfalfa. The eggs showed marked differences in color. Those laid by the hens having no green feed had yolks of a light shade, the color increasing in intensity with the proportion of hay or green feed in the ration. The greenish tint of the white also varied, but not so regularly.

❦ ❦ ❦

Here are the best things advertised in this issue: Spray pumps, on page 2; Disparene, on page 7; dust sprayers, on page 28; seeds, on pages 11 and 15. Missouri Valley Seed Co., headquarters, St. Joseph, Mo.

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30,000 cream of other kinds, budded from my experimental orchard. Plenty of Apple, Plum, Pear and small fruits, all in Nature's cold storage, the ground.
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Customers for the best selected lot of Nursery Stock in the West. Catalogues free on application.

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Nuts as a Substitute for Meat.

Whether considered from the standpoint of nutrition, economy or hygiene, it is quite evident that nuts are superior to meats for food.

There was a time when the difficulty of thoroughly masticating nuts, rendering them hard to digest, was an objection to their use. Modern methods and machinery have transformed all this. Power roasters can turn out 2,000 to 5,000 lbs. per day. Blanchers remove the skins from 1,500 lbs. per hour; and grinders will convert nuts into such a finely comminuted form as to make them easy to chew, easy to digest and more nutritious than when teeth were relied upon to do the grinding.

In fact, the preparation and manufacture of nuts has advanced so that it is now possible for every family to own their grinder and thus insure having freshly ground nuts.

Nutritive Values.

	Albuminous Elements. Per ct.	Carbonaceous. Per ct.	Total Per ct.
Beef	19	4	28
Peanuts	28	46	87
Beans	22	59	86.8
Almonds	23.7	8.5	87.5
Peas	24	61.5	89.2
Walnuts	12.5	8.9	54.7
Chestnuts	6.9	44.9	61.5

From this table, taken from U. S. Department of Agriculture figures, it will be seen that the humble peanut excels beef by nearly one-half in its chief ingredient protein; in carbonaceous materials one pound of peanuts excels ten pounds of beef; in the total amount of nutrient one pound of peanuts is equal to more than three pounds of beef.

Economic Values.

According to Prof. Kosing of Germany, the cost of 1,000 nutritive units of beef is 26c. The cost of 1,000 nutritive units of butter is 20c. The cost of 1,000 nutritive units of bacon is 15c. The cost of 1,000 nutritive units of peas is 4c. The cost of 1,000 nutritive units of peanut meal is 3c.

From an economic standpoint, legumes and nuts head the list of foods. In hygienic value, the comparison is equally as much in favor of nuts; for all meats contain more or less waste matter entailing extra work for the excretory organs.

Why then should we tie ourselves to the meat trust? Shall rational beings suffer habit to overrule reason and science?

My neighbor, past seventy-five has not eaten meat for the last forty years. I know of a number who have renounced the meat habit with great benefit to themselves.

To those who would like to try the change gradually, here are a few recipes that look and taste like meat.

Peanut Protose.

Two cups of peanut butter, 1 cup of corn starch, two cups tomato juice, two teaspoonfuls of salt. Dissolve the starch and butter in the tomato juice, add the salt, stir thoroughly for five minutes. Pour into tin cans and steam four or five hours.

Pecan Meatose.

One cup of pecan butter, 1¼ cups raw peanut butter, 2 cups of water, 2 teaspoonfuls of salt, 1 cup of corn starch. Mix and beat as above. Steam in cans three to five hours.

Symposia Roast.

Two cups of toasted rye bread, two cups of toasted wheat bread, grind through coffee or nut mill. Molsten and mix with 6 eggs; add 2 cups of ground peanuts, almonds and English walnuts, ⅓ of each, 1 cup Wesson oil; season to taste with sage, salt and pepper. Bake 20 minutes.

"The better farming that is coming," says a writer in Farm and Home, "will surely put a nut tree or shrub of some kind on every farm. Many are the fine memories, to say nothing of possible profits, that can easily be made thus to arise." C. H. SUMNER

Marquand, Mo.

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$1000 PAID TO ANY PERSON WHO CAN PROVE WE DO NOT MEAN WHAT WE SAY—A chance of a lifetime. An honest proposition—No humbugging. No beating about the bush. We will give away **1000 Beautifully Decorated Breakfast, Dinner or Tea Sets.** Each set **56** pieces. Latest design **full size for family use**—to quickly introduce Carbolettes, the greatest Remedy on Earth to **regulate the Bowels, stimulate the Appetite, and beautify the Complexion.** A good set of dishes costs $20 or $30. Don't waste money. We will make you a **present** of a **complete 56** piece set, beautifully decorated in Pale Blue, Brown, Green or Pink, exactly as we claim or forfeit our money. Take advantage of this if you want to get **a handsome set of dishes absolutely free.**

This is all we ask you to do

Send us your P. O. and Express Office address and agree to sell only **12 Boxes** of Carbolettes at **25 cts.** a box. We will send them at once. They sell like hot cakes. When sold send us **only $1.50** and keep the other **$1.50** of our money **until you receive the dishes.** No two ways about us. We talk straight from the shoulder and we are bound to introduce our Remedy, no matter what it costs. When we say we will give away these magnificent **sets of dishes we will do it.** This is a great opportunity.

Remember our Dishes are beautifully decorated and are packed and boxed Free of Charge.

ADDRESS **Manufacturers' Supply Dept.** 547 M **61 Park Place, N. Y. City**

Hawkeye Incubator Facts.

Among the many incubators on the market today, none is more popular or more successful than the Hawkeye, which is manufactured by the Hawkeye Incubator Company at Newton, Ia. This machine counts its success from the beginning, and the reason is apparent. None but the best material is used in the construction; skilled workmen are employed in every department; one part of the machine is made as carefully as another; and no expense is spared to keep it at the high standard it has attained through its excellence and superiority. The hatching record of the Hawkeye stands out unparalleled by any other machine.

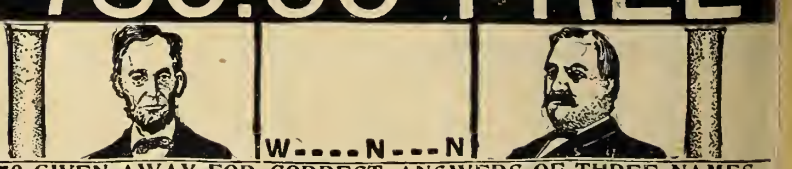
The business methods pursued by this company are the best, and it aims to be always fair and just toward its patrons. This is evident in their trial plan, in which they offer to send an incubator and allow the customer to test it thoroughly 30 days. If not satisfied at the end of that time, their money is refunded. However, it is a rare thing for a customer to ask this, simply because all their goods are first class. This is an unequaled record.

The Hawkeye Incubator Company is doing a larger business this season than ever before, which attest the popularlty of their machines. Any reader of Western Fruit-Grower who has not received a copy of their handsome catalogue should write for it—it is free.

We take pleasure in recommending this incubator to our readers, and we are sure if you will give the Hawkeye a trial, the results will prove all claims made for it.

Here are the best things advertised in this issue: Spray pumps, on page 2; Disparene, on page 7; dust sprayers, on page 28; seeds, on pages 11 and 15. Missouri Valley Seed Co., headquarters, St. Joseph, Mo.

$750.00 FREE



$750 GIVEN AWAY FOR CORRECT ANSWERS OF THREE NAMES.

The above two pictures of Ex-Presidents represent the names of two large cities in the United States, one located in Nebraska and one in Ohio. The center space is left blank for a third Ex-President, whose name represents a prominent city, spelled in ten letters, and the only city in the U. S. the people are not allowed to vote If you can **GIVE THE NAMES OF THE THREE CITIES,** mail them to us with your name and address plainly written. If they are correct, **YOU WILL RECEIVE** a letter from us, which may entitle you to the whole or part of the **$750.00,** for the correct solution of above names and a few minutes of your time You are not called upon for one cent of your money to be a participant in the **AWARD OF $750.00. WE DO NOT WANT YOUR MONEY.** Should more than one have correct answer, $750 00 will be paid just the same pro rata. We advertise ourselves in this liberal manner to interest you, and we will surely give away $750 00 besides valuable presents, as there are no blanks. Send your name and answer at once. **A. LESLIE, Desk 550 Pearl St., N. Y. City.**

RUPTURE

A Permanent, Lasting and quick Cure Guaranteed. No cutting, no pain, no detention from business. No anlsthetics given. **You pay Nothing Until Cured.** Call or send for our free **Book,** which tells all about Rupture, with hundreds of testimonials. Consultation and examination free.

DR. ERNEST HENDERSON, 103 West 9th Street, Kansas City, Mo.

PILES

NO MONEY TILL CURED. 25 YEARS ESTABLISHED. We send FREE and postpaid a 200 page treatise on Piles, Fistula and Diseases of the Rectum; also 100 page illus. treatise on Diseases of Women. Of the thousands cured by our mild method, none paid a cent till cured—we furnish their names on application. **DRS. THORNTON & MINOR,** 1023 Oak St., Kansas City, Mo.

FENCE! *STRONGEST MADE.* Bull Strong, Chicken-Tight. Sold to the Farmer at Wholesale Prices. Fully Warranted. Catalog Free. COILED SPRING FENCE CO. Box 125 Winchester, Indiana, U. S. A.

RUPTURE CURED IN 10 DAYS By a Scientific and Never-failing Process. No knife, no pain, absolutely no danger. IN TEN DAYS THE PATIENT IS SOUND AND WELL—cured to stay cured. Write for proofs, booklet, etc., FREE. DR. O. H. RIGGS, 205 L, Altman Bldg., Kansas City, Mo.

FIGHT FIRE WITH FIRE

FIGHT

NATURE'S DECAY WITH NATURE'S REMEDY! Follow the example of the plainsmen and use the **weapons which nature has placed in your hands!** You cannot sweep back the tide with a **BROOM,** you wouldn't try, nor should you try to resist, to **sweep back disease** with a bottle of alcohol and sarsaparilla or a package of senna and straw. If your house were burning, you would not fight the flames with a bottle of Eau de Cologne, and when **YOUR INTERNAL HOUSE,** the dwelling place of your life, **your vitality,** is burning, and being destroyed by the ravages of wasting, insidious diseases, it is just as foolhardy to attempt to check the flames, to stop the destruction, with a sweet-tasting, sweet-smelling pill, tablet or compound made to sell and to sell only.

Nature has provided a cure for your ills, has combined the subtle elements of **IRON, SULPHUR AND MAGNESIUM,** elements which are to the fires of disease in the system as is the fireman's hose to the burning building, and combined them in a manner of her own which man's inventive and creative genius has been unable to duplicate or counterfeit. She has placed it in the ground where it was found, for what purpose, if not to **relieve and cure the ills of mankind.**

You can test it, **can judge for yourself,** and it will not cost you a cent to do it. It is different from all others and can be offered in a different way, a way that "sellers of medicines" dare not duplicate. If you are sick and tired of quacks, sick of dosing yourself day after day, with each sunrise finding **no change in your condition,** if you are sick of being imposed upon, try this **natural curing and healing ore. IT WILL NOT FAIL YOU!** Read our special offer.

You Are to Be the Judge!

The Test of Merit

IS NOT IN WORDS, BUT IN

RESULTS

GAINED IN ACTUAL USE; IN THE CURES MADE; THE MIRACLES WROUGHT.

PROVED

By the Testimony of the Rev. John Fuchs, the well-Known Indiana Minister. Read what he says:

I was afflicted with Rheumatism for many years, the attacks being especially strong during last winter. I could not sleep nights on account of the pain, which centered in my back and left leg. My nervous system was also so affected that when I shaved myself I had to support the right hand with the left one. The doctors who treated me said they could not help me, as I was 87 years old and my system, according to them, was entirely worn out. I doctored with so many kinds of medicine that I had a small drug store at home, but nothing helped me. I had new hopes, as summer approached, that the warm weather would bring me relief, but this hope was not gratified, as I grew no better. Then I gave up all thought of a cure, thinking that the doctors were right and that nothing could help me. One day I read the VITAE-ORE advertisement in a leading church paper, and sent for a package as advertised. After five days I remitted for treatment, as it had, in that short time done me so much good that I was entirely willing to pay the money. After using two packages I was entirely cured of the Rheumatism and my nervous system is now so wonderfully improved and strengthened that I can work with as much force and vigor as I could twenty or twenty-five years ago. VITAE-ORE has caused an entire change in my system, seeming to make a new man of me. I wanted to wait with my report until I was fully convinced that the benefit is entire and permanent, and I write at this time without the least inducement from the Theo. Noel Company, merely through appreciation toward God and the wonderful VITAE-ORE medicine, as well as the advertisement in our church paper. I hope that VITAE-ORE will continue to be a blessing to all mankind. REV. JOHN FUCHS, Terre Haute, Ind.

Thousands say as he does—Hundreds of the readers of this paper who have tested it say "It is all true history.' Don't you want to be one of them?

WE WILL SEND TO ALL

Subscribers or readers of The Western Fruit-Grower a full sized $1.00 package of VITAE-ORE by mail, **postpaid,** sufficient for one month's treatment, to be paid for within one month's time after receipt, if the receiver can truthfully say that its use has done him or her more good than all the drugs and doses of quacks or good doctors or patent medicines he or she has ever used. Read this over again carefully, and understand that we ask our pay only when it has done you good, and not before. If not, no money is wanted! **We take all the risk; you have nothing to lose.** If it does not benefit you, you pay us nothing. We give you thirty days' time to try the medicine, thirty days to see results before you need pay us one cent, and you do not pay the one cent unless you do see the results. **You are to be the judge!** We know Vitae-Ore and are willing to take the risk.

Vitae-Ore is a natural, hard, adamantine, rock-like substance—mineral—ORE—mined from the ground like gold and silver in the neighborhood of a once powerful but now extinct mineral spring. It requires twenty years for oxidization by exposure to the air, when it slacks down like lime and is then of medicinal value. It contains free iron, free sulphur, and free magnesium, three properties which are most essential for the retention of health in the human system, and one package—one ounce—of the ORE, when mixed with a quart of water, will equal in medicinal strength and curative value 800 gallons of the most powerful mineral water drank fresh from the springs. It is a geological discovery, in which there is nothing added or taken from. It is the marvel of the century for curing such diseases as

Rheumatism, Bright's Disease, Blood Poisoning, Heart Trouble, Dropsy, Catarrh and Throat Affections, Liver, Kidney and Bladder Ailments, Stomach and Female Disorders, LaGrippe, Malarial Fever, Nervous Prostration and General Debility.

as thousands testify, and as no one, answering this, writing for a package will deny after using. VITAE-ORE has cured more chronic, obstinate, pronounced incurable cases, than any other known medicine and will reach such cases with a more rapid and powerful curative action than any medicine, combination of medicines, or doctor's prescription which it is possible to procure.

Vitae-Ore will do the same for you, as it has done for hundreds of readers of The Western Fruit-Grower, if you will give it a trial. Send for a $1.00 package at our risk. You have nothing to lose but the stamp to answer this announcement. We want no one's money whom Vitae-Ore cannot benefit. You are to be the judge! Can anything be more fair? What sensible person, no matter how prejudiced he or she may be, who desires a cure and is willing to pay for it, would hesitate to try Vitae-Ore on this liberal offer? One package is usually sufficient to cure ordinary cases; two or three for chronic, obstinate cases. We mean just what we say in this announcement, and will do just as we agree. Write today for a package at our risk and expense, giving age and ailments, and mention The Western Fruit-Grower, so we may know that you are entitled this liberal offer.

Impure Blood

Almost every one in this latitude is a sufferer from diseases caused by IMPURE BLOOD, the corner stone of more ills than all other causes combined, and only here and there one recognizes that in his blood lurks the seeds of disease, ready to take root and manifest themselves at the first opportunity in some of the innumerable hideous ways so dreaded by everybody. Every neighborhood has its afflicted, many seemingly incurable, with complaints that have gradually and almost imperceptibly made their appearance, growing a little worse with each change of the season until CHRONIC AILMENTS are well seated and developed in the system, such as Stomach, Liver and Bowel Troubles. Each takes one or more forms peculiar to such diseases, but all are due to IMPURE BLOOD, to the absence from the blood of some necessary vital force, or the presence of some foreign element, which impairs its powers to faithfully perform its duties to the system, causing a long list of complaints which yearly drag thousands to the grave.

To purify the blood, eradicate disease, build up the system, VITAE-ORE IS WITHOUT A PEER among remedial agents. No other remedy extant can equal it as a powerful constitutional tonic, a blood vitalizer, renovator and regenerator. It contains, as its constitutional parts, elements needed by the blood, which are absorbed by the thousands of minute blood corpuscles, and taking their proper place in the circulation, expel all foreign secretions which have been undermining the health. It supplies the wants of nature, is her able assistant and one that can be depended upon to do its work under all conditions.

It is the ideal tonic for Weak Anaemic Men and Women. Under treatment with it, the watery, impoverished blood becomes strong and virile, and as it courses through the veins imparts the color of health to the face, a sparkle to the eye, and strength and vigor to the system.

Your Story Will Be Like Hers

A CURE AND ALWAYS A CURE.

Sarah A. Chappell Wrote for It, Tried It, Judged It, and Is Not Sorry—Why Not You?

Baxter, Mo.

I take pleasure in telling what Vitae-Ore has accomplished for me. I had suffered seven years with a severe Stomach Disorder and Indigestion, the trouble dating from the year 1897, and have doctored and used patent medicines all the time. I began a treatment with Vitae-Ore some time ago, and have at this time taken in all four packages, and feel almost as well as I ever did in all my life. I do hope that all suffering women can be induced to try this wonderful medicine as I did, and be cured as I have. If it was not for Vitae-Ore I surely would not have lived much longer, as I had about given up all hopes, but now I feel that life is worth living—I am so well and cheerful. I recommend it among my friends, finding it a great pleasure to do so, and feeling that it is my duty as a recompense in some measure for the great good it has done for me. I know that Vitae-Ore is what it is claimed to be, and only wish that all afflicted will give it a trial.

SARAH A. CHAPPELL.

NOT A PENNY UNLESS BENEFITED

This offer will challenge the attention and consideration, and afterward the gratitude of every living person who desires better health or who suffers pains, ills and diseases which have defied the medical world and grown worse with age.. We care not for your skepticism, but ask only your investigation, and at our expense, regardless of what ills you have, by sending to us for a package.. ADDRESS

Theo. Noel Co., W.F.G. Dept. Vitae-Ore Bldg., Chicago, Ill.

STARK BRO'S NURSERIES & ORCHARDS Co

Capital Stock $1,000,000.00—All Paid Up

Oldest Nurseries in the West

Established 1825

Largest Nurseries in the World

4,675 Acres

GENERAL OFFICES, Nurseries, Packing and Storage Houses, LOUISIANA, MO.

BRANCHES: Starkdale, Mo., Fayetteville, Ark., Huntsville, Ala., Atlantic, Iowa., Dansville, N. Y., Portland, N. Y.

For Spring 1904, we have the **largest, best assorted, handsomest** stock ever offered to the planters of the U. S.

APPLE: The largest and FINEST stock of 1-yr. and 2-yr. trees ever grown. We are headquarters for all best market sorts and **SOLE OWNERS** of **BLACK BEN DAVIS** (Trade-Mark No. 38,556) and **CHAMPION** (Trade-Mark No. 32,184), the **TWO GREATEST MONEY-MAKERS** known to-day. **DELICIOUS** (Trade-Mark) **SENATOR** (Trade-Mark) **Liveland Raspberry**, Payne Keeper, and all leading commercial sorts.

PEAR, Standard: Leading sorts, in- cluding Fame, Alamo, Ozark, Kieffer, Lincoln (true Lincoln of Ill.), Garber, Bartlett and many others. **Dwarf:** Duchess, Anjou, Howell, Fame, Bartlett, etc.—**extra fine trees.**

CHERRY: One of the surest crops that can be grown, and one that always brings good returns. First-class trees of Dyehouse, Early Richmond, Eng. Morello, Montmorency (true) Suda, Baldwin, Wragg, Ger. Ostheimer.

GRAPE: Portland, N. Y., grown vines, 1- and 2-yr., all leading sorts, including **Hicks,** which far excels Concord—a week earlier, better quality, better grower, better bearer; and **Stark-Star** (Trade Mark), "an important addition to the Grape list, filling a place occupied by no other." **We will meet all competition in quantity, quality and price.**

SMALL FRUITS: Leading sorts for all purposes: London Market, Fay, Victoria, Red Cross, Pomona Currants; Houghton, Downing, Josselyn Gooseberries; Cumberland, Cardinal, Haymaker, King, Kansas, Cuthbert, Loudon and other Raspberries; Illinois, E'y King, E'y Harvest, Kittatinny, Mersereau, Snyder and other Blackberries

BUDDED LILACS: Superb sorts, both Single and Double; colors are pure white, light and dark blue, light and dark purple, purplish red, rosy red, satiny rose, etc.

ROOT GRAFTS of Apple of all leading sorts, and Kieffer and Garber Pear. Whole-root grafts in stock; piece-root **made to order.** Special prices on large lots.

SEEDLINGS, STOCKS and CUTTINGS: We are still able to offer Apple Seedlings in limited quantities—several grades of both American grown and French; also Mahaleb cherry and French pear seedlings, Angers quince stocks, Mariana and Myrobolan plum, etc.

SHADE AND ORNAMENTAL TREES, Shrubs, Roses, etc. **Bechtel's Dbl.-flowered Wild Crab Apple** is unsurpassed for **hedges;** of **iron clad** hardiness.

STARK TREES—Orchard of Japan Plums, Tarrant Co., Tex. "Already my 5-yr. old trees have more than paid all expenses of growing the orchard, **including** cost of land. You have helped me on the road to success."—E. V. DUNN

PLUM: An orchard of improved vari- eties properly planted, insures a good income year after year. Recognizing this fact, we have prepared for the demand and can furnish all the leading kinds by **the car load**—the finest stock and the finest sorts known, such as Gold, Shiro, Gonzales, America, Sultan, Climax, Abundance, Red June, Burbank, Wild Goose Improved, Mathews, Lombard, Damson, etc.

PEACH: More than 1,500,000 Elberta alone, and all other leading commercial sorts in proportion—Greensboro, Triumph, Mamie Ross, Carman, Alton, Champion, Crawford (Early and Late), Elberta Cling, Bequett, Mathews, Heath Cling, Krummel, etc., etc. Our peach are grown from the very best natural seed, are healthy, thrifty, **true to name.** Plant peach for **quick returns.**

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Volume Fifteen *April 1904* *Number Four*

THE WESTERN FRUIT-GROWER

ST. JOSEPH MISSOURI

AN ILLUSTRATED MONTHLY MAGAZINE FOR PROGRESSIVE AMERICAN FARMERS

PUBLISHED MONTHLY
FIFTY CENTS A YEAR

ADVERTISING RATE:
$2.10 PER INCH EACH INSERTION

You Are to Be the Judge!

A BARREL

of VITAE-ORE is NOT NECESSARY to convince you that it is the best remedy in, on or out the earth for ailing people, to PROVE TO YOU positively that it will CURE YOUR ILLS, as it has the ills of so many others.

ONE OUNCE OF THE ORE (one package) mixed with a quart of water, ONE MONTH'S TREATMENT, is all that you need for the TEST, all the EVIDENCE we want to submit, and we want to send it to you at OUR RISK. YOU ARE TO BE THE JUDGE! One month's treatment with the NATURAL REMEDY will do for you what six months' use of other advertised treatments can not. If it does not, YOU TO DECIDE, we want NOTHING from you!

Sent on 30 Days Trial

READ OUR SPECIAL OFFER!

WE WILL SEND to every subscriber or reader who writes us, mentioning THE WESTERN FRUIT-GROWER, a full-sized One Dollar package of VITAE-ORE, by mail, postpaid, sufficient for one month's treatment to be paid for within one month's time after receipt, if the receiver can truthfully say that its use has done him or her more good than all the drugs or dopes of quacks or good doctors or patent medicines he or she has ever used. Read this over again carefully, and understand we ask our pay only when it has done you good and not before. We take all the risk; you have nothing to lose. If it does not benefit you, you pay us nothing. Vitae-Ore is a natural, hard, adamantine, rock-like substance—mineral — Ore — mined from the ground like gold and silver, and requires about twenty years for oxidization. It contains free iron, free sulphur, and magnesium, and one package will equal in medicinal strength and curative value 800 gallons of the most powerful, efficacious mineral water, drunk fresh at the springs. It is a geological discovery, to which there is nothing added or taken from. It is the marvel of the century for curing such diseases as **Rheumatism, Bright's Disease, Blood Poisoning, Heart Trouble, Dropsy, Catarrh and Throat Affections, Liver, Kidney and Bladder Ailments, Stomach and Female Disorders, La Grippe, Malarial Fever, Nervous Prostration and General Debility,** as thousands testify, and as no one, answering this, writing for a package, will deny after using. Vitae-Ore has cured more chronic, obstinate, pronounced incurable cases than any other known medicine, and will reach such cases with a more rapid and powerful curative action than any medicine, combination of medicines, or doctor's prescription which it is possible to secure.

VITAE-ORE will do the same for you as it has for hundreds of readers of the Western Fruit-Grower if you will give it a trial. **Send for a $1.00 package at our risk.** You have nothing to lose but the stamp to answer this announcement. If the medicine does not benefit you, **write us so and there is no harm done.. We want no one's money when Vitae-Ore cannot benefit.** Can anything be more fair? What sensible person, no matter how prejudiced he or she may be, who desires a cure and is willing to pay for it, would hesitate to try **Vitae-Ore** on this liberal offer? One package is usually sufficient to cure ordinary cases; two or three for chronic, obstinate cases. **We mean just what we say** in this announcement, and will do just what we agree. Write today for a package at our risk and expense, giving your age and ailments, and mention the Western Fruit-Grower, so that we may know that you are entitled to this liberal offer.

You Are to Be the Judge

DON'T EXPERIMENT!

Some experiments are necessary for the advancement of civilization; and although frequently lives are lost and much damage done, the ultimate results and benefits are the cause of much good to humanity. Others result in loss of life from no apparent cause other than the obstinacy of the experimenter, who will not heed the advice of friends, and refuses to see that his experiment is **impossible or impracticable for the results aimed at or intended.**

A Certain and Never Failing Cure for

Rheumatism	Malarial Fevers
Lumbago	Liver, Kidney and Bladder Troubles
Bright's Disease	Catarrh of Any parts.
Diabetes	Female Complaints
La Grippe	Stomach and Bowel Disorders
Blood Poisoning	General Debility
Dropsy	
Sores and Ulcers	
Nervous Prostration and Anaemia	

As all experiments are dangerous, so it is a dangerous thing to experiment with worthless patent medicines and nostrums of the kind that spring up in the night, and "none know from whence they came" or what their origin. It is seeking after an impossible result to look for health in a bottle of alcohol and sarsaparilla, or a package of senna and straw; and such experiments are often disastrous to the experimenter.

Vitae-Ore, Nature's Remedy, is not an experiment, and the sick and suffering person who seeks its aid is not experimenting. It has stood the test of the American public, a critical judge, for a generation of time, and is growing in popularity and selling more rapidly from year to year, and has fully substantiated our claim to being the best thing in, on or out of the earth for afflicted people. Beware of experiments in medicine, and when you need a remedy let the experience of others be your guide. If you have been using other treatments without the results that were promised and that you anticipated, THROW THEM AWAY and begin with this natural healing and curing ORE. It will NOT FAIL YOU.

YOUR DOCTOR

may tell you that your case is incurable, that medical science is unable to help you, that all you can expect is temporary or slight relief. Well, let him think so. He is certainly entitled to his opinion. You need not think so unless you wish to. Many people whose testimony appears in the books and pamphlets of the Theo. Noel Company were told that their cases were hopeless, helpless, impossible, incurable, past all recovery, yet—read their testimony. Many were told that they had but a few short years—some but months—to live, yet—read their testimony. There are more things in Heaven and earth than are dreamed of in the Doctor's philosophy, and VITAE-ORE is one of them.

Middle-Aged and Elderly People Should Use It

As old age approaches the necessity for such a tonic as Vitae-Ore becomes each year more and more manifest. As is generally known, all through life there is a slow, steady accumulation of calcareous deposits in the system, marking the transition from the soft, gelatinous condition of infancy to the hard, osseous condition of old age. These calcareous deposits naturally interfere with the functions of the vital organs, and when they become excessive and resist expulsion, result in the dryness and stiffness of old age. In early life these deposits are thrown off, but age has not the power to do so unless assisted by some outside stimulant. Vitae-Ore, apart from its powerful disease curing, health-restoring action, is just the IDEAL STIMULANT for middle-aged, elderly people, in that it enters the blood, dissolves the hard calcareous matter, and almost entirely eradicates the ossific deposits so much dreaded by old people. It enriches the blood with the necessary hematinic properties, drives all foreign matter from the circulation and prolongs vigor and activity in both men and women to a ripe old age.

This offer will challenge the attention and consideration and afterward the gratitude of every living person who desires better health or who suffers pains, ills and diseases which have defied the medical world and grown worse with age. We care not for your skepticism, but ask only your investigation, and at our expense, regardless of what ills you have, by sending to us for a package. ADDRESS

THEO. NOEL COMPANY, W. F. G. Department, Vitae-Ore Building, CHICAGO, ILL.

Just Think of It

Was Using Four Different Advertised Specific Remedies.

NO HELP UNTIL VITAE-ORE WAS CALLED IN.

I received a trial package of Vitae-Ore some three months ago, having answered and accepted the thirty-day trial offer which appeared in my paper, and it is from this day that I date my return to health. I have used it continuously since that time with the following result:

I now feel stronger than I have at any time for five years. I can eat a variety of foods without inconvenience or suffering. I can walk five times as far and faster without losing my breath than I could before I commenced its use. The head noises have ceased; the back ache is gone; the nervous constriction of the bowels is entirely cured; I am not troubled with Constipation any more, although formerly I had to take a dose of salts every morning; in fact, it is simply marvelous what Vitae-Ore has done for me. I was taking a root medicine for my kidneys, nervine for my nerves, nerve and liver pills for my liver, and heart cure for my heart (just think of it) and still I could not lie on my left side without a pain in my heart. I used to bloat and the pain in my back made me miserable, but thank God for inducing me to read through the Vitae-Ore advertisement. I have now discarded every other medicine but V.-O. and am letting God's natural mineral cure me and am nearer a perfectly healthy woman than I have been for 6 years past. LOVINA PETERSON.

Slatington, Cal.

How can you refuse to give it a trial after reading such ringing testimony? If you need the treatment it is a sin aud a shame if you do not!

Cured of Catarrh of Stomach and Bowels

Suffered for Many Years—The Trial Treatment Pointed the Way and a Complete Cure Folowed.

Read What This Worthy Blacksmith Says of Vitae-Ore.

I was a great sufferer from Catarrh of the Bowels for a number of years. After using many different kinds of medicine, in fact, everything that was recommended to me, I almost lost all hope of ever getting any better until the Theo. Noel Company of Chicago sent me a trial package of Vitae-Ore. After only a few days' use my hopes of a complete cure were again revived, the change being so prompt and immediate. I purchased and used about five packages of Vitae-Ore and through this medicine am now again able to wield the sledge hammer and shoe horses and do my blacksmith work as in years when I was younger. My stomache and bowels are better than they have been for thirty years past and it is all due to Vitae-Ore. I can conscientiously and truly recommend Vitae-Ore to all persons suffering from Catarrh of the Stomach and Bowels, and would consider myself, indeed, selfish did I not write and tell what it has done for me, so that others may be cured as I have been. HIRAM C. POWELL, Center, Ind.

The Western Fruit-Grower
An Illustrated Monthly Magazine For Progressive American Farmers
Volume Fifteen ST. JOSEPH, MISSOURI, APRIL, 1904 Number Four

The Curculio and the Apple

Readers of the Fruit-Grower will remember the numerous inquiries which were sent in from Illinois apple-growers during 1902 and also last year in regard to an insect which was injuring apples in that state. The damage was done quite late in the season, and the insects were so industrious that the bulk of the crop in many sections was destroyed or rendered unsalable. It was stated at that time that the apples were punctured until, as many expressed it, "they looked like the top of a pepper-box." The Illinois Experiment Station investigated the trouble, and decided that it was the work of the plum curculio, which attacked the apple, not for the purpose of depositing eggs, as in the case when the plum is attacked, but in order that the insect might secure food.

The Fruit-Grower presents herewith a paper on this subject, which was read before the meeting of the Illinois State Horticultural Society by Prof. C. S. Crandall, of the Illinois Experiment Station. The paper is presented in full, for it is not only of much interest to apple growers in Illinois and Missouri, where this damage has been most marked, but it is perhaps the best paper on the subject which has been presented before any society. The paper follows:

Throughout the length and breadth of this state, whenever orchard fruits are grown, it is an easy matter to find fruits that are more or less defaced by deformities, by curiously made surface cuts, or by small cylindrical excavations. These markings may be found on plum, peaches, apples, pears and quinces. The same marks are also found on fruits of the wild plum, wild crab-apple and of the red fruited hawthorn so common in native woodland.

The marks referred to are not equally abundant every year and in some sections they are never very numerous; often not sufficiently common to attract attention. Neither do these markings appear equally on all fruits. If all the fruits mentioned are growing and fruit near together, the plum will probably show the greatest injury, the peach next and then the apple, followed by the pear and quince. If only one kind of fruit is bearing, the injury will be concentrated upon this fruit.

Complaints of injury from the marks spoken of have come from several widely separated counties. This past season it was the apple that suffered; the year before it was both the apple and the peach.

These injuries to fruit are not a new thing, but have been complained of for many years; as far back as 1860 serious injury to plum and peach in southern counties was reported, and in 1867 and 1868 not only the plums, peaches and apples of southern counties, but the apple of northern counties were badly injured.

The insects responsible for these injuries are three species of curculio;

The plum curculio (Conotrachelus nenuphar).

The apple curculio (Anthonomus quadrigibbus).

The plum gouger (Anthonomus prunicida).

While the plum gouger has been reported as attacking the apple, it in the main confines its work to the plum, and as in our work with apples during the past season, not a single specimen of the gouger was found, nothing further need be said of that species.

So far as my observation goes, all curculio injury to apples is done by the two species—the plum curculio and the apple curculio; and as between these two by far the greater portion of the injury is done by the plum curculio.

In October, 1902, Messrs. Albert Blair and John R. Williams, proprietors of large bearing orchards at Barry in Pike County, appealed to the Station authorities for assistanee in determining the cause, and in finding a remedy for very destructive work done in their orchards. The crop of 1902 was practically ruined, and previous crops had been in some degrce injured. Specimens of injured apples were shown which fully supported the reports of injury done. It was perfectly plain that the injury was inflicted by insects; therefore the problem had entomological as well as horticultural phases. After full discussion of the matter it was decided that the horticultural department take the matter up from a horticultural standpoint.

Work was commenced in April and continued through the season along two principal lines: First, spraying; second, inquiry into the life histories and habits of the two insects with a view to the discovery of vulnerable points which might suggest new lines of attack.

Spraying—Two blocks of 60 trees each were selected. Each block was divided into six plats of ten trees each. One plat in each block was reserved as a check; the others were sprayed according to a previously arranged schedule designed to test the effectiveness of a varying number of applications of Paris green, and two other arsenical compounds, namely, arsenite of lime and arsenate of lead.

Work of similar character, for a like purpose, had been tried by various experimenters with both good and indifferent results, and as a possible means of controlling the insects it was thought worthy of careful trial.

The treatment outl ned for the different plats and applied as scheduled was as follows: All plats received three early applications of standard Bordeaux mixture and paris green made on the 4-4-¼-50 formula; for the control of apple scab and codling moth. The dates of spraying were: First, when buds were bursting, April 15 and 16; Second, just after the petals had fallen, May 4 and 5; Third, one week later, May 12.

Subsequent spraying especially for curculio was as follows:

Plat 1—Sprayed once each week from May 15th to August 15th with one-half pound Paris green to 50 gallons of water, with lime sufficient to prevent injury to foliage. This made 13 applications, or 16 including the three early applications.

Plat 2—Sprayed five times, using the same formula as was used for plat one. The dates were, May 15 and 22, June 15, July 6 and 28.

Plat 3—Reserved as check. Received no spray after May 12.

Plat 4—Sprayed four times with the same preparation of Paris green, lime and water. The dates of application were, May 15 and 22, June 15, July 6.

Plat 5—Received four applications of arsenite of lime made after the following formula: White arsenic, 2 ounces; sal soda, ½ pound; lime, 4 pounds; water, 50 gallons. The spraying was done May 23, June 6th and 20th, and July 6th.

Plat 6—Was treated with arsenate of lead on May 23d, June 6th and 20th, and July 6th; four applications, using the following formula: Lead acetate, 12½ ounces; soda arsenate, 5 ounces; water, 50 gallons.

On June 17th all fallen fruit was picked up, examined and record made of the numbers punctured and free from punctues. This was repeated at intervals until the final picking on October 1st.

Bloom in the orchards was fairly abundant, but the unusual weather conditions prevailing during the blooming period, together with the severe frost of May 1st, destroyed so many blossoms that the amount of fruit was small; too small for satisfactory results in spraying. The limited amount of fruit had an unquestionable effect upon the results obtained. Then there is another factor which tended to modify results; a factor, the possible influence of which was appreciated and discussed before work began, but one which could in no way be eliminated. It is this. The curculio is a winged insect; it flies.

Now, suppose our application of poison kills off all insects on the trees at or near the time of spraying; there is nothing to prevent the incoming of other insects from surrounding trees. These new-comers will add a certain number of punctures, eat poison and die; to be sueceeded by another consignment from trees outside the plats; and so on to the end of the season. This is a matter that cannot be overcome where small blocks in large orchards are treated, and it must be taken into consideration when drawing conclusions from recorded results. Spraying for a more or less active winged insect is a very different matter from treating, in like manner, a fixed or slow-moving larva.

The results as obtained are here tabulated so that you can see for yourselves just what was accomplished by the work in spraying under the conditions that I have given. The tabulation also serves as an indication of the abundance of the insects, and the extent of the work done b them.

Tabulation of apples taken from the plats in the orchard of J. R. Williams at Barry, Pike County, Illinois. Season of 1903. By plats. Sprayed according to schedule for plum and apple curculios.

Plat Number	Total Picked		Total Windfalls		Total			Per Cent	
	Punctured	Not Punctured	Punctured	Not Punctured	Punctured	Not Punctured	Grand Total	Punctured	Not Punctured
1.....	880	36	3021	182	3901	218	4119	94.71	5.29
2.....	415	22	1767	81	2182	103	2285	95.49	4.51
3.....	411	10	2491	27	2902	37	2939	98.74	1.26
4.....	742	29	3630	69.	4372	98	4470	97.81	2.19
5.....	657	43	6094	93	6751	136	6887	98.03	1.97
6.....	413	8	3696	88	4109	96	4205	97.72	2.28
Total.	3518	148	20699	540	24217	688	24905	97.24	2.76

3666 apple or 14.72 per cent total apples were picked from the trees.
21239 apples or 85.28 per cent of total apples were windfalls.

Tabulation of the apples taken from the plats in the orchard of Albert Blair at Barry, Pike County, Illinois. Season of 1903. By plats. Sprayed aecording to schedule for Plum Curculio and Apple Curculio.

Plat Number	Total Picked		Total Windfalls		Total			Per Cent	
	Punctured	Not Punctured	Punctured	Not Punctured	Punctured	Not Punctured	Grand Total	Punctured	Not Punctured
1.....	118	24	399	75	517	99	616	83.93	16.07
2.....	100	19	330	30	430	49	479	89.77	10.23
3.....	67	11	234	22	301	33	334	90.12	9.88
4.....	151	15	459	48	610	63	673	90.64	9.36
5.....	106	12	688	50	794	62	856	92.76	7.24
6.....	281	10	1746	43	2027	53	2080	97.45	2.55
Total..	823	91	3856	268	4679	359	5938	92.87	7.13

914 apples or 18.94 per cent of total number were pick5ed from the trees.
4124 apples or 81.06 per cent of total number were windfalls.

Studies of Habits and Life Histories.

It seemed important that accurate information be obtained regarding the habits of these insects; when and how they do the work that injures the fruit; how are they occupied and where do they stay when not feeding; when are they active, when sluggish; when does work begin and when does it cease. In short, it was desirable that we know every detail of the daily life of both Insects. As to the life historics, information was sought regarding all the processes of development from the deposition of the egg to the emergence and hibernation of the mature beetle. Such information should reveal to us the weak points in the economy of the insects and enable us to devise means of attacking them with best chances of success. Much time and labor was therefore given to investigation in this direction. Many interesting and some eminently practical problems were carried to successful solution, but the field was by no means exhausted and there yet remain questions that will require the work of a second season to answer.

Both the insects under consideration are industrious feeders. They eat much and often; but the period of feeding is quite different for the two insects. The apple curculio feeds freely in spring and early summer, and even up to its death in July or August; but its progeny, the new generation maturing in mid-summer and later, does not work on fruit until the next spring. What it lives on in the meantime is matter for speculation.

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The new generation of plum curculio overlaps the old and continues throughout the season.

The tabulation already given expresses in some degree the extent of feeding done—because consumption of food attends the making of all punctures, but as a further illustration of industry in the making of punctures, I invite your attention to the following tabulation of punctures, eggs and larvae found on and in apples taken from the ground under trees at various dates as given.

Dates	Number of Apples	Plum Curculio: Crescent Punctures	Plum Curculio: Feeding Punctures	Plum Curculio: Eggs	Plum Curculio: Living	Plum Curculio: Dead	Apple Curculio: Egg Punctures	Apple Curculio: Feeding Punctures	Apple Curculio: Eggs	Apple Curculio: Living	Apple Curculio: Dead
May 13-14..	190	90	254	67	0	0	0	0	0	0	0
June 16-18.	285	649	320	5	32	64	158	378	29	31	15
July 9-15 ..	26	102	415	9	3	7	31	137	9	5	9
Totals ...	501	850	898	81	35	71	189	515	38	36	24

The punctures by both insects for all purposes number 2543 for the 501 fruits, a fraction over 5 for each fruit. Apples gathered May 14 show work of the plum curculio only. The apple curculio was at this time working freely on hawthorne and wild-crab in adjoining woods, but none of their work was seen in the orchard until May 15 and it did not become common until several days later. The apple curculio punctures on fruit examined in July were mostly made early in the month. From the middle of the month there was a rapid decrease in the amount of work done by this species, and although eggs were found as late as July 31st, they were rare. After August 1st no new punctures were found, and none of the insects were found on fruits.

The 501 fruits examined had 850 crescent punctures made by the plum curculio. Each crescent is supposed to represent an egg laid. If this were true we have up to the time of examination 86.35 per cent of failures with possibilities of further failures before the young beetles could mature. But each crescent does not represent an egg; for I have seen them made without the accompaniment of egg-laying. What proportion are thus made I am unable to say. Many egg cavities were found empty or occassionally containing small remains of eggs. Of these no record was made because it was not possible to tell whether the emptiness of the cavities was due to the egg not having been laid, or to its having been eaten out by some predatory or parasitic insect.

Of the 106 plum curculio larvae found .71 or 67 per cent were dead. The causes of this mortality were not fully investigated. Some appeared to have been half eaten by other insects, some after boring a short distance fom the egg cavity, died in the burrow from causes not determined. It seems probable that some, at least, of these had life cut short by growth of the surrounding tissue, but I can not substantiate this as a possible cause at present; it needs further investigation. However, no case has been found of the full development of a plum curculio larva in fruit that remained on the tree. It appears to be necessary to larval development that the fruit fall.

The plum curculio eggs number 81, which with the 35 living larvae would make a possible 116 young beetles out of the 80 crescent punctures made; but should the larvae hatched from these eggs die at the same rate as did the 106 larvae found, there would be left but about 27, which added to the living larvae would give us 62 as the possible young beetles from 850 crescents made, or only about 7.29 per cent.

Apple curculio egg punctures numbered 189; a little more than half of these were accounted for in eggs and larvae found. Of the larvae found only 40 per cent were dead, and in general the percentage of failures is less than with the plum curculio.

These figures are of interest because they indicate that natural processes aid in keeping these insects in check. Enough reach maturity to do great damage, but if from every egg laid a perfect beetle was developed our troubles would be infinitely worse.

In the tabulation last given I have designated crescent and feeding punctures of the plum curculio, and egg and feeding punctures of the apple curculio. There are characteristic and quite constant differences between these punctures, and they are not easily mistaken one for the other. The crecent puncture is normally an accompaniment of the egg puncture of the plum curculio and is characteristic of this species. The process which ends with the completion of this peculiar cut is as follows: The female curculio makes a minute cut through the skin of the fruit wth the jaws at the end of her snout, and excavates a cylindrical cavity about 1-16 of an inch in depth. The direction of this cavity varies somewhat, but usually it is projected back under the insect and is nearly parallel with the surface of the fruit just beneath the skin. The pulp cut away in the process is eaten by the insect. This cavity completed, the insect turn about and deposits an egg. Some writers in describing this process record that after dropping the egg the beetle turns and with the snout forces the egg to the bottom of the cavity. In all cases that I have observed this procedure was omitted; nor was it at all necessary because the cavities made were only of sufficient depth to hold the egg which was forced to the full depth by the ovipositor. The egg laid, the beetle turns about and cuts the crescent, which is so situated as to in part undermine the egg cavity. The process as described appears to be that normally followed, but not infrequently there are digressions or omissions. I have found crescent cuts with eggs laid directly in them and having no proper egg activity. I have also seen eggs laid in normal egg cavities and left with no crescent.

The feeding punctures of this insect early in the season are simply cylindrical excavations, usually about 1-10 of an inch deep and of the same breadth. Later in the season, with the advent of the new generation, the feeding punctures become more conspicuous. The insect first eats out a normal cylindrical cavity; then, deflecting the snout, undermines the skin on which it is standing as far as the length of the snout will permit: moving to one side, another section is eaten out, and so on until the circuit of the cavity is completed. The skin thus undermined soon dries, shrinks back, becomes dark-colored and we have the unsightly blemish commonly seen. Often a number of these punctures are made near together, so that a large area of skin collapses and become black, utterly destroying the apple.

The egg puncture of the apple curculio as seen in longitudinal section is variable, but usually has the shape of an Indian club. Its extreme depth is about 12 hundredths of an inch; the upper one-third narrowly cylindrical, the lower two-thirds broadened to about 8 hundredths of an inch. Its direction is at right angles to the surface and when made in young fruits often punctures the cavity of the ovules. The process of making this cavity is slow and laborious. In seven cases where the whole process was under observation the time varied between one hour and sixteen minutes and two hours and thirty minutes. The pulp excavated is all eaten. When the cavity is completed the insect turns and drops an egg which falls to the bottom of the excavation. Then, a quantity of excrement is deposited on the opening, and with the tip of the abdomen carefully packed in and pressed down, effectually sealing the entrance. This plug when first placed has a greenish appearance, but it soon turns black, becomes hard and remains permanently in the opening, serving as a certain indication of the egg-containing cavity below. The time occupied in laying the egg and sealing the cavity varies from six to ten minutes.

Feeding punctures of the apple curculio are straight and narrowly cylindrical. Occasionally they are slightly enlarged below, but this is not common; they vary in depth from 1-29 of an inch to 12 or 13 hundredths of an inch.

The punctures of the apple curculio do not deface the surface to such an extent as do those of the plum curculio, but they do give rise to serious deformities. Growth is arrested at the point of puncture; surrounding tissue continues to develop and eventually the entrance to the cavity is left in a deep depression.

Development of Larvae and Period of Pupation of the Plum Curculio.

The length of time in the larval state and the time required for pupation are matters of practical importance and considerable effort was given to their determination. Without doubt temperature and general weather conditions cause considerable variation, both in the development of larvae and in the duration of the period of pupation, so that it is hardly possible to give an absolutely definite number of days for either period. We have, however, obtained exact records for a number of individuals, which, in connection with more general observations establish approximately the period when the bulk of the new generation is in the larval state, and also when and for how long a period they

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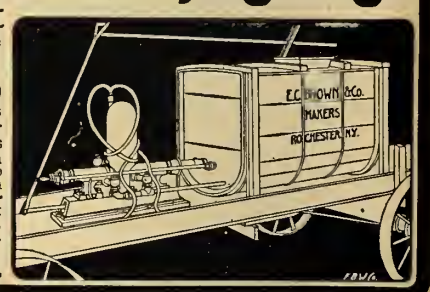

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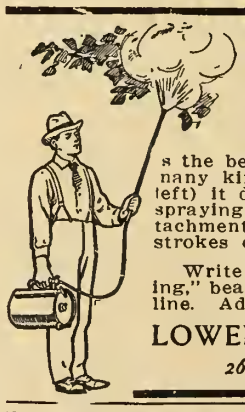

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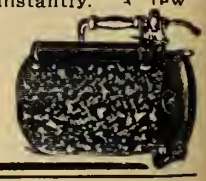

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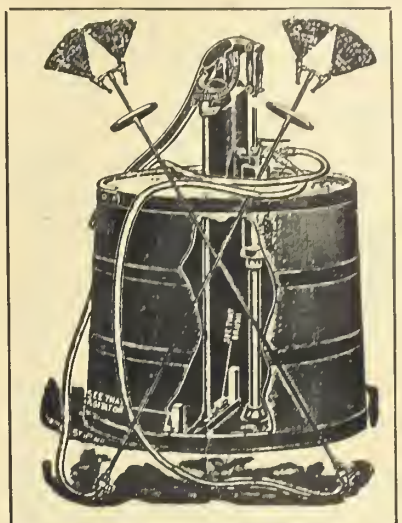

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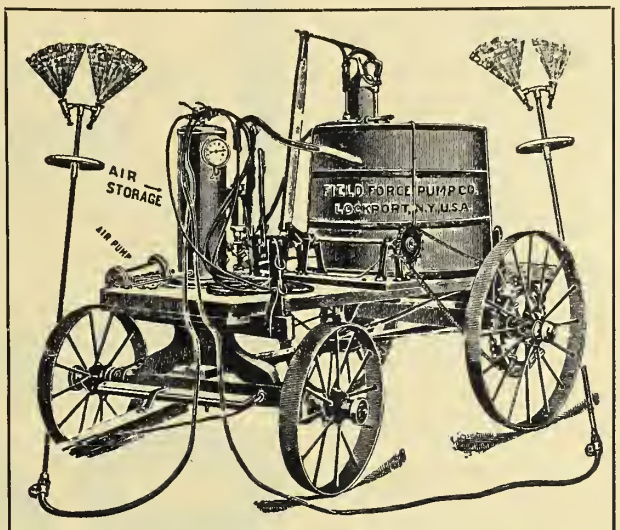

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remain as pupae. On June 22d, 25 plum curculio were placed in a vessel with three apples that had not been punctured. Egg laying began immediately. The first mature larvae emerged from the apples on July 14; others emerged on the 15th, 18th, 20th and 25th. The total number of mature larvae was 24; 9 from one apple, 11 from another, and 4 from another. The period between egg-laying and maturation of larvae here ranges from 22 to 33 days, provided the eggs were all laid on the first day, but as eggs were deposited on three consecutive days, the range may possibly be between 19 and 33 days. The average time is about 26 days. As fast as the larvae emerged they were placed on earth in other vessels; they immediately burrowed beneath the surface and were left undisturbed.

Beetles began to come from the earth on August 6th and continued to appear until August 26th, the period ranging between 23 and 43 days, with an average of about 25 or 26 day.

Of the 26 larvae entering the earth, 18 or 75 per cent. emerged as perfect beetles. The fate of the eight larvae that went into the earth but did not emerge as beetles was ascertained as follows: Three completed the transformations and as mature beetles were killed by parasites in the burrows: two transformed to pupae and were then eaten by parasites; one as larvae was partially devoured by some parasite or predatory insect, and of two no trace could be found; probably they were completely devoured.

The life cycle of the plum curculio, from the egg to the emergence of the perfect beetle may vary, according to our observations, from 46 days as the minimum time, to a possible period of 76 days.

The season of egg-laying extends over at least two months. Eggs were found on May 13th and as late as July 17th. It thus appears that beetles of the new generation may be at work on the fruit before the older generation has ceased egg-laying. But while this is true, it can be safely stated that the great majority of the larvae complete their growth and go into the ground between the 5th of June and 25th of June, and that most of the beetles will emerge during July.

To what depth do the larvae go for pupation? This is a question concerning the answer to which different opinions have been expressed; one author says two or three inches, another says three feet. Between these extremes the depth most commonly given is 5 to 6 inches.

It seemed desirable that accurate data be secured regarding this matter and search was made for pupae. It was slow and laborious work and for a time seemed profitless, but finding a few, stimulated effort and work was continued. As a final result accurate depth records were obtained for 179 individuals. The number and per cent for each depth is here given:

At a depth of ½ inch..	45,	or 25.14 %
At a depth of ¾ inch..	55,	or 30.73 %
At a depth of 1 inch...	40,	or 22.35 %
At a depth of 1¼ inch.	17,	or 10.05 %
At a depth of 1½ inch.	17,	or 9.50 %
At a depth of 1¾ inch.	3,	or 1.67 %
At a depth of 2 inches..	1,	or .56 %
	179,	or 100.00 %

No pupae were found at a greater depth than two inches, and only one at this depth. They were all near the surface, not because of any adverse circumstances, but because of natural instinct.

Actual trial was made of the behavior of larvae in undisturbed soil and in loose cultivated soil with the result that they went no deeper in loose than in compact soil.

From these findings regarding the period for and depth of pupation it appears that the new crop of plum curculios is in the ground, within two inches of the surface, during a portion of the summer, and that for the bulk of the crop the period of pupation extends from about June 10th to about August 1st. The insects during this period are within easy reach and the remedy that at once comes to mind is—Cultivation.

Stir the top of the soil with disc or cultivator and bring the pupae to the surface. Will this do any good? I answer, Yes! These insects when in the pupa state are extremely delicate and they are incapable of moving about. Actual trial has demonstrated that exposure to the air brings immediate distress and kills in a short time; that sunshine is quickly fatal; and that birds, ants and other insects prey upon them.

These determinations of the depth to which the larvae go for pupation and the approximate period of pupation I regard as the most important results of our season's work, because they point to a means of controlling this insect. I am very positive that the maturation of these insects can be in great measure prevented by continued superficial cultivation, during the period of pupation, and at less cost than by any other means.

Destruction of all fallen fruit, which would dispose of the larvae before they went into the ground, would be, of course, desirable; and for small orchards this could be provided for, but in large orchards the problem would be a difficult one.

It has been shown that apple curculio differs from the plum curculio in egg-laying habits; it is also different in development, in that all the transformations take place within the fruit. From the time the mother insect seals the cavity in which she has deposited an egg we have no further evidence of the presence of the insect, until the mature beetle eats its way out.

No exact records were secured regarding the period of development of the apple curculio. The first mature beetle in an apple was found on July 14 and several were found during August. The fact that development takes place within the fruit points to destruction of fallen fruit as an effective measure in diminishing the numbers of this insect; and as the period spent by the insect in the fruit is long, there is considerable latitude as to the time when the fruit may be destroyed. After young apple curculios come out of the fruit their instinct appears to be to hide. We have no evidence that they puncture fruit or take food of any kind during the fall. From the latter part of July to the close of the season no apple curculios were found on apples or on apple trees. Specimens were difficult to find; and such as were secured were taken among leaves and other rubbish on the ground. They hibernate as beetles and after the long winter of inactivity are ready for the spring work which they prosecute with vigor.

In the western part of the state where the curculios have been most destructive during the last two years, the orchards, as a rule, have not been cultivated very much. In some orchards the soil is and has been for years, covered with heavy blue-grass sod. Timothy and other grasses are grown in others. This condition is favorable, not only to curculios, but to other insects. Examination was made of bearing orchards in Pike County aggregating 1,850 acres; all were much infested with curculio, and in all the ground was more or less covered with sod. Orchards that are neither cultivated nor pruned afford the best possible condidtions for the development and multiplication of curculios as well as of other injurious species. Curculios find more and better hiding places and a reater number escape natural enemies.

If in any one year a large number of individuals survive you can rest assured there will be a destructive visitation the next year, because these insects multiply enormously in spite of normal activity on the part of their natural enemies.

With many insects destructive abundance appears to run in cycles. Scarcity of common parasites or the coming of conditions unfavorable to the particular species their numbers diminih and for a brief period there is comparative immunity from attacks. Then follows another period during which they gain ascendency and are destructive.

I think that in curculios we can trace something of this appearance of cycles. The orchardist can by right practice maintain conditions so unfavorable to the species that these attacks will be minimized.

In addition to the summer cultivation suggested as a means of destroying the plum curculio, a cleaning up in late fall for the destruction of both species can be commended. Both apple and plum curculios spend the winter in adult form, and the hiding place most commonly chosen is among leaves and grass, and other vegetable material that may cover the ground.

The destruction as far as is possible of all brush piles in or near the orchard, the removal of accumulations of leaves and rubbish under the trees, and superficial tillage are strongly recommended as helpful measures tending to greatly reduce the injury done by these insects.

Orcharding in Missouri

By Dr. J. C. Whitten

(Continued from Last Month.)

At the present time the question of the best method of treating the soil in the orchard is receiving considerable attention in horticultural journals and in horticultural circles generally. A few years ago the most progressive apple growers, especially in the West, were pretty well agreed that clean cultivation of the apple orchard was the correct thing, except, perhaps, in exceptional cases where steep hillsides or stony land rendered cultivation impracticable.

At the present time a great many growers begin to feel some doubt as to whether or not this idea may not need to be modified. A few in fact seem to be opposed to cultivation of the orchard, believing that the land should be sowed to grass, which should be allowed to rot on the ground, thus forming a mulch to hold the moisture. This method is sometimes called the Hitchings system on account of the success attained in its practice by Mr. Hitchings, of New York. Since Mr. Hitchings has shown what results may be obtained by maintaining a "sod mulch" in the orchard others who have succeeded well by similar orchard practice have begun to add their testimony in favor of the idea. This has led some growers to feel that to put the orchard in sod practically insures its success. It should be borne in mind, however, that simply to put an orchard in sod (if the grass is mowed and taken off as hay or if it is pastured closely), may be a very different thing from maintaining a sod mulch such as is described by Mr. Hitchings.

While apple growers differ in opinion as to the best methods of managing the orchard soil there is one po nt on which they seem essentially to agree, and that is that the young trees should be given clean culture for a time, while they are young, perhaps up to the time when they become of bearing age. The first season's growth of the trees after they are set in the orchard is in many respects the most important year of their lives in determining whether or not the orchard will be profitable. If the trees get a good start the first year they will become well established, so they will be better able to withstand trying seasons in the future. On the other hand if they make a poor start the first year, if many of the trees die and if others merely live through, they become so stunted and often so diseased that no amount of good care afterward can make a good orchard of them. Thorough, clean cultivation the first year insures a good, vigorous start for the trees. If cultivation is not given, so the trees become overgrown with weeds they cannot make a good start and will suffer from this early neglect for the est of their lives.

Cultivation should begin as soon as possible after the trees are planted in spring. It is not best to delay cultivation until weed growth forces it. The soil should be stirred early and often so it will warm up early, so it will remain well aired and so as to regulate the moisture supply. Trees will usually make very little growth after planting until cultivation begins. If cultivation is delayed until the weeds begin to grow the trees seem sometimes to make no growth at all until the orchard is thoroughly worked, when they immediately start into vigorous growth.

Almost any tool may be used which will keep the ground fine and level between the trees and will kill all weed growth. If the soil is fine and mellow a spike tooth harrow is just the thing. A crust should never be allowed to form on the ground after a rain, but a good dust mulch should be maintained over the whole orchard surface. This saves the water in the soil so the trees may use it when the summer becomes dry and hot.

If the soil settles down hard and firm, after heavy rains, so the spike tooth harrow cannot puverize it, a disc or cutaway harrow is one of the best tools to mellow it to the required depth so the lighter harrow can reach into it. Constant cultivation accomplishes two things that are of prime importance. It opens the soil so the early rains will sink in and be stored up in the soil instead of flowing off over the hard surface and being lost to the trees. It also conserves this moisture by preventing its evaporation from the surface of the soil. Water rapidly evaporates from a hard, uncultivated soil, but a dust mulch on top prevents this evaporation just as any other mulch does.

A great many orchardists in the central west prefer to keep the apple orchard in clean cultivation during its life. Clean cultivation prevents the trees from being injured in dry years. Trees that are kept in clean culture by conserving the moisture in the soil, every year make a more uniform growth than do those that are not so cultivated. If the season is too wet the cultivation airs out the soil and warms it up so the trees make better growth. If the season is too dry it enables the soil to store up more of the spring rains and to retain this water better during the dry period.

A record of growth taken by this Station, in eight different orchards, for a series of years showed that in cultivated orchards the main trunk and main limbs of the trees made uniform growth each year, regardless of whether the season was wet or dry. In uncultivated orchards the tree made fair growth during favorable seasons but during dry years the growth fell off perceptibly and during years following severe drouth the growth fell to one-fourth or one-sixth the normal amount. That shows that apple trees may become so devitalized by a dry season that it will take a year or two for them to recover their vigor.

The time to cease cultivation in summer or autumn is a matter of importance. It is generally conceded that cultivation should cease early enough for the trees to ripen up their wood in autumn. Late cultivation stimulates late wood growth and some times causes the trees to go into the winter in a growing and tender condition. The general statement has been made that cultivation of the orchard should cease about July, so the wood will have time to stop growth and to ripen before cold weather comes on.

The time to cease cultivation cannot be measured by actual dates, however. It depends upon conditions that may here be taken into consideration. If the rainfall is abundant, that is if the season is favorable for uninterrupted growth, cultivation should cease early, say the first of July. If the season is dry and the trees are beginning to suffer for water, cultivation should be kept up until later, so the treees will not suffer from autumn drought. A severe drought in August or September may itself prevent the trees from properly maturing their wood, unless the soil is well cultivated to save the water.

If the trees are carrying no fruit to tax their energies, cultivation may cease earlier than if they are carrying a heavy crop of fruit. A heavy fruit crop on the trees is a severe tax upon the vitality of the trees. Trees that are loaded with fruit have less tendency to make late wood growth than do those which have no fruit. With a heavy fruit crop on the trees cultivation should be kept up late enough to prevent the trees from suffering for lack of moisture. If the season is dry and the trees are also loaded with fruit it is sometimes best to continue cultivation up to the time when the fruit reaches full size.

While clean cultivation in the young orchard is desirable it is not best to allow the orchard to go very many years without plowing into the soil some kind of vegetable matter. If a soil is kept bare for a ser'es of years it soon begins to lose its humus, or vegetable matter. The soil loses its mellow, spongy condition; it bakes readily after a rain and becomes hard, lumpy and dead; it runs together in a wet time and remains in hard lumps when it gets dry; it does not stand the drought so well and is more liable to wash badly in wet times.

It is just as desirable to plow vegetable matter into the orchard soil as it is into other farm land. This is particularly true if the soil is subject to wash or get lumpy. If the land is full of humus when the apple trees are planted clean cultivation throughout the season may be given if desired, for a series of years. Eventually, it will be found necessary, however, to grow some crop on the land and plow it under. If the soil is not well supplied with humus at the beginning it may be well to grow some cover crop right from the start and plow it under when cultivation begins in spring.

Crops in the orchard may be divided into two classes. Those which are grown for profit, while the trees are getting large enough to bear, and those which are grown for the benefit of the orchard soil. Some times the same crop may serve both these pur-

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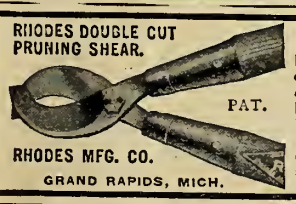

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poses. In any event the crop selected should not come in conflict with the good of the orchard soil.

If the orchard soil is rich enough to produce good crops it is often advisable to grow some crop among the young trees, to pay the expense of growing the trees to bearing age. These crops should be such as will admit of good cultivation. Grain crops for example should not be grown in an orchard.

Corn is a good orchard crop for this section. It is capable of being grown on large areas and hence it is adapted to use in the large orchards. The corn crop in the orchard often pays the expense of cultivating the trees and under favorable conditions even more. One row of corn should be omitted where each tree row comes.

Garden vegetables, such as potatoes, tomatoes, sweet potatoes or other crops that admit of clean cultivation may be grown. In some districts where the canning industry has been developed the growing of tomatoes in the young orchard pays all the expense of managing the orchard. Blackberries and strawberries are admissable in an orchard. It should be borne in mind, however, that the orchard is the main thing to be grown on the land it occupies and uniess the soil is rich enough to produce other crops without robbing the orchard of it snecessary food supply it is best to devote the entire area to the trees alone.

In order to improve the orchard soil the cow pea is the great orchard crop for Missouri. The soil should be cultivated from early spring until some time in June and the peas sown. ff the peas are harrowed just as they are coming up this will leave the land mellow until it is quickly covered by the pea growth. This gives opportunity for clean cultivation during the essential part of the season and still secures a green crop to fertilize the orchard. The peas may be mowed for hay or pastured to hogs, if the size of the trees is such that the animals will not injure them. The cow pea stubble and roots that remain should be plowed under the following spring and they will add much fertility to the soil, besides leaving it mellow and in fine condition.

To prevent washing of the soil rye or wheat may be sown after cultivation ceases in summer and plowed under the following spring. If they make a good autumn growth they will keep the soil from washing during winter and spring. When plowed under they add humus to the soil, thus rendering it more drought resisting.

On some soils orchards thrive well if they are sown to clover after the trees reach bearing age. It is best usually to leave enough clover on the ground in autumn to make a good mulch. If the soil washes badly or is subject to suffer from drought it may be desirable to remove none of the clover, but to mow it frequently and allow it to rot on the ground to form a mulch.

(To be continued.)

J. C. WHITTEN.

Columbia, Mo.

Orchard Management in New England.

In a bulletin now in press by Prof. F. Wm. Rowe of the New Hampshire College, the following is the concluding page under head of "Partial Summary."

(1) "Plants have life the same as animals, and they require feeding, watering and care, if we expect to derive profit from them."

(2) "The object of the orchard is to produce fruit. The amount and kind of tillage will vary according to conditions; soil, plant food, etc. Study the individual needs of each orchard."

(3) "The experiments carried on at this station of using dwarf peas and beans as a cultivated crop in orchards, and then turning under the vines after picking the pods is recommended. The orchard has the benefit of continuous cultivation at the proper season; the plants when plowed under enrich the soil and the picked product pays the bills."

(4) "The Hitchings method of cultue is worthy of our attention. While not sufficiently tested in New England yet it appears to have merit."

(5) "Fruit trees of different kinds, as apples, plums, grapes, etc., need food according to their respective wants. We do not feed the horses and swine on the same diet; why should we have to so feed different kinds of plants?"

(6) "Whether to train the tree high or low depends upon several conditions."

(7) "To prune a tree properly means to begin when young and prune annually. This done, there is no occasion of cutting off large limbs, which endanger the life of trees."

(8) "It costs to thin fruit, but the resulting fruit is of a superior grade, and the expense of picking inferior fruit is eliminated at harvesting time. Peaches and plums ac always thinned for best results."

(9) "Spraying for both insect enemies and fungous diseases is a part of the fruit business. If one does not intend to post himself on how to combat these foes, he had better not attempt fruit growing."

(10) "Hardy varieties, well drained soils, and slightly rounding up of the soil about the trees, together with a cover crop, assist very much to protect the trees in winter."

(11) "Modern conveniences should be devised for picking the fruit. Fruit growers realize more and more the importance of lessening the time between picking and getting the fruit on the market. Apples for cold storage are picked and shipped at once."

(12) "To keep up an interest in fruit growing requires a sufficient study of fruit problems to at least comprehend what the essentials for success are for the crops to be grown. Supplement one's work with reading from the best authorities, by visiting successful orchardists and attending horticultural meetings. Attend a short lecture course at the Agricultural College. Become a fruit grower both in theory and practice."

Tillage for Orchards.

In a forthcoming bulletin of the New Hampshire College Experiment Station, Prof. Rane, the writer, discusses the subject of tillage for orchards. In it he says that just how much and how often cultivation is needed, and the best means of obtaining it, kinds of implements to use, etc., are open questions. One soil may require constant cultivation or tillage in order to get desirable tree growth; while another with comparatively little attention may be very responsive. As a rule, however, it is an exceptional orchard that gives satisfactory results without tillage. Tillage and cover crops go hand in hand. Many New England lands are too rolling for continuous tillage. It is important that we check tillage during midsummer in order to allow the trees to harden and mature before winter. The tree should make its growth during the early or fore part of the season.

Experiments at the New Hampshire College Experiment Station have been carried on in orchard cultivation, and the most satisfactory results, everything considered, come from growing the dwarf peas and peas in them. The method is to break up the soil in the spring, prepare it well, and plant with dwarf peas and bush beans in rows. This allows of frequent cultivation and the pods pay well for the labor. When the pods are harvested the vines are plowed under and the land is sown to some cover crop. The latter crop has time to get well established, as the cultivated crops come off early. The same treatment can again be followed the next year or until the orchard is in good condition.

Report of American Pomological Society.

The secretary of this national society of fruit-growers and students of horticultue announces that the report of the proceedings of the Boston convention has just come from the press and is ready for distribution. This report contains an unusually large amount of valuable matter, including, as it does, the addresses of noted scientists and pomologists. Important changes appear in the amended code of nomenclature. For the first time, the pomological history of the middle states is written up; the chapter on ideals in pomology is full of suggestions; the cold storage of fruit is thoroughly discussed. There is also to be found an important contribution on the judging of fruits by the score-card method. Originators of new fruits should acquaint themselves with the method of ad interim awards recently adopted by the society whereby the grower can enter a new fruit for a Wilder silver medal at any time of the year. The biennial fee is $2; life fee, $20, payable to Treasurer L. R. Taft, Agricultural College, Mich., or Secretary John Craig, Cornell University, Ithaca, N. Y.

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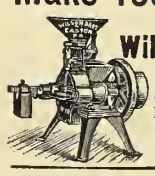

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Volume 15 , ST. JOSEPH, MO., APRIL 15, 1904 Number 4

In this issue are published the first reports concerning prospects for fruit for the coming season. These will likely be helpful to our readers and to all who are interested in the fruit trade. If you have any suggestions as to how these reports can be improved, how they can be made more helpful, please send them, for it is our purpose to make these reports as helpful as can possibly be. Some sections are not represented in these reports which should be included, and these will be added from time to time. It there is a fruit crop this year in the Middle West, as now appears probable, these reports can be made very helpful, and we ask the co-operation of all our readers in working to this end.

The editor of the Fruit-Grower visited the World's Fair grounds at St. Louis last month, and while there talked with a number of gentlemen who are connected with the Horticultural Department and the various state exhibits. After having heard the plans described, we can safely say that in no one department will this exposition surpass all previous ones to a greater extent than in horticulture. More states will be represented by exhibits and these exhibits will be larger and better than ever before. The rules of the horticultural department require that the space allotted to the various states be covered with fruit from the time the exposition opens until it closes. This means that every state will have to have the co-operation of the growers of the various states in order that these exhibits are maintained at the proper standard. All of the states, as we understand it, which have been awarded space have enough apples in cold storage to open the exhibits and to cover a part of the space throughout the season, but not one of them has enough fruit, of course, to cover the space throughout the entire exposition. As the various fruits ripen, therefore, they must be furnished in quantity, making a varied exhibit throughout the summer. This work is important enough to justify the co-operation of every fruit-grower. Strive to grow some choice specimens of fruit for the exhibit of your state, and send these to your state representative at the proper time. There will be good-natured rivalry among the various states, and everyone should strive to do his best.

In connection with the foregoing, attention is called to the observance of "Apple Day," which wil occur about Sept. 27. This is a special day which is to be observed in connection with the meeting of the American Apple Growers' Congress. Details of the plan have not been arranged, but it is proposed to have enough apples to give to every man, woman and child who attends the World's Fair that day. The celebration will occur at a time when Jonathan, Grimes' Golden, Chenango and other apples will be available, and Wealthy and some other apples of that class will be seasonable from northern orchards. It is not the intention of the promoters of the movement to limit one in the number of apples he shall receive, but it is proposed to give each person samples of several varieties, and thus educate the consumers somewhat as to the difference between varieties. Fruit-growers are asked to donate apples for this purpose, and a small quantity from each one will provide a sufficient quantity. It will be good advertising for apple-growers. It will have a tendency to increase consumption. If the Western prune-growers can send several carloads of prunes to give away, to make popular the consumption of prunes, why shall not our apple men seek to induce a more general consumption of this fruit? We vote for Apple Day, and hope the crop in the Middle West will be sufficient to supply great quantities for all World's Fair visitors.

Have you received your supply of free seeds from your congressman yet? If not, there is something wrong. This being the year when all members of the lower house of congress are to be renominated, these gentlemen exercise unusual care in the distribution of the free seeeds. There is more opposition to this free seed business this year than ever before, and it is likely the opposition will grow until the practice of distributing free seeds will be abandoned. Certainly it should be, for the money so used is largely wasted, and the seed business has lost its original plan. A move which is now being agitated is to take the money which is now spent for seeds and devote it to the buildin of good roads throughout the country. This move has our hearty sympathy. If the government wants to do something for the farmer which is realy helpful, the building of good roads offers a most excellent opening. We vote for the discontinuance of the free seed business, and the diverting of the money from this fund to the god roads movement.

The Fruit-Grower has received, during the past few weeks, more specimens of twigs infested with San Jose scale, from readers in various parts of the country, than were ever received before in as many months. This indicates either that San Jose scale is becoming more common or that the publication of articles on the subject recently has stimulated interest in the past. In any event, the fact is apparent that a great many farmers have trees infested with San Jose scale who have not suspected that such was the case. The insect must be fought heroically, for it is a hard one to control. There is no need of becoming unduly alarmed, for the pest is not such a bugaboo as it was at first. Simply fight it, and keep it under control. If you are in doubt as to the identity of any pest, send a specimen to the experiment station of your state, and have it identified, so that you will know the best methods of fighting it. Don't neglect the work.

There is much interest among fruit-growers in the Mississippi Valley in the horticultural meetings which will be held in connection with the St. Louis Exposition this summer. The first of these meetings will be the summer meeting of the Missouri State Horticultural Society, which will be held in the Missouri building, on the World's Fair grounds, June 7 to 10, inclusive. As announced last month, the sessions of the society will be held in the forenoon only, leaving the afternoon for the members and their families to spend in sight-seeking. Prominent men from out of the state will take part in the program, and there will be many visitors in attendance from all over the country. Two more meetings which are to be held are the meeting of the American Apple Growers' Congress and the special meeting of the American Pomological Society, which will likely be held later in the eason. The Apple Growers' Congress will be in session on Apple Day, which has been set for September 27.

Recently the Fruit-Grower published a criticism of a claim which is made by the inventor of a nostrum which is claimed to render fruit trees immune from attacks of insects and fungi, simply by boring holes in the trunk of the tree and injecting a dose of the remedy. We are in receipt of a letter from the inventor of one of these remedies, who claims the Fruit-Grower is unfair; that it attacks a method which is approved by practical growers who have tried it. This gentleman insists that we accept his advertisement, stating that we are permitted to criticise his plan all we please, simply that we allow him to state his claim in his advertiement. And so there is an advertisement in this issue of one of these remedies. We make this statement so that no one will be deceived into believing that we in any way indorse this preparation. We don't believe it will do what is claimed for it, by any means. From the reecommendations which the inventor presents, we are led to believe that he is perfectly honest in his belief—but he is likely mistaken as to his conclusions. At any rate, those who want to pay the price can test the matter for themselves. We don't think the advertiser will get good returns frm his ad in the Fruit-Grower, and told him so, but he wants a chance to make a statement as to his remedy.

The United States Department of Agriculture has recently issued a bulletin by Prof. M. B. Waite entitled, "Fruit Trees Frozen in 1904," which tells of conditions in the orchard of New York and New England, after the severe weather of the past winter. This bulletin emphasizes a truth which has been fully demonstrated time and again in recent years, and that is that high locations are best for fruit. Prof. Waite found that the trees which were worst injured were in low, flat places, or pockets. Sometimes a rise of ten of fifteen feet resulted in the trees being less seriously injured. While down in the low places many trees were badly injured, and many killed outright, up on the high points fruit buds had survived in a great many cases. This same condition existed throughout the Middle West last year and again this season, as regards peach buds. The fruit buds which are alive are found on the high points, and on northern slopes. These facts should be considered by those who intend to plant trees this spring.

The Fruit-Grower is in no sense a political paper, but we wish to call attention to one phase of the political situation in Missouri this year, which is particularly interesting to farmers. It is generally agreed at this time that the rural population of the state will nominate the Democratic candidate for governor this year, in spite of the opposition of the large cities of the state. Early in the campaign it became apparent that the farmers of the state had ideas of their own as to who should be nominated for governor, and at first the politicians claimed that the country people would come around to their way of thinking later. But as the campagn has warmed up, the farming communities have remained firm, and there are now signs that the farmer will prevail and win the fight. This is particularly interesting, in that it shows the power of the farmers when once they become aroused. It is a hopeful sign, for it shows that even though the cities follow after strange gods, the farming class still hold the power to nominate and elect candidates, to make and unmake laws. Corruption is not so apt to exist in the country as in the city, and the farmer should see to it that they never lose the power they now possess, nor should they hesitate to exercise it when necessary to do so. The country is pretty safe as long as the farming class can prevent panics and disaster and as long as they can rebuke corruption and unrighteousness in public affairs.

Notes by the Way

"I am going to close out my business in the city, and engage in farming, where I will not have to meeet such fierce competition."

This is what a man said the other day. He called attention to the fact that the competition in all lines of business in the city is very keen, and one must keep his wits about him in order to meet this. And so he was going, as he said, to the farm, where there is no competition. He also selected fruit farming as the particular branch of agriculture to which he will devote his attention.

Poor, deluded fellow. Why, the farmer, and especially the fruit farmer, has to meet the keenest kind of competition. It is an unceasing struggle for the mastery. Aside from the competition of one's fellow-farmers, there are other things to reckon with. Take the insects, for instance. Assuming that the winter has past without material injury to fruit bud or tree, the grower naturally feels encouraged. But suppose he grows apples as a main crop. About the time his trees bloom, giving promise, as he hopes, of an abundant crop, he finds that with the unfolding buds there have appeared the larvae of the canker worms.

And then there is competition, and of the keenest kind. The spray pump is brought out and the trees are given a dose of poison. But it seems remarkable how those wiggling, hungry worms can find a part of a leaf which is not coated with the poison, and they will feast on it in perfect security. And the work of spraying has to be repeated.

Perhaps the orchardist wins this first fight—this first test with his competitor. And his hopes rise again. But the codling moth is still to reckon with, to say nothing of apple scab, hail storms, and as ripening season approaches, the bitter rot is still a formidable competitor in Southern orchards.

But after the orchardist has met all this competition, and perchance overcome it, he is still not "out of the woods." There is the apple buyer, and the railroad company to still account for, to say nothing of the man who furnishes apple barrels, the men who are to be depended upon to pick and pack the fruit, etc.

No, the fruit farmer is not without competition. He has literally all kinds of competition. And when his fruit is finally ready for market it has to come into competition with apples of all kinds and sizes, from all parts of the country—for the apple is a fruit which seeks all markets. And the competition cannot be said to have been past until the grower has the money for his fruit in the bank.

Isn't this the case, now? Does he not have to fight all through the season, with insects, fungi, commission men, railroad companies, fruit package dealers, and all that, to say nothing of his neighbor who does not know what apples are worth and has made a price below the cost of production?

No, don't engage in farming, especially in fruit farming, if you wish to escape competition. There are plenty of things to fight with on the farm.

But, after all, this is what makes men strong; this is what gives zest to the business. And how much greater is the reward for him who overcomes. We grow strong by working, and we profit all the more because of the fight which we have to make. The weaklings will fall by the wayside, and the one who persists will have the greater reward.

But we feel sorry for that man who thinks he will have no competition in growing—or trying to grow—fruit.

Along the line of the foregoing, we want to tell about a fruit farmer we know of. He told us to stop his subscription when his time was out; the

family had moved to town, and he would not need the paper any more They had done fairly well on the farm but his wife had sa'd she could not stand the work which was required in the farm home, and so they were going to town.

Now, there are farm homes where the work is too hard for women, and it was not unusual that this change should be made. Perhaps it would be found that there was less work about the house in the city, and life would be more enjoyable.

But what business do you suppose this family engaged in, when they moved to town? They opened a boarding house. And the change was made to escape wok on the part of the women folks, too! This change shows how apt we are to think that the work of another is less ardous than our own, and so we want to change.

Do you know anything about a boarding house in the city? No? Then pray that you may never know. It is an unceasing grind of hard work, and the hardest kind of hard work, too. This family made a bad move. They had quite a supply of vegetables, canned fruits, etc., when they came to town, and fared well for a time. But rents were high, fuel was high, boarders were shy and hard to get and when once they were secured they were finnicky in their ways. And the work was mighty hard.

It was not long until a change had to be made. There was no money in keeping boarders—nothing but hard work. And so the business was abandoned. And now the family has used the last of their savings from the farm and opened a little grocery store.

Oh, there is no competition here! And no hard work. Think what must be the result of th's enterprise, with no knowledge on the part of the proprietors. It will not take long to find that the grocery business is not the proper thing, and then another change will be necessary. Perhaps the family will go back to the farm, if it has not been sold and the money spent.

And here we are, with one family moving to town to escape the work of the farm, and another moving from town to the farm, to escape the competition of business life. How much better it might have been had these persons agreed to change places for awhile, and see how they liked the new business. They might have saved themselves endless trouble and expense, and then it is likely both would have been willing to go back to their old lives with more a feeling of contentment.

But this is the way of the world. We are too prone to want the things we have not, and to be dissastisfied with those we have. You have heard the story:

Two men sat by the roadside,
Each bemoaning his lot;
One had buried his wife that day,
The other had not.

The Fruit-Grower reaches farmers and the farm home, and the moral of this story is that those who live on the farm, old and young, boys and girls, should think a long time before tthey make a change for the city. There is much to lose by the change.

And above all things, don't try to start a boarding house. J. M. I.

The World's Fair.

In making your arrangements for the World's Fair at St. Louis, this summer, if you consider convenience and saving of time, you will take the Wabash Railroad as it runs by and stops at its Station at the entrance of the Fair Grounds; thus saving several miles run and return, and the inevitable jam at the big Union Station. By all means consider the advantages of the Wabash.

The Hillis Dust Sprayer Co. of McFall, Mo., manufacture one of the cheapest, most effective sprayers on the market. They can furnish a first-class up-to-date sprayer for $5.00. Also good strong powders put up in bushel packages, at $1.00 per bushel. It is poor economy to let insects destroy your fruit and vegetables, when you can protect them by a small outlay of cash and time. The sprayer will save many times the cost of it in one season.

U. T. Cox, Rockwood, Ohlo, reported that peach buds are all right in his sectlon, but some were reported killed farther north.

The Family Circle

On the t tle page of the March issue of the Fruit-Grower appeared an illustration of a tree in full bloom. A number of persons have asked us what kind of a tree it was—as though every fruit-grower should not have recognized the tree at once. It was an apple tree—a new kind of a tree, bearing a new kind of fruit. Herewith we present an illustration showing the fruit borne on this new tree. How do you like this new apple? Isn't is a beauty?

This is a new member of the Fruit-Grower Family. Th's is Brother Jonathan. Note the pleased expression on his face. It is due to the fact that the

subscription department has just reported to him that subscription receipts have broken all records. Talk about "the smile that won't wear off!" What's the matter with this one?

But, really, how do you like the looks of Brother Jonathan? He pleases us so well that his smiling countenance will appear on our printed matter in various forms. He is the "silent member" of the firm—our Brother Jonathan. On his behalf, we greet the members of the Fruit-Grower Family.

More members of "The Family" are at work getting up clubs of new subscribers for the Fruit-Grower than have ever been engaged in this work before. The letters which they write are most interesting, and the work they are doing is most effective. Our readers will be interested in knowing that all our subscription records were broken again last month. More new names were added, by far, than was the case the preceding month, and the work continues.

We want to publish a part of a lengthy letter from W. F. Bates, Cane Hill, Ark., which tells how he raised a club of five new subscibers for the Fruit-Grower. He says:

"I inclose list of five subscribers for the Fruit-Grower. I think nothing will help the fruit industry so much as a good fruit paper, and you are surely giving us all we could ask. I must tell you how I raised this club. A man came by where I was taking up strawberry plants and asked me if I was an agent for the Fruit-Grower; said he had seen a copy of the paper at a neighbor's, and had thought it was the finest paper he had ever seen. I told him I was not an agent, but would take his subscription and would get up a club.

"I took his money, went to the house and saddled my horse, and started to Clyde, three miles from home, to get some fruit trees. I took a copy of the Fruit-Grower under my arm. The first man I saw was a neighbor in Cane Hill.

"Says I, 'Hello, Hodges! Do you want the best fruit paper in the country? He had turned only a few pages of the March number before he said, 'Yes, I want it.'

"I went about half a mile further and overtook a stranger in the road. Says I, 'Hello, stranger! I have something here I know you want.' And a sight of the paper made him pull out his old leather bag. This man was from Prairie Grove, eight miles from home. I had gone but a short distance further when I met another stranger, from Skyllght.

"I said, 'Stop right where you are, and give me your name and the money, and I'll send you the best fruit paper in the country.' At the sight of the paper the money was forthcoming. When I reached the nursery I asked the man if he took the Fruit-Grwer. He said he did not, and I told him I was ashamed of him; a man who had been in the fruit business as long as he had, to let such a paper pass him. He said he had seen the paper and was glad to become a subscriber.

"I was out from home only a couple of hours, and most of that time was consumed in getting my fruit trees and eating dinner with the nursery man, and when I started home I had my club of five subscribers. The first man who wanted the paper was from Baldwin, twenty-five miles from this place. No two subscribers in the list are from the same office.

"Say, have you any way of knowing who sent the Fruit-Grower to me last year? Some friend did me a great kindness, but I have never learned who it was."

See how that club was raised? Simply ask your friends and neighbors to subscribe, and show them a copy of the Fruit-Grower, and the club can easily be raised. Note what Mr. Bates says about the kindness of the friend who sent his name for a sample copy last year. He has shown his gratitude by introducing the Fruit-Grower to his neighbors. You see you are doing your neighbors a kindness when you get their subscriptions—and you help the Fruit-Grower by increasing the number of members of "The Family." Send your club today.

You know in February we said our subscriber in India would be about the last to write us concerning the January number? Well, his letter has been received, but it was written before he received the January number. He missed the December number and wrote about it. And he did just as we predicted. He paid his subscription for thee years, and for an additional copy, too. He's all right, is Col. Rennick, and we wish him much success.

We are a little worried about a subscriber in Corea, where the war is now raging. He is an American over there, and may have to write us to change his address. We hope he is safe, and that he will come though the war all right. Which side do you suppose he sympathizes with, in this war? We know which side we would sympathize with if we were in Corea. How would it do to change this subscriber's address from "Corea, Asia," to "Japan in Asia?" How would that sound, eh?

Shall we tell you what Luther Burbank said about the January Fruit-Grower? He receives all the horticultural papers, you know, and knows what a good one ought to be. He wrote:

"I had noticed the January number of the Fruit-Grower which you kindly sent me, with Dr. Greene's unique article in regard to my place here. I had made up my mind, before I saw that article, that the January number of the Western Fruit-Grower was a remarkable paper, but after seeing the personal article mentioned above, thought it would not do to say so. But what's the difference? You have certainly succeeded in publishing an exceedingly handsome and valuable horticultural paper."

Scarcely a day passes that some member of The Family does not send in a club of subscribers, and ask that subscriptions date back to January, and all back papers sent to the new subscribers. We are compelled to write all such persons that we are unable to do this. Our January and February issues were early exhausted, and even the supply of March number is about gone. We printed extra copies of each issue, and saved what we thought would be a sufficient number to meet all demands—but the supply ran short.

The March number has been in great demand. Many of our readers say it was decidedly the best number we have ever sent out. We printed over 1,500 extra copies of March number, and laid them aside to meeet calls for them. But this number of papers was not sufficient, and the supply melted away in two weeks. The demand came from all parts of the country, and about a thousand new subscribers were added to our list.

Remember these things when you send clubs of new subscibers, and do not ask that the subscriptions start with January. While your friends will not get the big January, February and March issues this year, this loss will be offset by the fact that they will get these numbers next year—and they will be even better than the papers for the same months this year. Mark the prediction.

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The Wooly Aphis.

The wooly aphis of the apple belongs to the same family of insects as the aphids, or plant louse, which infests the leaves and buds, and differs principally in that it excretes a white, down substance about its body, and infests, as a rule, the roots of the apple tree, where its greatest damage is done.

The wooly aphis passes the winter not only in the egg state, but also as hibernating females. Especially is this the case south of the Missouri River. In the spring of the year as soon as settled warm weather appears, the eggs hatch and the hibernating females begin to suck the sap and soon bring forth living young with great rapidity, thus establishing in a short time a colony of wooly aphis upon the root. During the summer the winged forms are developed, which leave the trees and fly to other trees, thus establishing new colonies and distributing the species.

The wooly aphis is found throughout the entire state of Missouri and infests practically all apple orchards. It does very little damage, however, north of the Missouri River, but south of the Missouri River this insect is responsible for a large per cent of the trouble in apple orchards. The insect in sucking the sap from the trees, causes them to develop abnormal growths or galls, or nodules, the tissue of which soon decays, and the result is the main supporting roots of the tree are ruined, and an ordinary wind is then liable to blow the tree over. Were it not for the fact that the trees blow over, the damage would not be so great. A badly infested tree has a much less number of leaves than normal and the leaves appear yellowish, but the tree bears fruit in good quantity.

It is practically folly to expect nurserymen to grow apple trees free from the wooly aphis, and unless the apple trees in the nursery are very badly infested and the roots show badly developed galls, the trees should be accepted and planted, because it is impossible, without artific al means, to keep the wooly aphis from getting on the trees in the orchard even though the trees themselves may have not contained wooly aphis when sent from the nursery.

It is a simple matter to prevent the wooly aphis from doing any serious damage, by using tobacco dust. In the spring of the year, just as soon as settled warm weather appears, the infested trees should have the earth removed from about the base for a distance of two feet around the trunk and about four inches deep, and this should then be filled in with about five pounds of tobacco dust. The earth should then be placed over so as to prevent the winds and rains from carrying it away. The nicotine in this tobacco dust will soon reach the roots of the trees and the aphis will not only be killed, but others will be prevented from coming on that season. The next season this should be repeated if necessary.

It will not suffice to use tobacco in any other form than as a powder. This tobacco dust can be obtained from the large manufacturing establishments for about twenty dollars a ton, and it is worth that as a fertilizer, to say nothing about its insecticidal value. J. M. STEDMAN.

Columbia, Mo.

Hardiness of Peach Trees.

Fruit-growers in Southwest Missouri are at this time much interested in the condition of the peach buds. Without doubt many of them are winter-killed, but it is believed by careful observers that enough are still alive to insure a fair yield. In this connection the question of the ability of the tree to withstand a low temperature, may be approximately discussed. There are several factors that enter into this problem.

First, the degree of cold.

Second, the forwardness of the buds.

Third, the vitality of the tree.

On the first, authorities differ, but it is generally accepted that 15 degrees below zero is destructive to the peach bud. But whether that degree of cold will bring disaster to the coming crop, must depend upon the conditions of the bud and upon the vital potency of the tree.

The second is brought about by prolonged warm weather in the late fall and early winter, followed by freezing weather later on. There can be but little doubt but much of the loss sustained is based upon the lowered vitality of the tree, rather than upon the untoward season. Of course there are some seasons so obviously out of tune that the strongest tree would succumb. But the assertion is justified by the facts that half of the losses from winter-killing is due to vital weakness. This lack of vital strength comes perhaps principally from the depredations of borers. It seems that litle help has been found in the past in the way of protecting fruit trees from these pests, After they enter the tree they are so concealed that their presence is not suspected till the tree is damaged or ruined. There can be no doubt that many a tree that lives and seems to all outward appearance, to be perfectly healthy, is nevertheless a victim of the borer, and that it is seriously injured by excessive fruiting or by freezing. It is often the case that a tree will begin to die with any excessive draft upon its strength. We see the same thing occur among animals and men. The soldier of greatest endurance is one whose health is perfect. A work horse can not stand up under hard work and parasites at the same time. Keep the trees in vigorous, strong condition, and they will withstand cold weather better, and the object of orcharding will be more fully realized in the fewer failures. Pay attention to the insect pests that weaken and destroy trees, rather than expend your well-meaning but misdirected energy to keeping the ground stirred. Apply orchard methods to orchards, and stop applying corn methods to your trees. There can be no question but a strong and vigorous tree will stand the vicissitudes of weather better than one of weak vitality. DR. H. O. BEESON.

Noel, Mo.

Experiments With Fertilizers.

It is a well-known fact that the value of all fertilizers to the land upon which they are placed consists in their chemical properties. The soil, whose productiveness has been exhausted by crops, absorbs these chemicals from the fertilizers and again becomes rich. Some extensive experiments have been recently conducted by the Kirkwood Supply Co. of Kirkwood, Mo., with a fertilizer which in a small compass contains all the qualities that phosphates, guano, or ordinary manure contains in bulk. They have succeeded in combining in a powder all the desirable chemical properties which fertilizers possess. This powder is dissolved in water and applied nightly to vegetation with astonishing success. For 25c a large package can be obtained.

PRICE $37.50 Split Hickory Top Buggy

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The SPLIT HICKORY Line of *Top Buggies, Driving Wagons, Runabouts, Phaetons, Carriages, Spring Wagons & Carts* comprise the latest and best in Workmanship and Quality.

A Split Hickory name plate on your vehicle means that you have absolutely the best made.

PRICE $42.50 Split Hickory Winner Top Buggy

NO. 4241—This buggy has long distance axles, quick shifting shaft couplings, double braced shafts, best SPLIT Hickory wheels, good, first-class leather quarter top, in fact, is complete in every respect and an excellent value for the money. It is sold on 30 Days Free Trial and guaranteed to be the equal of buggies that retail for $60. Our catalog gives full description and specifications.

Split Hickory SPECIAL $50 Top Buggy

NO. 4345—This is the best buggy in the world for strength, neatness and comfort. It is a buggy that surpasses competition and has more special high-grade and up-to-date features than are found on buggies that retail for $100.00. If you want the handsomest, strongest, most complete and up-to-date buggy in your neighborhood, a buggy that we will guarantee to be superior to anything you can buy elsewhere for $75.00, you will make no mistake in ordering our SPLIT Hickory Special. It has

100 Points of Merit

only a few of which we can mention here. Complete description is given in our catalogue and many illustrations are shown of this buggy gotten up in different combinations, as to finish, construction, etc.

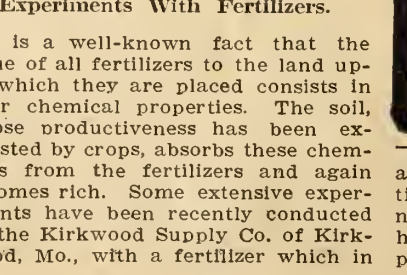
A Few of the Many SPECIAL FEATURES

Split hickory wheels with screwed rims, round edge steel tires set hot, long-distance axles; cemented axle beds, oil-tempered springs; choice of Bailey body loops or wooden spring bar; 16-oz. imported all-wool broadcloth trimming; spring cushion and spring back; genuine enameled leather quarter top, made absolutely water-proof; reinforced back curtain, 16 coats of paint, with oil and lead foundation; all wood work carried one hundred days in pure oil. Option is given of any color of gear. Body can be plain or fancy striped. Has full length velvet carpet with panel carpets; 13-inch padded patent leather dash, side curtains, storm apron; quick-shifting shaft couplings; shafts have heel braces, corner braces and 36-inch point leathers, with round leathers at singletree and at hold-back straps. Write for our FREE 136-Page Catalogue, which fully describes our

30 DAYS FREE TRIAL PLAN

and our TWO-YEAR BINDING GUARANTEE.

PRICE $75 Split Hickory Extension TOP SURREY



NO. 4083—This is a handsome, roomy, comfortable and substantial surrey, the seats are wide and roomy, backs are high and comfortable, it is equipped with long distance axles, quick shifting shaft couplings, oil burning lamps, genuine leather double fenders, seat sides are padded, full length water proof top and complete in every detail. Full description given in catalog, with many options as to finish.

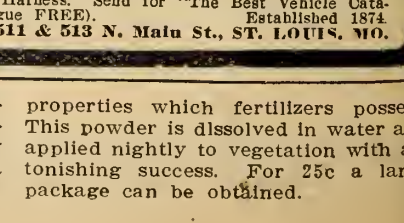
Many of our customers are subscribers and readers of this paper. Write the editor and ask him if he has ever had any one make a complaint as to our method of doing business. We treat our customers with absolute fairness; give better value for the money than they expect, and have thousands of testimonial letters from customers all over the country. We do not advertise $15.00 vehicles and then tell prospective customers that we are out of them and try to sell them a higher priced vehicle when they write for catalogue, but advertise truthfully just what we can furnish, and every statement we make is backed up by our years of experience in dealing directly with the consumer and by our reputation for straightforward, honest business methods.

The Ohio Carriage Mfg. Co.

(H. C. PHELPS, President)

5314 Sixth Street. Cincinnati, Ohio.

Split Hickory Rubber Tire DRIVING WAGON $50



No. 4023—This is a very popular style, is furnished with the very best grade of solid rubber tires, roller rub irons, open head springs, padded dash, quick shifting shaft couplings, double braced shafts and everything complete. It is our leader in driving wagons and the best value on the market for the money. Full description in our catalog.

Shipments from St. Louis or from Chicago if desired.

"Eli" Road Wagon.

$16.40

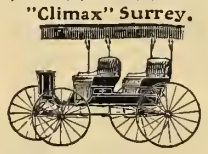
Imitation leather trimmed; Carpet, wrench and shafts—just as illustrated. Our Vehicle Catalogue 250 gives complete particulars. Send for it before you order. Other Road Wagons $21.50 and $23.90.

"Defiance" Buggy.

$23.00

Cloth trimmed: 3-bow top, back and side curtains; carpet and shafts just as shown in cut. Before you order write for Catalogue 250 with complete details. We have Buggies in better grades at $30.00, $35.95, $39.50, $43.50, $45.00 and up to $85.00.

"Climax" Surrey.



$39.50

With canopy top: Imitation leather trimmed; good, strong springs, carpet and shafts. Before ordering send for our Vehicle Catalogue, which explains fully. We have better Surreys at $46.50, $59.95, $72.50, $87.50, $110.00, $125.00, etc.

Factory Prices, 30 Days' Trial.

Do not place your order for any kind of a vehicle until you have heard from us. Let us show you how to get a high grade, nobby and attractive rig at a price anywhere from $10 to $25 lower than you can get a good rig for elsewhere. We have just the kind of a vehicle you are looking for. Buggies, surreys and spring wagons in a thousand styles. Stanhopes, breaks and runabouts—even farm wagons—all at prices you can see at a glance are decidedly low.

No trouble for us to have low prices, because we build the rigs in our own factory and let you have them at the wholesale price. No dealers, no jobbers, no middlemen—just a direct transaction between the maker and user by which the profit of the middle fellow goes to you.

What's better, we give you quality; real second-growth hickory, put together with Norway iron, and finished off like a Pullman car. No "dipping" in our factory, no new-fangled painting process, but just the old-fashioned finish with pure lead and pure oil rubbed down by hand.

Everybody likes our rigs. They are popular for their fine lines and superior finish—points that make a "Ward buggy look like a thoroughbred when compared with the common kind.

Our free Vehicle Catalogue No. 250 explains all. It gives the details of our 30 days free trial offer; it explains our Guaranty of Satisfaction, and our SHIP ON APPROVAL plan. It also tells how we can make shipments from factories in Chicago, St. Louis and Cincinnati. We are saving our customers $5 to $10 on each buggy, and giving more style, durability and finish than can be obtained anywhere else. Write to-day—a postal will do. Ask for Vehicle Catalogue No. 250. The Spring edition is now ready. Address

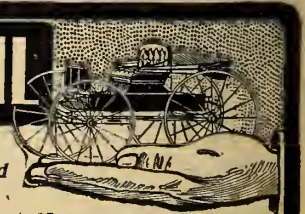
Montgomery Ward & Co.

Michigan Ave., Madison & Washington Sts., Chicago.

68

A. J. Child & Son Lock Box F

A BUGGY BY MAIL



A POSTAL Will Post You on Our Values In *Buggies, Surreys, Phaetons, Carts, Spring and Farm Wagons, Harness, Saddles, Etc.*

"The kind that suit." Shipped from factory to user at 15 to 40 per cent saving. Goods shipped subject to examination. Every rig warranted. Over 100 Styles to select from. Road Wagons, $39.90; Top Buggies, $33.50; "Fast Time" Buggies, Leather Trimmed, $37.50; "Bonaza" $55 Buggies, $42.50; (Leather ¼ top, Leather Trimming, Etc.); Spring Wagons, $39.90; Canopy Top Surreys, $54.00; "Banner" 3-inch Farm Wagons, $45.00. 75 styles Single and Double Harness. Send for "The Best Vehicle Catalogue of the Year." Postage 4c. (Catalogue FREE). Established 1874.

A. J. CHILD & SON, Lock Box F, 511 & 513 N. Main St., ST. LOUIS, MO.

"Bordeen"

Greatest of All Insecticides and Fungicides.

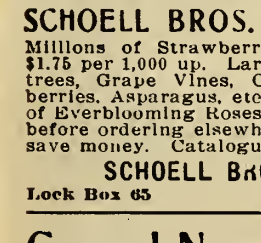
In powder form for use as dust or water spray. Does not burn foliage, kills canker worms, codling moth, nest and spot fungi. Inexpensive. Write Dept. F,

Monmouth Chemical Works
SHREWSBURY, N. J.

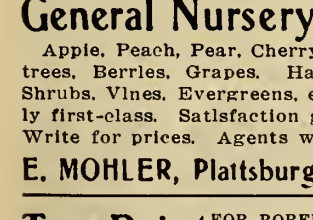
WARNOCK'S
Tree Paint

Is sold on its merits. It is warranted to protect all kinds of Fruit Trees from the attacks of Rabbits, Mice, Borers, Canker Worms, and all insects that suck the sap. We are receiving reports from our customers who live in almost all parts of the United States. All speak its praises. We have not heard a complaint. It will cost you a postal card to receive our testimonial circular. Write

R Warnock & Co, Westboro, Mo



DEFENDER SPRAYER
Powerful, ALL Brass, Easy to use. Quick Sellers. Treatise on Spraying and Catalog of Spray Pumps free. Write today. Agents wanted.
J. F. GAYLORD,
Box 77 Catskill, N. Y.



The Wallace Power Sprayer is the ideal for large or small orchards. Driving from tree to tree furnishes sufficient power. Compressed air pressure, always constant. Fits any wagon gear Ask for booklet A.
Wallace Machinery Co.,
Champaign, Ills.

Spraying Materials

Blue Vitrol, Paris Green, Arsenic, Arsenate Soda, Carbonate Copper, London Purple, Oil Soap, Acetate Lead. For sale by

WHITELAW BROTHERS
ST LOUIS, MO.

SAPERDINE
Best Borer Prebentibe Knolwn

Four years' practical test. Absolutely prevents borers. Also protects bark from injury by rabbits and sheep. A scientific remedy. Application requires no apparatus. Cheap and efficient. One application yearly, in April or May. For further information address DR. H. O. BEESON, NOEL, MO.

SMALL FRUIT PLANTS

Now is the time to order for spring planting, as early orders save disappointment in spring rush, owing to shortage of varieties, if ordered late.

C. B. GREEN, SEDALIA, MISSOURI

PRICE, $2.00. AGENTS WANTED.

None Better Than the Best

Our Fruit and Shade Trees, Evergreens and Hardy Shrubs, Vines and Small Fruits, Field-Grown Roses, etc., are unexcelled. Immense stock. No agents. We sell direct. Magnificent catalogue free.

BON AYR NURSERIES
MT. SELMAN, TEXAS

Please mention Western Fruit-Grower.

SCHOELL BROS. NURSERIES

Millions of Strawberry plants, from $1.75 per 1,000 up. Large stock of fruit trees, Grape Vines, Currants, Gooseberries, Asparagus, etc. Also fine stock of Everblooming Roses. Get our prices before ordering elsewhere and you will save money. Catalogue free.

SCHOELL BROTHERS
Lock Box 65 Nauvoo, Ill.

General Nursery Stock

Apple, Peach, Pear, Cherry and Plum trees, Berries, Grapes, Hardy Roses, Shrubs, Vines, Evergreens, etc. Strictly first-class. Satisfaction guaranteed. Write for prices. Agents wanted.

E. MOHLER, Plattsburg, Missouri

Tree Paint FOR BORERS, RABBITS, insects, etc. Best, cheapest tree protector out. Is a pourls vegetable and mineral compound. 500,000 trees protected last year; get special offer. Agents wanted. WM. ROBINSON, Bowling Green, Mo.

Lime is Not a Fertilizer.

The Ohio Experiment Station has issued the following press bulletin, warning farmers against the indiscriminate use of lime. The bulletin follows:

Lime is absolutely indispensable to plant growth, yet it is required in comparative small amounts. Our cereal crops, for instance, contain about two pounds of phosphoric acid and three pounds of potash for every pound of lime, while all soils except the clear sands contain much more lime than phosphoric acid and at least as much lime as potash. The abundance of lime is shown in the fact that water which has been for any length of time in contact with the soil is always hard; but only one grain of lime to the gallon of water, a quantity that could not be detected under ordinary conditions, would supply twice the amount of lime needed by a clover crop, which is the only one of our ordinary farm crops that contains as much lime as potash.

Lime, however, serves other purposes than as simple plant food. One of the most important of these is the correction of acidity in the soil. When a soil becomes acid clover will not thrive upon it, and when this condition occurs an application of lime may be necessary, a point thoroughly demonstrated at the Ohio Experiment Station, where a luxuriant crop of clover has been grown on limed land, while the clover on unlimed land alongside was a complete failure.

Lime performs still another important function, in liberating plant food already in the soil. If a little lime be mixed with strong manure, such as hen manure, an odor of ammonia will become apparent. This means that the lime is liberating the ammonia from the manure, and that it is escaping into the air. If lime be mixed with the soil similar action will take place. If a crop be growing upon the soil it may absorb part of the escaping ammonia and a larger crop will result; but this larger crop is made at the expense of the soil stores of plant food and if these stores are not maintained by manuring or fertilizing the soil will soon refuse to respond to lime, because all the material in it upon which lime can act has been drawn out, and the soil is poorer than if no lime had been used.

European farmers who have used lime for many years have become so convinced of its injurious effect when used in this way that they say "Lime enriches the father, but impoverishes the son," and it is customary in some places to prohibit the use of lime in leasing land.

Some of those who have lime to sell in Ohio are advertising it as a fertilizer, claiming that it is "better and cheaper than phosphate." But the Ohio Experiment Station would earnestly warn all farmers against using lime as a substitute for manure or fertilizers. When used as an adjunct to liberal manuring or fertilizing lime may be made to perform a most important service, but its use as a substitute for manure or fertilizer means ruin to the soil.

Where clover is failing to grow the use of lime is indicated. For this purpose the common quick-lime is all that is required. A very convenient form of lime is made in some parts of the state by grinding quick-lime into a coarse meal. This can be applied with the fertilizer drill or the manure spreader, using about a thousand pounds per acre. It costs $3.50 to $4.50 per ton at the kilns. It must not be expected, however, that lime alone will bring prosperity to the clover crop. In the Ohio Station's experiments lime produces very little effect on clover on unfertilized land. Manure or fertilizer must first be used before lime will produce any lasting benefit.

Farmers should not be misled by the claim that certain methods of preparing lime will prevent its injurious effect. If those methods do what is claimed for them they will prolong and increase that effect, and the apparent increase of crop which follows the application of such limes will be paid for by a certain and more complete impoverishment of the soil. Lime is not a fertilizer and its use as a fertilizer will bring ultimate loss.

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A. D. Seward, St. Louisville, Ohio, sends a club of five new subscribers and asks for more subscription blanks, saying there are other subscriptions which he can send. Our Ohio and Pennsylvania subscribers are sending in a great many new subscriptions this year, showing that the fruit-growers of those states know a good thing when they see it. By the way, one of our Pennsylvania readers calls attention to the fact that the Keystone state produced one-seventh of all the apples grown in the United States last year. So of course the Fruit-Grower's list in Pennsylvania ought to grow.

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Good Returns from Small Advertisements.

Of course, as a rule, large advertisements pay best, but listen to what two firms which used small space in the Fruit-Grower have to say. Each used half-inch space, and note their stories:

"My ad in March issue has brought me so far $34.75 in orders, with several inquiries yet to hear from."—M. L. Bonham, Clinton, Mo. (This letter was written on April 4, and we did not start to mailing March issue until March 16.)

"Out of some fifty papers in which we have been advertising in the past few months, we regard the money spent with the Western Fruit-Grower as productive of the best results."—The Peach Grower, Atlanta, Ga.

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Dates for Nurserymen's Meeting.

The dates for the meeting of the American Association of Nurserymen have been set for June 22, 23 and 24. The meeting will be held at Atlanta, Ga., and promises to be one of the best ever held. It is said that the railroads of Georgia will take the nurserymen and their friends on a complimentary trip through the peach orchards of Georgia. The dates of the meeting were set after consulting with Mr. J. H. Hale, Messrs. Berckmans and other Georgia orchardists, who are of the opinion that the peach season should be at its height on the dates named.

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After the Strawberry Crop.

A letter from Coyne Bros., the well-known commission men of Chicago, strawberry season, with fruit from Texas. This firm has handled a number of carloads, the berries selling well—from $4.00 to $4.50 per crate. The firm says that there were too many Lady Thompsons among the berries, and variety is not a desirable one for the Chicago market. Klondike is recommended as being a variety which is popular in Chicago. This firm wants to learn of berry-shipping points in Missouri, aside from Sarcoxie, where shipments will be made in carlots this year.

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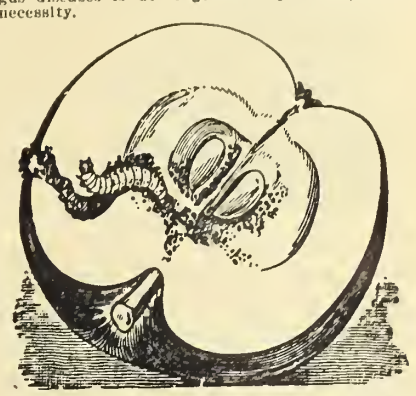
Pittsburg Bolster Springs.

Every reader of the Fruit-Grower is interested not only in growing good fruit, but also in getting that fruit to market in the best possible condition. Fruit which is hauled in a rough wagon will be bruised. And at the same time one cannot always afford a good spring wagon, in addition to the farm wagon, nor would the spring wagon always carry large enough load. A way has been provided, however, for everyone to get his fruit to market "on springs," without having to invest in an expensive spring wagon. The Pittsburg Bolster Spring Co., Box 1083, Pittsburg, Pa., manufactures a bolster spring which is strong and serviceable, which will bear any load, and which will protect the fruit from injury as effectively as an expensive spring wagon. These bolster springs are inexpensive, can be applied to any wagon in a few minutes, and are fully warranted in every way. We suggest that our readers read the advertisement of this firm, and consider the matter of purchasing bolster springs before time to market fruit. The springs will save your fruit, and will save buying an expensive spring wagon.

"I went to town Saturday and thought I would ask a few farmers to subscribe for the Fruit-Grower. I thought I would get five, but secured eight subscriptions in just that many minutes, and inclose the list herewith."—James Friedel, Seaford, Del.

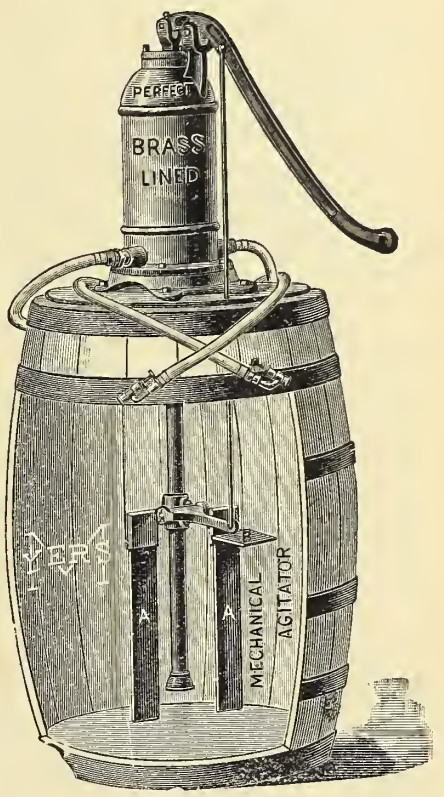
Spraying Fruit Trees.

The question of spraying fruit trees to prevent the depredations of insect pests and fungus diseases is no longer an experiment, but a necessity.



Our readers will do well to write Wm. Stahl, Box 6, Quincy, Ill., and get his catalogue describing twenty-one styles of Spraying Outfits and full treatise on spraying the different fruit and vegetable crops, which contain much valuable information, and may be had free.

Take Off Your Hat to MYERS
Spray Pumps, Hay Tools
Stayon Hangers



Free Catalogues and Price Lists. Also get Catalogues and Price Lists of **Seeds, Puritan Chick Feed, Chamberlin's Chick Feed, Black Death for Bugs,** etc.

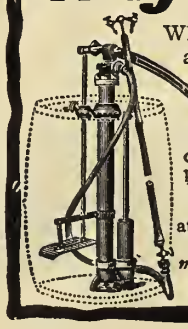
Chesmore-Eastlake Mer. Co.
ST. JOSEPH, MO.

Hurst's *Field & Orchard* Sprayer

SPRAYS EVERYTHING—Trees, potatoes, (4 rows at a time), tobacco, cabbage, strawberries and currants, whole fields and orchards, or small patches equally well. Pays itself first season. Big money for the man who secures this agency. County agents controlling terry. make $15.00 to $25.00 PER DAY. First order each locality (where no agent) secures dealer's price and agency, or will ship TEN DAYS FREE TRIAL at regular price. Write TODAY. Adv. won't appear again. All kinds Spray Pumps. Catalogue D describes.

H. L. Hurst Mfg. Co. Dept D. Canton O.

Why Not Get the Best?



When you buy a Spray Pump look for good, durable qualities as well as efficiency of action. You find both very happily combined in

The Eclipse Sprayer.

As practical fruit growers we were using the common sprayers in our orchards—found their defects and then invented *The Eclipse.* It's success practically forced us to manufacturing on a large scale. You take no chances. We have done all the experimenting.

THE ECLIPSE is always at the top in public tests. It is a favorite at Government and State Experimental Stations, and with practical growers.

☞ *Our new Catalogue, larger and finer than ever, full of the most helpful matter, is ready and we will gladly send it FREE.*

MORRILL & MORLEY, Benton Harbor, Michigan.

Fruit Prospects

Fruit Prospects on April 5, 1904.

Herewith the Fruit-Grower presents reports from correspondents showing condition of fruit trees and plants and fruit buds on April 5. It will be noted that prospects generally are unusually good for a crop of all kinds of fruit this year. Peaches have been killed over a wide range of territory. In the states east of the Mississippi River they appear to have been worse damaged than in states of the same latitude west of the river. Cherries are also reported as not being in good condition in many localities. This is doubtless due not so much to the cold winter, as it is to the cherry leaf spot disease, which was so prevalent last season. Trees which had badly affected foliage shed their leaves early and the trees are in weakened condition as a consequence.

Blackberries and raspberries are reported damaged in some parts of Missouri by the winter, and in other localities there are complaints that strawberries were somewhat injured by the dry weather last fall.

These reports of damage, except in the case of peaches, are only local, however, and prospects generally are very bright. Nearly every section reports prospects for apples as being good—indeed, a number of Western correspondents say that prospects for an apple crop have not been so good since the heavy crp of 1897. Fruit-growers everywhere feel encouraged, and at this time the outlook is decidedly full of hope.

Since these reports were submitted a snow storm visited the states of the Mississippi Valley, but it is not believed that fruits were injured. The snowfall was heavy, but the temperature barely reached freezing in North Missouri, and no damage occurred. Farther north the weather was colder, but buds were not so much swollen.

Summary of reports follow:

Gadsden, Ala.—Prospects are very flattering for all kinds of fruit. Peach trees have just passed a good blooming season, weather having been fair and warm. In Northern Georgia, 40 to 100 miles from here, prospects for peaches are excellent. My orchard is no high elevation, and I have shipped peaches to Buffalo, which were put in cold storage, and marketed 23 days after they were picked from the trees and were in fine condition when sold. —C. W. E.

Bentonville, Ark.—Increased acreage of strawberries here, with prospects for a good crop. Other small fruits also promise well. Ben Davis apples promise, from setting of buds, 60 per cent of crop; other varieties full, and buds are in good condition. Peaches are out of bloom and will be a light crop. Cherries are in full bloom and promise full crop. Some pears have been killed, but there are enough blooms left to make a crop. Grapes have started to grow. Elberta peaches were mostly killed in January, but some were killed in March.—I B. L

Mountain Home, Ark.—Peach trees in full bloom, also plum trees. Apples promise full crop, and so do small fruits of all kinds. This is a great fruit country, and people are beginning to find out this fact.—C. A. J.

Springdale, Ark.—Acreage of strawberries exceeds 1,500 acres, and prospects for fair crop. We want 10,000 berry pickers to handle the crop. Other small fruits promise well. Ben Davis bloom is short, promising three-fourths of a crop; other varieties promise full crop. Nearly all Elberta peaches killed; other varieties promise half crop. Cherries in fair condition. Duchess pears are three-fourths killed, and half the Kieffer buds. Grapes are generally in good condition.—R. I. J.

Gravette, Ark.—Prospects for strawberries good. Other small fruits also promise well. Apple trees in bloom, with full set of bloom. Peaches did not set well on trees. Cherries promise good crop, pears short, grapes good. Altogether the outlook for fruit is good.—P. A. R.

Canon City, Colo.—Fine prospects for strawberries, and also for other small fruits. Apple trees very full of fruit buds, which are all right as yet. Peaches, cherries, pears and grapes are all right. Season is two weeks earlier than usual, and damage from late frosts is feared.—J. W. W.

Alton, Ill.—Increased acreage of strawberries, and prospects for good crop. Other small fruits are also all right. Apple trees are well set with fruit buds, and buds are in good condition. Peaches are about three-fourths dead, and are worse killed away from the river. Cherries, pears and grapes all promise well.—E. A. R.

Clayton, Ill.—Prospects for good crop of strawberries. Other small fruits only fair. Apple trees have light set of buds in tops of trees, but buds are all in good condition. Peaches are all killed, and half the cherries. Pears promise well, but grapes were winter-killed somewhat.

Paris, Ill.—Peaches are badly injured, except on seedlings, which, in some cases, promise a fair crop. All other fruits promise well, as trees and buds went into winter in good condition, and the continued cold weather prevented the premature starting of buds.—D. R.

Quincy, Ill.—Prospects for an excellent strawberry crop, but other small fruits promise light yield. Apple trees are well set with fruit buds, which are very late in developing. Peaches all killed. Cherries promise poor crop. Pears are all right, and are developing nicely. Season is backward, but we look for an excellent crop of apples, pears and strawberries.—C. H. W.

Mt. Pulaski, Ill.—Fair prospects for strawberries. Raspberries and blackberries in good condition. Apple trees have a god set of fruit buds, which are in good condition at present. No peaches. Cherries and pears are well set with fruit buds, have stood the winter well, and prospects are good for a crop. Grapes are also in good shape. Season is about three weeks late, and fruit buds are mostly in dormant condition at the present time.—C. Bros.

Savoy, Ill. — Good prspects for strawberries. Apple trees well set with buds, which appear healthy and in good condition. Peaches dead.—R. L. D.

Hamilton, Ill.—Strawberries in good condition, as are other small fruits. Apple trees have plenty of fruit buds, which are in good condition. Peach buds dead. Cherries, pears, grapes look all right—in fact, prspects are good for all fruits except peaches.—H. D. B.

Kinmundy, Ill.—Strawberry acreage small, with good prospects for fruit. Appies promise well. Peaches mostly killed, but cherries, pears, grapes, etc., are in good condition.—A. V. S.

Centralia, Ill.—Excellent prospects for strawberries and all other small fruits. Apple buds are plentiful and seem strong and vigorous. Peaches mostly killed. Cherries are all right, as are pears, except that Keiffer seem to be in danger. Season is very wet and backward.—W. S. P.

Des Moines, Iowa—A summary of the reports on April 1st show the condition of fruit trees and plants to be as follows: Apples 84 per cent; pears 80 per cent; American plums, 93 per cent; European plums 75 per cent; Japanese plums 80 per cent; cherries 66 per cent; peaches 34 per cent; grapes (not covered), 75 per cent; red raspberries 61 per cent; black raspberries, 67 per cent; blackberries 75 per cent and strawberries 82 per cent. Peach buds in tthe Eastern part of the state are badly injured; in the Western part they are in better condition. Late varieties of cherries that were defoliated last summer by leaf-spot are in feeble condition. Raspberry canes have suffered in the North-central part of the state from dry. cold weather and lack of snow covering. Strawberry plants that were not covered are in a somewhat damaged condition this spring. On the whole the outlook for a crop of fruit in this state is encouraging should normal climatic conditions prevail during the fruiting season.—W. G.

Villisca, Iowa—Larger acreage of strawberries than usual, with good prspects for crop. Other small fruits promise fair crop. Apple trees well set with buds, which are in god condition. Peaches are almost all killed. Some Russian cherries are badly killed, but Early Richmond are all right. —H. S. A.

Leavenworth, Kan.—Prospects very good for strawberry crop. Other small fruits also promise well. Apple trees have good set of fruit buds, which are healthy, plump and fine. Budded peaches promise one-third crop, seedlings full. Cherries, pears, grapes, etc., are in good condition for full crop. The general prospects for an all-round fruit crop have not been so good since 1897.—E. J. H.

Atchison, Kan.—Average acreage of strawberries, with fine prospects for fruit. Other small fruits seem to be in full fruiting vigor. Prospects for apple crop are good, as are most other fruits, except peaches.—O. H. P.

Wathena, Kan.—Fine prospects for strawberries and other small fruits. Apple trees well set with fruit buds, in most excellent condition. Peaches promise fair crop only, but cherries, pears and grapes promise excellent yields. Green lice are at work on apple, but usually do little damage.—J. B., Jr.

Rosedale, Kan.—Prospects good for strawberry crop, and very good for other small fruits. Apple trees very well set with fruit buds in splendid condition. Peaches promise fair crop. Cherries are injured to some extent, but not seriously. Pears will have an abundance of bloom, and grapes could not be better. I think the outlook for a fruit crop was never better than at present.—F. H.

Holton, Kan.—Prospects for full crop of strawberries, and 50 per cent crop of other small fruits. Apple trees in good condition, with full setting of fruit buds. Peaches promise 5 to 75 per cent of crop. Cherries, 75 per cent, and grapes full crop. It is early, of course, but trees will be full of bloom.—F. W. D.

Winfield, Kan.—Japan plums and tender varieties of peaches are all killed here, especially Elberta. Everything else seems to be al right so far. Cherries and pears are blooming at least tw weeks earlier than usual.—J. W. N.

Topeka, Kan.—Strawberries promise good crop over the state, but raspberries have been somewhat injured by anthracnose. Apples generally promise good crop. Peaches vary throughout the state. Pears, cherries and grapes are all right everywhere.—W. H. B.

Troy, Kan.—Good prospects for strawberry crop. Other small fruits

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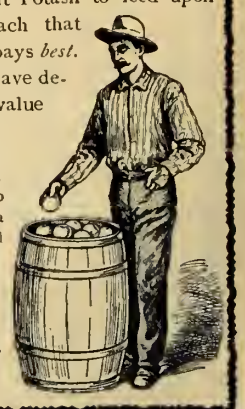

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also promise well. Apple trees are full of fruit buds, which seem large and strong. Most of the budded peaches are killed. Cherries are full of fruit buds and look promising. Prospects for pears poor; for grapes good. Apple trees went into winter in good condition, with the wood well matured, and indications point to a good crop at this time.—M. J. R.

Niagara, Ky.—We have had excessive rains. Fruit is not hurt up to present time, and prospects indicate a god crop.—F. Y. H.

Shreveport, La.—Prospects so far indicate a heavy crop of all kinds of fruit, especially peaches and pears. This is a fine country for peaches.—A. S. R.

Kansas City, Mo. — Strawberries promise full crop. Raspberries promise light crop, blackberries full. Apple trees are well set with fruit buds, which are in perfect condition. Enough live peach buds for good half crop, except Elbertas, which promise one-third crop. Cherries, grapes and pears are all right.—L. A. G.

Odessa, Mo.—Prospects at the present time are for full crop of apples here and at least half a crop of peaches.—E. H. P.

Columbia, Mo.—Reports from various parts of the state indicate that there will be a fair crop of peaches in most of the extreme southern counties, and there will be a fair crop of seedlings in some localities in the central and northern sections. The outlook for other fruits is generally promising in all sections. It was at first feared that the storm of the 8th and 9th had injured fruit in the southern counties, but later reports indicate that this was not so.

Marionville, Mo.—Acreage in strawberries, 800 to 1,00 0acres, and growers claim prospects are for 65 to 100 per cent of crop. Other small fruits up to the average. Apple trees very full of buds, and condition of buds is excellent. Only the hardy peaches promise fruit. Cherries promise some less than average crop, and pears are poor.—W. T. F. (Later—April 9.—In the midst of a cold wave, which was accompanied by high west wind and nearly two inches of snow. Temperature, 32 degrees. Cold not increasing and with no lower temperature no damage is anticipated.—W. T. F.

Neosho, Mo.—Strawberries promise full crop, with 650 acres fruiting. Dewberries also promise fine crop. Most varieties of apples are full of buds, in good condition, but Ben Davis promises probably the poorest yield. Peaches are practically all killed. Cherries promise fair crop, and grapes full.—F. H. S.

Sarcoxie, Mo.—Strawberries promise 75 per cent of crop, other small fruits 80 per cent. Apple trees are well set with fruit buds, in good condition. Elberta peaches promise 1 per cent of crop, some varieties 25 per cent, with an average of all about 5 per cent of crop, but seedlings seem to be all right. Cherries promise 90 per cent of crop, pears 65 per cent. Cannot tell what will be the effects of the storm of 8th and 9th, but it was as bad as appearances indicated. —D. McN.

Lebanon, Mo.—Strawberries promise good crop, as do other small fruits. Apple trees well set with fruit buds, in good condition. Early peaches killed, one-fourth crop of later sorts. Cherries, pears and grapes promise good crops.—A. T. N.

Lee's Summit, Mo.—Good prospects for strawberry crop. All other small fruits in same condition. Apple trees well set with fruit buds, in good condition. Large per cent of peaches are killed, but cherries, pears and grapes are all right so far. —J. S. B.

Oregon, Mo.—Strawberries, 100 per cent of crop; other small fruits 90 per cent. Apple buds are in good condition, with a good set on trees. Peaches are badly killed. Some damage to cherries, pears and grapes, the prospects being for 90, 80 and 75 per cetn of crops, respectively. The peach prospect is about equal to that of last year.—N. F. M.

Jefferson City, Mo.—Peaches about all killed here. Prospects for apples, cherries, etc., are good.—C. P.

LaPlata, Mo.—Peaches nearly all killed, except perhaps a few in favored localities. Cherries three-fourths killed, pears and plums all right. Apples promise good crop at this time. Small fruits generally in good condition, except some tender sorts of bush fruits, such as Early Harvest blackberry.—J. E. M.

Montevallo, Mo.—Prospects at this time are for good crop of peaches, pears, plums, cherries, grapes, raspberries and blackberries, and I never saw the prospect better for apples and strawberries. Elberta and some other tender varieties of peaches were killed in bud, but the storm of the 8th and 9th did not injure fruits.—J. F.

Amherst, Mass. — Strawberries in first-class condition; other small fruits only fair. Apple trees are well set with fruit buds, in good condition. Peaches all frozen. Sour cherries are all right. Pears and grapes are only fair to good.—F. A. W.

Watervliet, Mich.—Apple trees well set with fruit buds, which are in good condition. About 85 per cent of peach buds killed. Pears, cherries and grapes are in good cndition.—R. H. S.

Allegan Co., Mich.—Our Michigan orchards never had so good an outlook for fruit as this year, and if nothing happens from now on we will have a bumper crop. The winter has been a hard one, but the heavy snows have protected fruits.—J. L. B.

Tupelo, Miss.—Prospects are bright for all fruits. Our Elberta peaches escaped the cold wave and frosts, and we are very much encouraged at the outlook.—G. H. H.

Guntown, Miss.—Temperature suddenly fell on April 4 from 62 to 28 degrees. Japan plums were in full bloom and have been badly injured, if not wholly destroyed. Peaches, in which the red of the blooms were showing, and others almost open, seem to have escaped injury. Buds and blooms now indicate a large crop of all fruits.—G. T. H.

Crete, Neb.—Good prospects for strawberries and other small fruits. Apple trees very full of buds, which were never in better condition. Wright peach safe, others damaged; in our branch orchards in western Nebraska peaches are all right. Pears, cherries and grapes promise well. Peaches injured in southeastern Nebraska, where warm weather in January expanded the buds. Average prospects for fruit are better than usual.—E. F. S.

Tecumseh, Neb.—Fair prospect for strawberry crop; other small fruits promise well. Apple trees well set with fruit buds, in fair condition. Seedling peaches full, budded sorts promise about half crop. Cherries fair, grapes all right. Pears blighted badly last season. If no late frost occurs, we are booked for large crops of fruit.—W. G. S.

Grafton, Neb.—Peach buds are about all killed here, but all other fruits are in good condition and promise well.—A. F. G.

Delaware, Ohio.—Large acreage of strawberries, in good condition. Other small fruits are all right. Everything looks favorable for apple crop, with trees well set with buds, in fine condition. Peach buds all killed, and I fear trees are badly injured. Cherries are also nearly all killed. Kieffer pears are all right, others seriously injured. Grapes seem all right. Coldest weather 22 degrees below zero; ground frozen all winter, and buds are late coming out.—F. P. V.

Rockwood, Ohio.—Prospects for good crop of strawberries, other small fruits fair. Good set of apple buds, which are in good condition. Peach buds all alive, a few cherries dead, and pears were somewhat injured by frost on the 4th of April.—U. T. C.

Cereal, Okla.—Most peaches, apricots and plums killed. Pears, cherries and apples from 10 to 70 per cent killed, according to varieties. Berries and grapes are all right.—F. F. F.

Yukon, Okla.—Some damage to apples by frost on night of March 26, but fair crop is setting. Peaching killed by frost on date mentioned, and about half of cherry crop was killed at same time, and some injury to pears. All fruit was remarkably forward and was caught by cold snap on March 26. —A. S. P.

Forest Grove, Ore.—Prospects are splendid for all kinds of fruit. We have had plenty of rain, and buds have kept dormant. If rains do not continue during the blooming season we will certainly have a fine crop, and want to show at the St. Louis Exposition fruits which will prove to all visitors that the West can grow choicest fruits.—W. R. H.

Hanover, Pa. — Early and Late Crawford peaches are all frozen. Apples, cherries, apricots, plums and pears are all right, and from present appearance will produce a full crop. I examined peaches in Maryland, just south of Mason & Dixon's line, and found very few killed.—O. F. E.

North East, Pa.—Good prospects for small fruits. Peaches are in very bad way, cherries promise fairly good crop, and pears and grapes excellent. —A. I. L.

Rhea Springs, Tenn.—Prospects are now very flattering for a fruit crop.—W. S. S.

Palo Pinto, Texas.—On the night of 3d of March we had a heavy frost, the mercury falling to 18 degrees. Apricots, peaches, etc., were out in bloom, as were Leconte and Kieffer pears, and nearly all were killed. Of the plums, some varieties were badly killed, while others escaped unhurt.—F. W. B.

Colley, Va.—This promises to be a good fruit year for this section. Peaches and plums beginning to bloom with practically all buds alive. Bloom is heavier than for years.—M. C. S.

North Yakima, Wash.—Spring is late, but fruits have not been injured by the freezing of the winter, and prospects for a heavy yield of all kinds of fruits were never better.—T. W. C.

Marietta, Ga.—The peach crop in northern Georgia the coming season will be a bumper, unless injured after this date. Not only peaches, but all other fruits promise well. Peaches are now passing bloom (March 31), with ideal weather, and everyone is rejoicing. Large acreage of peaches here.—F. J. P.

Vincennes, Ind.—Good prospect for strawberries. Raspberries and blackberries hurt somewhat. Fruit buds plentiful on apple, and they are in first-class condition. Peach buds mostly killed, except on high locations. Pears are too full of fruit buds. Cherries partially killed. Spring has been excessively wet; over six inches of rain in one day of March.—H. M. S.

Prize for Best Gardens.

Fruit-Grower readers should not forget that we will give a prize for the best story of a garden for 1904, the same to be submitted sometime after the end of the season. It will be necessary, in order to have a good account of your gardening operations, to begin early to keep account of everything which is planted and harvested from the garden. Then, if some good photographs can be secured of the garden at different stages, it will be all the better. The Fruit-Grower will issue a special gardening number next spring, and the stories of the gardening operations for 1904 will make up some of the features of that number. The garden does not need to be a large one—the prize will be awarded to the person who, under the conditions with which he is confronted, has the best garden, and who is able to tell how the work was done.

There are some good gardeners among our readers—men and women —and we want to hear from them. Keep a careful record of your work, and report later.

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Fertilization of Blossoms

Every reader of the Fruit-Grower knows that the blossoms of plants must be fertilized, but not everyone knows just the process which is necessary in this change. A year ago Prof. Howard Dean of Park College, Parkville, Mo., read a paper on this subject before the Missouri Valley Horticultural Society, and at our request he has prepared the following article for the Fruit-Grower, which will explain the process of fertilization of plants, and how the pollen is transferred from one plant to another of like species. As blossoming time approaches, one can watch this wonder-

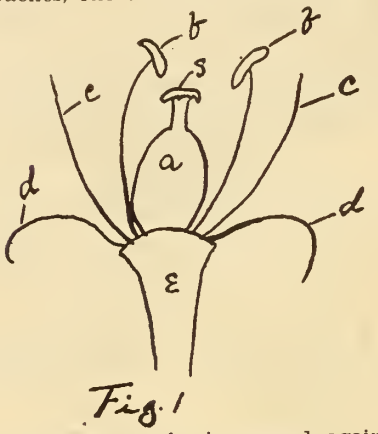


Fig. 1

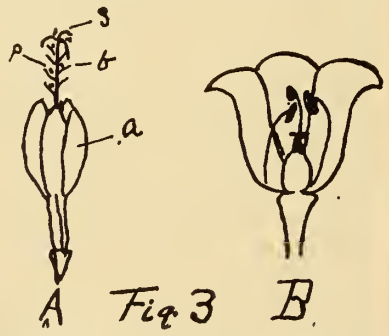
ful process, and be impressed again with the wondrous ways of Nature. Prof. Dean's paper follows:

The phenomenon of cross fertilization brings to light one of the most vital principles of plant development and propagation. Until within a comparatively recent time plants were supposed to fertilize themselves; and fertilization from another source was thought exceptional. But since the investigations of Darwin and other scientists this supposition has beeen reversed. As we look at it now cross-fertilization seems rather to be the rule and self-fertilization the exception. In a great many instances cross-fertilization is essential. Just as any kind of stock will, if not properly cross-bred, degenerate to the condition of the runt, so plants will become worthless. If it were not for the natural means of keeping up this cross-fertilization even the stately weeds along the roadside would, doubtless, soon degenerate into insignificance.

In order to get at the subject more clearly we must begin with a little elementary botany. The typical flower is made up of four concentric whorls or plants, and so far as it will be needful to consider these parts, what will be said of them will apply to any flower whatever. Figure 1 represents by diagram the typical flower—e is simply the stem or receptable; d the calyx made up of sepals, which fold over and protect the bud; c is the corolla made up of petals, which to the casual observer add beauty to the flower, though they have another purpose; b is the stamen made up of filament and anther, the latter holding the pollen; a is the pistil, composed of an ovary, which holds the ovule or seed, and the stigma, s, which receives the pollen from b. The essential parts of the flower are the stamens and pistil. But while they are essential we must not lose sight of the importance of the other parts. It is quite plain that every part of the plant anatomy, every function of its organism bends its energy toward that one great aim of plant existence: The reproduction of its kind. One can scarcely help being convinced of this fact when he has carefully studied the structure of almost any plant and has closely observed its development.

The process of reproduction is concerned chiefly with two steps, namely pollenization and fertilization. The process of pollination consists of the transfer of the pollen from the anther where it is formed to the stigma where it is effective in fertilizing the ova or seeds. The nature of the pollen varies according to the method by which it is carried to the stigma. It is sometimes very dry and dust like, as in walnut and pine trees, as well as many of the weeds and flowers. In other cases it is very sticky, so that it really clings together and adheres to anything with which it may come in contact. Such is found in the yucca and evening primrose. Still other forms are provided with spines, wings, groves or hair-like developments which serve to aid in their transportation. Figure 2 will give an idea of how some of these pollen grains look when highly magnified. These pollen grains are very small, as one may readily judge when he passes through a corn field or a patch of weeds in bloom and notices the fine dust that is deposited on his clothing or sees the ground yellowed by the fallen pollen grains. The number of these grains, in different flowers, varies from a few hundred to hundreds of thousands.

There are a number of ways in which this pollen is transferred from the anther to the stigma. First there is the natural arrangement of the parts of the flower, which would make it easy for the pollen to fall onto the stigma. This is found where self-



A Fig 3 B

fertilization is quite evident. The wind acts as an agent for transferring pollen in a great many cases. The plants that make use of this method are those which have the stamens and pistils in separate flowers, as a rule, such as pines, walnuts, hickory nuts. Water acts as an agent in the case of a great many aquatic plants. This seems a little contradictory since it takes but a very little moisture to cause the pollen grains to swell up and burst, thus becoming worthless by losing their contents. But here the pollen is usually incased in little capsules which serve as boats to float it about on the surface of the water till it comes in contact with a stigma. The agent which pollenizes the greatest number of plants is no doubt the animals, especially insects and birds.

In the self-fertilized plants the position of the stigma is often such that in growing out to its full length it tears through the anthers, thus breaking them open and dragging the pollen out with it. This is shown nicely in such an arrangement as is seen in the dandellon (see A Fig. 3). Here the stigma, s, is provided with barbs. The anthers are in the form of

Fig. 2

POLLEN GRAINS HIGHLY MAGNIFIED.

1. Pollen from Spring-Beauty; 2, pollen from Sweet Williams; 3, pollen from Pine; 4, pollen from Pumpkin; 5, pollen from Evening Primrose; 6, pollen from Walnut; 7, pollen from Amaryllis.

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a sheath, a, and as the stigma passes up through them the barbs, b, break them open and carry out the pollen, p. It may then be carried away to other stigmas by insects or it is in position to fertilize the plant where it is. B, Fig. 3, shows another arrangement which would facilitate self-fertilization. Here the pollen would only have to fall out onto the stigma.

In the case of wind pollenized plants there is, as a rule, a great amount of dry, dusty pollen. Anyone taking notice of a pine, hickory, oak or walnut tree about the first of May will be apt to see clouds of the pollen as it is shaken out and borne away by the breeze. The flowers of such plants are usually very simple and unattractive. The pollen apparently

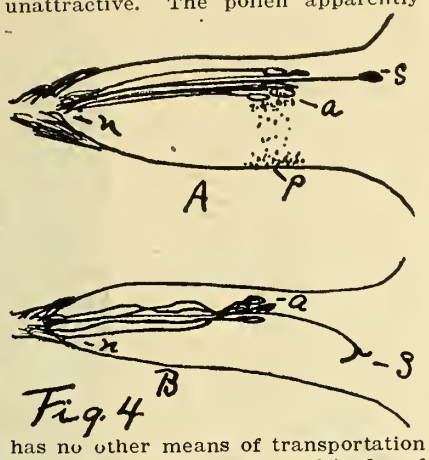

Fig. 4

has no other means of transportation than the wind and great multitudes of these grains fall to the ground and perish without ever coming in contact with a stigma. The stigmas of these plants are generally plumed or feathery and covered with a sticky substance. Thus their chances of catching the flying grains of pollen are greatly increased.

In the case of the flowers that are pollenized by insects we see perhaps the most wonderful mechanisms for carrying out the great scheme of plant life. The flowers here have a sort of commercial system, as it were. They trade but run no bargain counter. When the insect or bird creeps into their depth in search of the drop of nectar secreted there, flowers are usually so arranged that in going in or coming out he comes in contact with the stigma, at the same time he is well sprinkled with pollen. Then when he flies to another flower of the same species, being compelled to go through the same thing, he is very liable to rub the pollen of the first flower on the stigma of the second, and so on. Here also there must be an abundance of pollen produced, for a great many insects eat it. The honey bee carries it away to his hive where he stores it in the form of bee bread. So the plant must frequently give pollen in exchange for the services of the insect.

The structure and movements of flowers surely confirm the theory of cross-fertilization and present an interesting field for study and investigation. In the first place, the color of the flower is usually that which will make it most conspicuous in its surroundings. And where flowers are small they are quite frequently clustered in such a way that they may be seen at a distance. Many of those flowers that are not attractive have no need of insects. The odor is evidently a means of attracting insects. This is strikingly shown in the black California lily, which is pollenized by blow flies and has the odor of decayed meat. The florist, having cultivated with a view to heighten color and increase odor, may count himself successful when his friends admire the results of his work. The flower, if it could, would rejoice that its attractiveness for its friends the insects had been increased and its chance of receiving the proper pollen made more nearly certain.

The nectar glands are as a rule situated at the base of the petals or even deeper in the flower. This makes it necessary for the insect entering to come in contact with the stigma and pollen. Another significant fact is that the stigma and anthers are not always developed or ripe at the same time in the same flower. An excellent illustration of this is found in the red trumpet creeper. These flowers come in clusters in which may be found pods, falling blossoms, full bloom and buds all at the same time. When a blossom first reaches maturity the stigmas and anthers are in position as shown in diagram A, Fig. 4. The anthers ripen first and begin to shed their pollen which falls in a heap on the lower side of the corolla tube. The blossom has already taken a nearly horizontal position and begins to secrete nectar at n, the inner end of the tube. If an insect or humming bird should enter the flower just at this time he would be plentifully sprinkled with pollen as he passed under the anthers. But he does not necessarily come in contact with the stigma. After the anthers have shed all their pollen they shrivel up as shown in B, Fig. 4. Now at this stage the stigma, s, bends down so that an insect or humming bird on entering the tube must rub against it and besmear it with the pollen which he would bring from a flower in the condition of A. The flower continues to secrete nectar at n until the stigma, s, has been properly pollenized. Then the secreting of nectar soon ceases, the corolla tube falls off and the pod begins to make a rapid growth. Thus the pollen of the first flower may be entirely wasted and the stigma of the last flower may not be pollenized. But it is hardly probable that any one flower is fertilized by its own pollen.

The pea family presents another peculiar arrangement which is worth noticing in this connection. Fig. 5 A represents one of the blossoms. A bee in order to get at the nectar located at n must alight on the keel, k, and push his proboscis under the vexillum, v. In doing this he pushes down k and w, causing the stigma and anthers, which are concealed at s, as shown in B, to be pushed out as in C, thus making them rub against his breast. Then if the anthers be ripe at this time he is loaded with pollen. If, on the other hand, the stigma is ripe it is quite likely that the bee will leave on it the pollen which he has brought from some other flower. Nearly every flower has some special arrangement as striking as the above. But the relations sustained between flowers and insects are not always amicable. There are some insects, like some people, who are not willing to give value received. So taking advantage of their hard jaws and the delicate flower walls they bite through the corolla and take the nectar without rendering any service in return.

Many flowers, especially those pollenized by moths, close up during the time that the insects which visit them are not out. It is also supposed that the odors and flavors of many flowers serve as a guard, against insects that otherwise might rob them without rendering any service. On the other hand there are instances where insects seem to intentionally deposit the pollen on the stigma. An illustration of such is the case of the yucca and the yucca moth. When the yucca begins to bloom the moth emerges from its chrysalis and begins its work. First

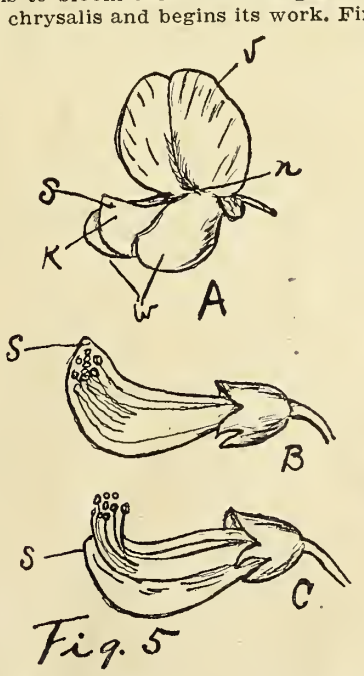

Fig. 5

it lays an egg in the ovary of the yucca. Then it proceeds to gather up the sticky pollen, which otherwise could not easily reach the stigma. This pollen it stuffs into the stigma, thereby insuring fertilization. The egg hatches after a short time and the larva lives on the young seeds of the yucca. He eats about a third of them before he reaches maturity. When he becomes a full grown larva he perforates the wall of the seed pod, crawls out, swings himself to the ground and there goes into the chrysalis state to sleep till the yucca bloom again, when he emerges as a moth and proceeds to go through the same perform-

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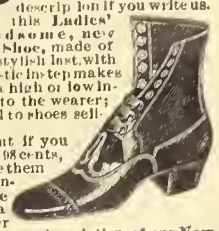

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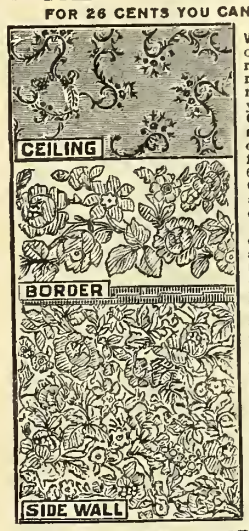

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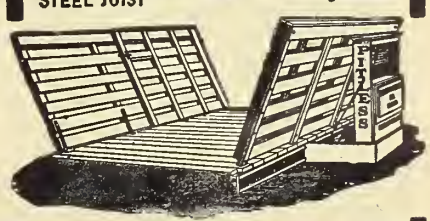

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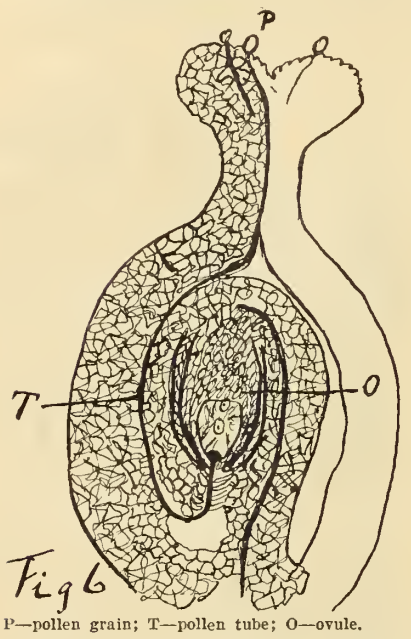
The A. I. Root Co. Medina, O.

ance as his ancestor. If one should examine the seed pod of the yucca about the first of August he will find them containing a great many holes where these larvae have crawled out.

So much for pollenization. When these pollen grains adhere to the stigma a peculiar change begins to take place. In some cases within an hour or two little tubes begin to form on the pollen grain and to sink into the stigma in the direction of the ovules. Fig. 6, taken from Gray's Structural Botany, represents the formation of these pollen tubes. Each grain sends out a tube and it requires a grain for each ovule. When this tube reaches the ovule the contents, a granular, protoplasmic substance, is discharged into it. Then the fruit and ovule both begin to grow very rapidly.

It is quite evident that an insect traveling from flower to flower car-



P—pollen grain; T—pollen tube; O—ovule.

ries with him a great variety of pollen and may deposit a number of different kinds on any one stigma. But it seems that it is only pollen of a certain kind that is effective. However, the pollen of like species may be effective, as is shown by the fact that different kinds of corn readily mix. Seedling apples, peaches and pears and many other fruits are to a large extent other varieties than the one from which they grow. Hence the new varieties, when cross-fertilization takes place, between two plants of the same species, it is likely to result in the production of a healthier and better developed fruit. When between two unlike species the result will be an hybrid with different qualities which may be developed into a choice new variety.

When the fertilization of the ovules is complete a great change comes over the plant. The color of the blossom, once so attractive and beautiful, soon begins to fade; the odor disappears, the nectaries dry up and the flower withers up and falls off. The fruit is now the all important factor. The life of the plant is now concentrated on its development. The important part of this fruit from a botanical standpoint is the seed. The horticulturist develops a shapely, richly colored, delicately flavored apple. The plant has failed of its mission as a part of the vegetable world if it has not also developed in the center of that apple a goodly number of perfect seeds, each capable of sprouting into a new plant when circumstances permit. Before those seeds are fully developed the apple, peach, pear, plum or any fruit is hidden to more or less extent among the foliage. But when the development nears completion then they put on their gayest dress and are exposed to plain view. Thus they seem to welcome whoever would tear their flesh away and cast the precious seeds, the culmination of the plant's existence, far and wide. The berry puts on its brightest hue that the passing bird may see, partake and cast its seed on a distant hill where it may spring up and start its kind. The dandelion spreads his heavy parachute to the breeze, that other parts may be beautiful with his rich yellow. The cockle-burr and stick-tight develop their tenacious claws that they, too, may replenish the earth.

Verily "God's Out-of-Doors" is wonderful. And while to the skilled botanist or horticulturist the above remarks may be most conspicuous for the gaps that might have been filled in with interesting detail, it is the hope of the writer that they may contribute in some part, at least, to the interest and zeal with which he who reads may take up his work among the wonderful forces of Nature.

HOWARD A. DEAN.

Park College, Parkville, Mo.

"Keep Your Strawberries Checked"

Strawberries need a "check" occasionally, as does most other good things. The pickers also need a "check" on them to make them good. We use a paper check with squares to be punched out. Even planting in "check" rows insures better cultivation, and last but not least your "check" on the bank will be good if all the minor checks have been looked after.

In the first place strawberries need to be checked to keep them from becoming exhausted. There are several ways of doing this. There have been many new and promising varieties, but they most of them soon drop out of sight. Why? Because they were not handled properly and were allowed to run out. Too often the pollen is not restricted, which is very important. When a young strawberry plant of the preceding year's growth is reset in the spring it has all its fruit buds folded up in the crown ready to open up on the first warm days of spring.

If this plant is dug up and transplanted under unfavorable conditions or shipped across the United States to be set again, it needs all its energy to carry it through. These plants, if set, will linger along if the conditions are not favorable until it gets rooted, then blossoms will appear in large clusters. Is it right to let these blossoms remain? No! The plants have not had a chance to develop their root systems enough to maintain the plants and mature the berries without weakening themselves to such an extent that it would at least be worthless as a plant to propagate from. We should be very careful as to that and restrict blossom bearing.

If your plants are well rooted and vigorous, two or three blossoms could be left to determine the character of the fruit, but the bulk of the blossoms should always be pinched off the first year the plants are set as soon as they appear and even before they open is best, or before the pollen has been secreted. Here is where there is a big chance to increase or diminish the size of your bank check, and a point that too many scoff at. In other words check your blossom bearing. What does that mean? It means the plants have all the strength thrown back to them that otherwise would have gone into the berries. What is it we are after? A few sandy berries the first year you set your plants and perhaps none the second year, or is it the future we are looking after?

If plants are allowed to get well established, they will send out good, strong runners which also will bear the following year or following two or three years if properly treated. Here is where success or failure comes. A great many spoil their plants by letting them produce the first year, as they cannot wait one year for fruit.

Some varieties of strawberries as "Senator Dunlap," are liable to exhaust themselves by sending out large numbers of runners and these in turn must be "checked."

The first runners which appear should be layered by hand in such a manner as to fill the spaces between the plants in the row as evenly as possible. These in turn will send out a new batch of runners, and so on and here is where your check machine comes in. There are many ways of clipping off runners, which is a very important step, and often overlooked. When plants are allowed to mat too thickly they cannot produce the crop of berries a patch of restricted plants will. In case of a drought the thinner the plants the better. Some use the hill culture and clip all runners from plants, which throws all the energy into the old plant, which will stool out to an immense size on rich ground. We have tried several ways, but like the hedge row system as well as any, which consists of a continuous row of plants from 6 to 8 inches apart, the rows ranging from 3 to 3 1-2 feet apart. All other plants are kept clipped off by the runner cutter attachment which we use on our Planet Junior 12-tooth cultivators with pulverizer attachment. The runner cutter attachment consists of a sharp steel disc with leaf protector attachment, and is fastened to the side of the cultivattor to suit any width row, and is used while cultivating, clipping runners from one side of row at each passage. If in a small way runners may be cut off with a sharp hoe while hoeing or attach a large, sharp butcher knife on a stick and drag along the edge of the row at an angle and clip off the runners as fast as one can walk. Do not let the plants wander over the farm, but check their wandering habits by clipping runners and keep the vitality in the remaining plants.

Our propagating beds are checked also by clipping the last runners which form in the summer, as they would be weak and at the same time weaken the parent plants. Every time a runner is checked the strength is thrown back to plants left. This insures a lot of fine mature plants, the tips being cut off and out of the way of the others. One of the most vital points is to keep the soil moisture in check or in other words to "check" the evaporation. As a rule strawberries will make a good growth in dry seasons if the moisture is only retained. This can be done by keeping the cultivators going after every rain and keep the dust blanket on the surface loose, and you are holding hundreds of barrels of water in the soil, which would otherwise evaporate.

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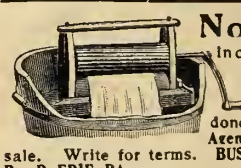

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Program for Missouri Summer Meeting.

Secretary Goodman of the Missouri State Horticultural Society has sent the Fruit-Grower an advance copy of the program of the summer meeting of the society, which will be held in the Missouri building, on the World's Fair grounds, St. Louis, June 7 to 10, inclusive. As previously announced, the society will hold a session every morning, with no afternoon or evening session. A special strawberry show will be held, with $150 awarded as special premiums for exhibits of this fruit. Concerning this strawberry show, Mr. Goodman says:

"Premiums will be awarded in our usual plan of giving a premium to every exhibit which is found worthy. That is, whatever amount is apportioned for any exhibit, will be divided among all exhibits of that class, according to their respective merits.

For boxes of largest berries $6.00
For boxes of best quality 6.00
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For boxes of the following 12 varieties there will be awarded for each 3.00

12 varieties: Aroma, Bederwood, Bubach, Crescent, Gandy, Haverland, Jesse, Parker Earle, Sample, Senator Dunlap, Splendid, Warfield.

The program for each forenoon follows:

Tuesday, June 7—Small Fruits.

"Strawberry-Growing and Cultivating in the Field," B. Logan, Logan, Mo.

"New Varieties," W. L. Howard, Columbia.

"Varieties for Home Market," J. E. May, LaPlata.

"Co-operation in Shipping and Marketing," F. H. Speakman, Neosho.

"Extent and Limits of Strawberry Interests in Missouri," D. McNallie, Sarcoxie.

"Money Side of Strawberry Growing," Arthur Bryant, Princeton, Ill.

Discussion.

General subject of "Raspberries," Henry Meyers, Bridgeton.

"Blackberries and Dewberries," Henry Schnell, Glasgow, Mo.

Appointment of committees.

Wednesday, June 8.—Orchards.

"The Business of Orcharding," by Louis Erb, Memphis, Tenn.

"Methods of Growing Orchards," T. H. Todd, New Franklin, Mo.

"Science Applied with Profit," C. H. Willlamson, Quincy, Ill.

"When Plowed Crops and When Clean Culture," Capt. G. T. Lincoln, Bentonville, Ark.

"Outlook for Commercial Orchardists in the West," W. R. Wilkinson, St. Louis.

"Spraying—Liquid," W. H. Penix, Appleton City, Mo.

Dust—Discussion.

"Troublesome Insects," Dr. J. M. Stedman, Columbia, Mo.

Thursday, June 9.—Stone Fruits and Vineyards.

"The Present and the Future Outlook for Peach Growers," Deitson Bros., Chattanooga, Tenn.

"Are there any Hardy Peaches?" Paul Evans, Mountain Grove, Mo.

"Missouri River Hills for Peach Growing," Chas. Teubner, Lexington.

"Management of the Peach in Georgia."

"Correct Handling for the Markets," Discussion.

"Best varieties for Southeastern Missouri," W. F. Hoy, Farmington.

"Cherries for North Missouri," G. R. Murray, Parkville, Mo.

"Cherries for South Missouri," J. J. McConnell, Greenfield, Mo.

"Plums."—Discussion.

Vineyards: "Growing and Training the Vines," Ed. Kemper, Herman, Mo.

"Most Profitable Table Varieties," Gco. Raupp, Webster Grove.

"New Varieties," Ralph Bush, Bushberg, Mo.

"The Care of the Fruit from Blossom to Selling," E. J. Baxter, Nauvoo, Illinois.

Friday, June 10.

"Shrubs," Dr. J. C. Whitten, Columbia.

"Herbaceous Plants," Prof. H. C. Irish, St. Louis.

"Insect Enemies of Ornamentals," Miss M. E. Murtfeldt, Kirkwood.

"Evergreens," Sid. J. Hare, Kansas City, Mo.

"City Lawn Trees," C. W. Murtfeldt, Kirkwood.

"Principles of Landscape Gardening," Miss Eda A. Sutermeister, St. Louis, Mo.

"Forest Shade Trees," N. F. Murray, Oregon, Mo.

"City Street Trees," N. J. Colman, St. Louis, Mo.

"Good Birds," Otto Widman, St. Louis, Mo.

Reports of committees.

Adjornment.

Kansas Society's Summer Meeting.

The Kansas State Horticultural Society will hold a summer meeting at Dodge City, May 11 and 12. The program shows that the subjects to be discussed are mainly forestry subjects, so that doubtless the society will endeavor to do some missionary work by holding this summer meeting in the western part of the state. The subject of irrigation will also be brought up in several papers. One of the few papers on fruit culture will be by J. H. Crowley of Rocky Ford, Colo., who will discuss "Commercial Fruit and Vegetable Growing with Irrigation." The railroads will likely give reduced rates for this meeting. Certainly they ought to encourage any movement which looks to the planting of more trees in western Kansas.

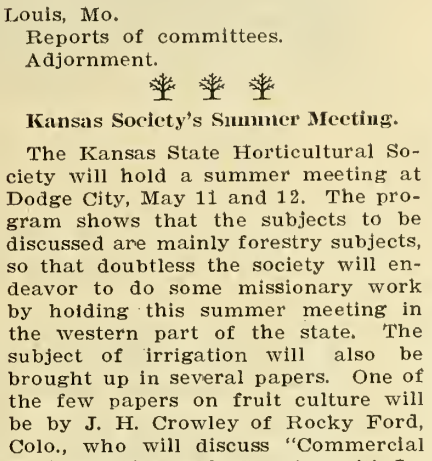
To Protect Trees from Rabbits.

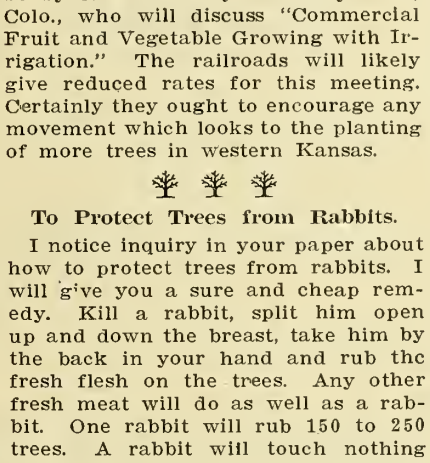
I notice inquiry in your paper about how to protect trees from rabbits. I will give you a sure and cheap remedy. Kill a rabbit, split him open up and down the breast, take him by the back in your hand and rub the fresh flesh on the trees. Any other fresh meat will do as well as a rabbit. One rabbit will rub 150 to 250 trees. A rabbit will touch nothing that has blood on it. One application will last about six weeks, sometimes longer. Try this. It is safe and sure. You may use any other fresh meeat as well as a rabbit, but I usually go rabbit hunting and kill a few of them. They don't cost anything and are generally easy to get. J. W. BRITT.

Glenmora, La.

Maher & Grosh Cutlery.

If you are in need of a good pocket knife, a good razor, or pruning shears of any kind, send to Maher & Grosh, 97 A Street, Toledo, Ohio, for a copy of their catalogue. This firm is in every way reliable, makes the very best of cutlery, and sells direct to farmers. This firm has always made a specialty of pruning knives, budding knives, etc., and supplies most of the nurserymen of the country. Send for catalogue, and when you write mention the Western Fruit-Grower.





Good Horticultural Books

For Cash or as Premiums for Fruit-Grower Subscribers

The Fruit-Grower is prepared to furnish any horticultural book published to its readers, either for cash or as premiums for new subscribers. The list published herewith comprises the best agricultural books which have been issued, and a good farm library be built up at slight expense.

The books will be sent postpaid for the prices named, or they will be sent absolutely free as premiums for new subscribers on the following basis:

Books to the value of $4.00 will be sent absolutely free for 10 new subscribers at 50 cents each.

Books to the value of $3.50 will be sent free for nine new subscribers at 50 cents each.

Books to the value of $3.00 will be sent free for eight new subscribers at 50 cents each.

Books to the value of $2.50 will be sent free for seven new subscribers at 50 cents each.

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Books to the value of $1.50 will be sent free for five new subscribers at 50 cents each.

Books to the value of $1.25 will be sent free for four new subscribers at 50 cents each.

Books to the value of $1.00 will be sent free for three new subscribers at 50 cents each.

By getting a few new subscribers to the Western Fruit-Grower one can secure the best horticultural literature published, absolutely without charge. By simply showing a copy of the Fruit-Grower to the neighbors, one can earn a number of these books as premiums in a few hours. It will be noted that the new subscriptions must be at the regular rate of 50 cents each, in every case.

Farm and Garden.

The New Rhubarb Culture—By J. E. Morse and G. B. Fiske, 50 cents.

Irrigation Farming—By Lute Wilcox, $1.50.

Mushrooms; How to Grow Them—By Wm. Falconer, $1.00.

How Crops Feed—By Prof. Samuel W. Johnson, $1.50.

Insects and Insecticides—By Prof. C. M. Weed, $1.50.

American Farm Book—By Richard L. Allen. $2.00.

Chemistry of the Farm—By Prof. R. Warrington, $1.00.

Farm Drainage—By Judge French of New Hampshire, $1.00.

Onions: How to Raise Them Profitably—By seventeen practical growers, 20 cents.

Farm Poultry—By Geo. C. Watson, $1.25.

Farm Gardening and Seed Growing—By Francis Brill, $1.00.

Success in Market Gardening—By W. W. Ransom, $1.00.

Bommer's Method of Making Manures—By Geo. Bommer, 25 cts.

Cabbage, Cauliflower and Allied Vegetables—By C. L. Allen, 50 cents.

Gardening for Old and Young—By Joseph Harris, $1.00.

How the Farm Pays—By Wm. Crozier and Peter Henderson, $2.00.

Money in the Garden—By P. T. Quinn, $1.00.

Market Gardening and Farm Notes—By Burnett Landreth, $1.00

Forest Planting—By H. Nicholas Jarchow, $1.50.

Soils and Crops of the Farm—By Geo. E. Morrow and Thomas E. Hunt, $1.00.

How to Make the Garden Pay—By T. Greiner, $2.00.

Flowers.

Greenhouse Construction—By Prof. L. R. Taft, $1.50.

Greenhouse Management—By Prof. L. R. Taft, $1.50.

Bulbs and Tuberous Rooted Plants—By C. L. Allen, $1.50.

Parsons on the Rose—By Samuel B. Parsons, $1.00.

Landscape Gardening—F. A. Waugh, 50 cents.

The Rose: Its Cultivation, Varieties, Etc.—By H. P. Ellwanger, $1.25.

The Window Flower Garden—By J. J. Heinrich, 50 cents.

Hedges, Windbreaks, Shelters and Live Fences—By E. P. Powell, 50 cts.

Practical Floriculture—By Peter Henderson, $1.50.

Ornamental Plants and How to Succeed With Them—By Lizzie F. Hillhouse, $1.00.

Horticulture.

Plums and Plum Culture—By F. A. Waugh, $1.50.

Fruit Harvesting, Storing, Marketing—By F. A. Waugh, 250 pages, $1.00.

Pear Culture for Profit—By P. T. Quinn. Illustrated. Cloth, 12mo. Price $1.00.

The Nut Culturist—By Andrew S. Fuller. A treatise on the propagation, planting and cultivation of nut-bearing trees and shrubs adapted to the climate of the United States. 12mo., cloth, $1.50.

Peach Culture—By Hon. J. Alexander Fulton. The best work on peach growing. It has been thoroughly revised and a large portion of it rewritten, bringing it down to date. Cloth, 12mo., $1.00.

Small Fruit Culturist—By Andrew S. Fuller. The book covers the whole ground of propagating small fruits, their culture, varieties, packing for market, etc. Cloth, 12mo., $1.00.

Grape Culturist—By A. S. Fuller. This is one of the very best works on the culture of the hardy grapes. Cloth, 12mo., $1.50.

Strawberry Culturist—By Andrew S. Fuller. Containing all information necessary to enable everybody to raise their own strawberries. Fully illustrated. Flexible cloth, 12mo., 25 cents.

American Fruit Culturist—By John J. Thomas. Containing practical directions for the propagation and culture of all the fruits adapted to the United States. $2.80.

Quince Culture—By W. W. Meech. An illustrated handbook for the propagation and cultivation of the quince, with descriptions of varieties, insect enemies, diseases and their remedies. New and enlarged edition. Cloth, 12mo., $1.00.

The Cider Makers' Handbook—By J. M. Trowbridge. A complete guide for the making and keeping of pure cider. Fully illustrated. Cloth, 12mo., $1.00.

The Practical Fruit Grower—By S. T. Maynard. Just what the beginner needs and the successful fruit man practices. Illustrated, cloth, 50 cents.

The Fruit Garden—By P. Barry. A standard work on fruit and fruit trees. Cloth, 12mo., $1.00.

Rural Science Series.

The Principles of Agriculture—A text-book for schools and rural societies. Edited by L. H. Bailey, with contributions from his colleagues in the Cornell University. Third edition, 300 pages, 92 illustrations, $1.25.

The Spraying of Plants—By E. G. Lodeman, late instructor in horticulture in the Cornell University. 399 pages, 92 illustrations. $1.00.

The Principles of Fruit Growing—By L. H. Bailey, professor of horticulture in the Cornell University. Third edition; 516 pages; 120 illustrations, $1.25.

Bush Fruits—A horticultural monograph of Raspberries, Blackberries, Dewberries, Currants, Gooseberries and other shrub-like fruits. By Fred W. Card, professor of horticulture in Rhode Island Agricultural College. Second edition; 537 pages; 113 illustrations. $1.50.

The Principles of Vegetable Gardening—By L. H. Bailey, Cornell University. Pages, 456; illustrations, 144. $1.25.

Garden Craft Series.

The Horticulturists' Rule Book—A Compendium of Useful Information for Fruit-Growers, Truck Gardeners, Florists and Others. By L. H. Bailey, professor of Horticulture in Cornell University. Fourth edition, 312 pages; 75 cents.

The Nursery Book—A Complete Guide to the Multiplication of Plants. By L. H. Bailey, professor of Horticulture in the Cornell University. Third edition; 565 pages; 152 illustrations. $1.00.

Plant Breeding—Being five lectures upon the Amelioration of Domestic Plants. By L. H. Bailey, professor of horticulture in the Cornell University. 293 pages; 20 illustrations. $1.00.

The Forcing Book—A Manual of the Cultivation of Vegetables in Glass Houses. By L. H. Bailey, professor of horticulture in the Cornell University. 266 pages; 88 illustrations. $1.00.

The Pruning Book—A Monograph of the Pruning and Training of Plants as Applied to American Conditions. By L. H. Bailey, professor of horticulture in Cornell University. Third edition; 545 pages; 331 illustrations. $1.50.

Garden Making—Suggestions for the Utilizing of Home Grounds. By L. H. Bailey, aided by L. R. Taft, F. A. Waugh and Ernest Walker. Fourth edition; 417 pages, 256 illustrations. $1.

The Practical Garden Book—Containing the Simplest Directions for the Growing of the Commonest Things About the House and Garden. By C. E. Hunn, gardener to the horticultural department of Cornell University, and L. H. Bailey. Second edition; 250 pages; many marginal cuts. $1.00.

Lessons With Plants—Suggestions for Seeing and Interpreting Some of the Common Forms of Vegetation. By L. H. Bailey, professor of horticulture in the Cornell University. Second edition; 491 pages; 446 illustrations; half leather; 12mo., $1.10 net.

The Survival of the Unlike—A Collection of Evolution Essays Suggested by the Study of Domestic Plants. By L. H. Bailey, professor of horticulture in the Cornell University. Third edition. 515 pages; 22 illustrations. $2.00.

The Evolution of Our Native Fruits—By L. H. Bailey, professor of horticulture in the Cornell University. 472 pages; 125 illustrations. $2.00.

The Cyclopedia of American Horticulture—By L. H. Bailey, of Cornell University, assisted by Wilhelm Miller and many expert cultivators and botanists. Four volumes; over 2,000 original engravings. Price, per volume, cloth, $5.00.

Spraying Crops: Why, When and How—By Prof. C. M. Weed, of New Hampshire Agricultural College. Divided into four parts: Spraying the Larger Fruits, Spraying Small Fruits and Nursery Stock, Spraying Shade Trees, Ornamental Plants and Flowers, Spraying Vegetables, Field Crops and Domestic Animals. Illustrated; 5x7 in.; 150 pages; cloth binding. Price, 50 cts.

Systematic Pomology—By Prof. F. A. Waugh, Massachusetts Agricultural College. A work treating of the description, nomenclature and classification of fruits. About 300 pages, 5x7 inches, bound in cloth. Price, $1.00.

American Horticultural Manual—In two parts. By Profs. J. L. Budd and N. E. Hansen. Dealing with Horticulture and Horticultural Practices in General, Propagation, Cultivation, etc.; also Descriptions of Leading Varieties of Fruits and Nuts in America. Part I contains 417 pages. Part II. 454 pages; both parts fully illustrated. Price, $1.50 per volume; $3.00 for both books.

THE FRUIT-GROWER CO., ST. JOSEPH, MISSOURI

Questions and Answers

Crown Gall Questions.—A subscriber sends the following questions, and asks that they be published in full, in the hope that they will stimulate an effort to solve some of the problems connected with the disease crown gall:

"The article in March number of the Fruit-Grower in reference to crown gall, giving results of Prof. Howard's experiments at the Missouri Experiment Station, show that from 14 to 87 per cent of the different varieties of grafted apples were affected with this gall in one season's growth after planting. The only difference shown was due to the length of root used, kind of soil, and depth at which graft was planted. The experiment also shows that the gall occurs most generally at the point of union between scion and root. And we have learned from other reliable sources that the crown gall is incurable, and when fully developed renders a tree worthless. Now, as this is a matter of vital interest to all orchardists, I would like to ask the professors, through the Fruit-Grower, to state: (1) What effect the galls have upon an apple tree; (2) If the gall is so serious as represented, and if 14 to 87 per cent of grafted stock becomes affected and eventually renders the tree worthless, why do nurserymen continue to graft nursery stock and sell it to the people? (3) Would not budding the stock prevent the gall, as there would be no wound to enlarge? (4) Are all enlargements or rough knots at or near the crown to be taken for crown gall? (5) If there is no remedy, what must we do to prevent the trouble?'

We shall be pleased to have someone answer the above questions, but we would call attention to one point, in which our reader misunderstood Prof. Howard. The latter did not mean to convey the impression that from 14 to 87 per cent of all grafted trees are affected with crown gall. In his experiment, as we understood it, all the trees planted were inoculated before planting, and the result was that from 14 to 87 per cent of these inoculated trees developed the gall. Of course nurserymen do not inoculate the trees, but rather use their utmost endeavors to keep the trees free from infection, by planting their trees, and particularly apple trees, on new ground. So that we are sure Prof. Howard did not mean to condemn grafted trees—he was simply, in the particular experiment to which our reader refers, trying to see which soil and which style of graft was most favorable to the development of the disease, **after the trees had been inoculated.**

C. N. M., Keokuk, Iowa—In the fall of 1902 I purchased 1,000 apple trees from the ——— Nuseries. I set them out on my farm near Springdale, Ark., the same fall. Nearly all lived, but did not do well last summer, and upon examining them last fall I discovered that the bark on these trees had turned black just below where the limbs branch out from the trunk. In cutting the tree off below the limbs, I found the inside of the tree had turned black, apparently a dry rot. In many trees there was only a narrow green rim left around the outside. We took up 284 of the lot, replanted them with sound trees, but it looks like it might become necessary to take them all up. What caused this apparently dry rot, and is it safe to leave these trees? The planting and soil cannot be at fault, for the trees I bought from New Haven Nurseries and Stark Bros., planted on same ground at same time, are doing finely. I am informed that the nursery which furnished these trees had cut them back; that they were "three-year-old cut-backs."

Answer by Dr. Whitten: The fact that the wood inside the trees was black and was surrounded by a green layer of wood just outside would indicate that the trees had been winter injured. One of the results of winter injury is, that the wood turns dark colored within, but usually the growing layers remain alive. If severe winter injured, the tree may usually keep alive for a season or so and finally actually rot out within. I imagine that this is the trouble, but it is impossible to say positively without having seen the trees at the time they were purchased.

J. A. I., Lovington, Ill.—(1) I would like to get a whitewash for my young orchard of various kinds of fruits. I want a preparation that will stick well and yet which will not hurt the trees. Is it safe or beneficial to whitewash more than once in the early season? (2) What varieties of plums are a success in the black-dirt region of central Illinois? Are varieties like the Lombard, Damson, Tatge, Abundance and Red June a success? (3) Of the following varieties of blackberries which are the best for market purposes, Wilson, Rathbun, Minnewaski, Eldorado, Ancient Briton, Erie?

Answer by Dr. Witten: Lime whitewash will stick better if a little skimmed milk is added, say, 1 pint of skimmed milk to a gallon of the wash. It is also advisable to add a little dissolved glue to the wash. Whitewash will not injure trees if it is applied as frequently as one desires. (2) For the list of plums for central Illinois I would refer the correspondent to the Illinois Experiment Station at Urbana. (3) As to which of the blackberries named above is best for market purposes, it depends largely upon the season. The Wilson mentioned has been a popular commercial variety in the East. Rathbun is a blackberry of very little flavor. The Minnewaski is productive through not of high quality. It succeeds better east than west. Most of the varieties named are grown more extensively in the east than in the central west, and I have not seen any of them growing to a large enough extent commercially in this section to predict as to their profitableness here. In the central west, the Snyder, Early Harvest, Taylor and Lawton are more popular.

J. H. B., Columbia, Tenn.—Will you please inform me if pouring hot water around peach trees will injure the tree, and if it will destroy the peach-twig borer.

Answer by Prof. Stedman: Pouring hot water around the peach tree will not injure the peach borer which is up in the tree and above the reach of the hot water. The best thing you can do is to cut out the badly infested twigs and burn them while the insects are within.

M. T. R., Grain Valley, Mo.—I send you today a wasp's nest which was cut from the limb of a Garber pear tree. Three years agfo I first noticed them. Two years ago the wasps destroyed bushels of my pears. They resemble a common house wasp, yet they never built about houses or sheds, apparently preferring large hedges. I have seen their nests as large as a dinner plate. Can anything be done to get rid of them?

Answer by Prof. Stedman: Mr. M. T. R. can get rid of the wasps in his trees very readily indeed by burning them by means of a large torch at night when the wasps are in their nests.

A. W. R., Delavan, Wis.—Is there any benefit to plants and trees in using tobacco dust or stems from a cigar factory as a fertilizer, or as an insect destroyer? (2) Is air-slacked lime of benefit or injury to the land?

The tobacco stems have a fertilizer value, and if they can be obtained cheaply may be used to advantage. Roberts says the stems contain 2 to 3 per cent nitrogen and 6 to 10 per cent potash. A ton of tobacco stems of good quality contains nitrogen equivalent to the amount contained in 500 pounds of nitrate of soda, and potash equivalent to the amount contained in 200 pounds of high-grade sulphate of potash. They contain but small amounts of phosphoric acid, but possess a distinct value as to nitrogen and potash. (2) Air-slacked lime has an effect upon the physical condition of the soil, and also will help to make available other elements in the soil. It should be used carefully, else one may liberate too much fertility. It is said that the father who uses lime on his soil robs his children—meaning that the soil will become exhausted of its fertility, through the use of too much lime.

H. M. W., Port Washington, Wis.—Please advise me how to cut back raspberries planted this spring.

Some growers pinch back the red raspberries, causing the plant to throw out laterals, but there are a great many more who prefer to allow the plants to grow strong this summer, and then next fall or winter cut back the canes at about three feet from the ground. The plant will then send out shoots to bear as much of a crop as it likely ought to carry. The black caps should be allowed to grow vig-

Nursery Cultivation

does not differ from that of any other drilled or billed crop. The secret is in killing all the weeds, keeping a finely pulverized top soil, admitting the light, air and warmth to the roots, and preserving all the under moisture. To do these things, there is no other implement so perfectly adapted to nurserymen's needs as the

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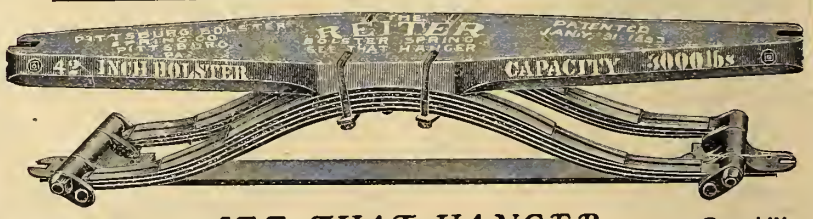

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orously, and as the tender shoots reach a height of about two feet, pinch off the top. This will cause the shoot to throw out laterals. Some growers pinch these laterals again, but most of them allow the branches to grow. They will get stronger, and later will reach the ground, where they will strike root. The next spring these laterals can be cut back as desired, owing to the strength and vigor of the plant.

B. W. R., Breese, Ill.—Inclosed I send some grape twigs, on which has been deposited egg of some insect. What are they? (2) How should gooseberry vines be sprayed to kill the worms, and when?

The eggs on the shoots of the grape vine are those of the common green katydid, and are not injurious. (2) If the worm to which you refer is the currant worm, as is likely, the remedy generally used is hellebore, used as a powder or in water, one ounce to three gallons. Advocates of the dust spray claim that the dry powder, made by slacking lime with a concentrated lye water, will destroy this pest.

J. A. B., Sabetha, Kan.—I see in the March issue of the Fruit-Grower, on page 27, directions for the banding of apple trees to trap the codling moth. This article states that bands should be inspected at intervals of ten days. And in the same article the statement is made that the insect remains in the cocoon, in the pupa state, for twenty days. Now, if this is correct, why is it necessary to inspect the bands so often? Why inspect them oftener than about every eighteen days?

If the insect always remained in the pupa state for twenty days, it would not be necessary to inspect the bands so often, but some authorities contend that some insects emerge in two weeks from the pupa state, so that it is safer to inspect the bands about every ten days, as stated.

A. E., Short Creek, Ky.—(1) Is Colorado a good fruit state? If so, what part? (2) Can farm crops be profitably be grown there? (3A) Will the Ben Davis apple do well there? (4) Do late frosts often kill the fruit there, in spring time? (5) Is Colorado a healthful state? (6) Can land be homesteaded there?

These questions can be better answered by two Colorado firms which have advertisements in our "Farms for Sale." columns. Colorado produces exceptionally fine fruits, in some places. Grand Junction, Rocky Ford, Paonia, and other places are the centers of thriving fruit-growing communities. The climate is healthful for most persons. As a rule, the state is regarded as being remarkably healthful. The Ben Davis apple grows there, but this variety is not so popular in Colorado as it is in some of the states of the Mississippi Valley. The fruit-growing lands, we believe are not subject to homestead, for water rights are required. Mr. F. B. Logan, Pinon, Colo., is secretary of a co-operative company which is building an irrigation ditch, along which actual settlers may get fruit lands, and if our subscriber will write to Mr. Logan the latter will explain the proposition.

J. W. S., Deerfield, Mo.—I have a newspaper clipping which says: "To insure success in spraying fruit trees, the first spraying must be done when the foliage on the trees is first opening, as one man puts it, 'when the leaf is the size of a mouse's ear.' This must be followed at intervals of ten days until four or five applications have been made." How about this? Is this correct?

The March issue of the Fruit-Grower touched upon this matter. The directions quoted are in a general way, and are in the main correct. If one is to spray for canker worms, the first spraying should be made as indicated. The second spraying should have particular reference to the coming moth, and it is considered now that the best time to do this is just as the petals are falling from the blossoms, before the calyx end of the young apple closes. This method of deciding the time is better than to say, as a hard and fast rule, that it should be done "ten days after the first spraying." Subsequent sprayings may follow at intervals of ten days to two weeks, unless there is some special pest which is to be combatted, and then the spraying should be adjusted to regulate the particular trouble. But, as a general rule, the first spraying should be made when the leaves are unfolding, the second when the petals are falling from the blossoms, and the third and fourth at intervals of ten days to two weeks.

J. N. S., Shelbyville, Tenn.—I wish to ask about making Bordeaux mixture. I have no less than five different ways of making the same. Here are two samples: One is to use four pounds of copper sulphate and four pounds of lime, to fifty gallons of water; another is to use four pounds of copper sulphate, three pounds of lime to forty gallons of water. These different formulas are confusing to an inexperienced person. What is the middle course?

There are several strengths of Bordeaux mixture. They vary in the quantity of copper sulphate and lime used. The standard 6-4-40 formula is to use six pounds of copper sulphate, four pounds of lime, and forty gallons of water. This is stronger than many persons use it, however. As a general rule, it may be said that the quantity of lime used should be at least two-thirds the quantity (by weight) of copper sulphate—that is six pounds of copper sulphate would require four pounds of lime as the minimum. The lime, as is generally understood, is added to the mixture to prevent the copper sulphate from burning the foliage of trees. A great many growers now use about four pounds of copper sulphate to forty gallons of water, and add as much lime as can be forced through the nozzle. This extra quantity of lime prevents injury to foliage, which, under certain conditions, will occur when the normal strength of Bordeaux is applied. If our correspondent will read the article on preparing Bordeaux mixture in March number he will understand how to properly make this mixture.

C. J. S., Proctorville Ohio.—Please state what length of time Disparene combined with Bordeaux mixture can be kept and still retain its strength.

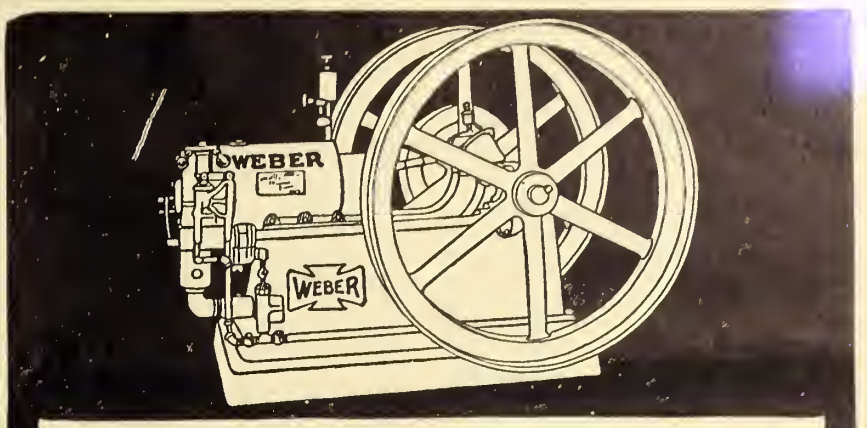
We believe that the Disparene, or the poisonous element, will not lose its strength by standing for a long time, but it is generally recommended that Bordeaux mixture be used while fresh, so that it is perhaps best to not allow to stand, not on account of the Disparene, because the Bordeaux is better when used fresh. If one wants to make up a lot of the mixture, the better way is to make the copper sulphate solution, with clear water, and keep in one vessel; make the milk of lime solution and keep in another, and when ready to use, pour quantities of these mixtures at same time into the spray tank, add the Disparene, and go to work.

J. E. S., Alta Vista, Kan.—What would be the result of my cutting old grape vines off smooth with the ground? Will they send up new shoots? I have several thousand vines which have begun to give way, and would like to know a method by which I can get new vines from the old roots.

Answer by Major Holsinger: I would prefer cutting the old vines six or eight inches above the ground. If at the ground there is more danger of breaking the sprouts off than higher up. As sprouts will form at the ground and below these can be saved and the old wood sawed off at the ground another year. This will renew your vineyard—or at least you get rid of the unsightly vines. This work should be done early to succeed well.

J. R. B., Springdale, Ark.—(1) How many pounds of evaporated raspberries can be obtained from one 24-quart crate? (2) Are some varieties of raspberries better for evaporating than others? If so which varieties are considered superior in this respect?

Answer by Dr. Whitten: It is impossible to say how many pounds of evaporated berries can be obtained from a 24-quart crate of the green fruit. Some varieties contain very much more water than others. In moist seasons they shrink more in drying than they do in dry seasons. On an average, however, 24 quarts of fresh berries should make about 10 quarts of dried fruit. The Gregg is one of the best berries for evaporating, as it shrinks less than almost any other well known variety. In some sections, however, the Kansas berry produces enough better than the



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Gregg that it will be more profitable for evaporating, even though it shrinks more in the drying process.

A. R., Shelbyville, Ill.—I desire some information on potatoes that have turned green from exposure to the sun. What is the nature of the green? Is it poison? Is it necessary that all the green be cut away?

Answer by Dr. Whitten: The green coloring matter in potatoes that have been exposed to the sun is technically known as chlorophyll, which is the same kind of matter which exists in all green leaves and growing plants. In its presence the crude sap of the plant is elaborated, or, I might say, digested, to fit it to build up the plant tissues. In a certain sense we might say that it is the first step which the potato makes toward forming its new growth. Potatoes that have so turned green are in no way injured for planting; in fact, they will produce earlier if exposed to the sun until they turn green before they are planted. The green parts of potatoes, however, are not suitable for food. As soon as the potatoes begin to turn green, unwholesome compounds are formed in the presence of the green matter. Usually, the green parts are so bitter to the taste that they will not be palatable. All of the green parts of the potato should be cut away before the potato is cooked.

H. R. M., Martinville, Ill.—We are infested here with a grass we call sorrel and find it is something hard to get rid of. If there is any way you know of to kill it out, please let us hear from you. It is a new grass with us and we don't want anything to do with it, as it kills out everything around it.

Answer by Dr. Whitten: By "sorrel" I presume is meant the Red Sorrel, which is a small plant of the dock family and an undesirable weed. Where it occurs only in small patches here and there it may be dug out to prevent its seeding and spreading over adjoining areas; where it occurs generally throughout a large area, so that digging up the plants is not practicable, the only feasible scheme of getting rid of it is by giving good cultivation and good tillage to the soil. A carefully tilled, hoed crop, like corn, may be grown on such an area, and if kept clean, not much of the sorrel will appear the next year. After the land has been cropped to a hoed crop, if it is put in some sown crop, like grass, grain or clover, it will generally be choked out, provided the land is properly prepared so the sown crop will get the start of the sorrel.

W. E. L., Tecumseh, Kan.—I have an apple orchard about ten years old. There are guite a number of trees dead in it, and I want to plant young trees where they are gone. Would mulching with fresh stable manure within about a foot of the tree, using coal ashes near the tree, be a good plant?

Answer by Dr. Whitten: Where apple trees are to be replanted, the replants will no doubt make better growth if they are mulched with a good dressing of stable manure, as suggested in the letter. Care should be taken, however, that the manure does not come into direct contact with the trunk of the tree, but is spread out as far as the roots will extend the first year or two.

Coal ashes are not usually beneficial to fruit trees, though in very exceptional cases, coal ashes, in small quantities, have been known to improve the condition of firm soils. As a general plan, however, I would advise against using coal ashes around fruit trees.

Subscriber, Tecumseh, Okla.—Wood ashes are plantiful here, and I would like to know something about their value as a fertilizer in the orchard and garden, and the quantity one should use to get best results. One year ago I put around each newly planted peach tree, two spadefuls of ashes from an open pile that had been accumulating in the back yard for about a year. I dug the ashes into the soil with a hoe. The trees made a splendid growth, and I have not found a single borer. Did I use about the right quantity, and when shall I give them some more? Are wood ashes of value to apple, cherry, pear and plum trees, and how much should ordinarily be used around a two-year-old tree? Please do not tell me to analyze the soil and see if it needs potash. What I want is the general rule for using wood ashes, if there is any general rule.

Answer by Dr. Whitten: Wood ashes are a very valuable fertilizer for fruit trees. Normally they contain a good deal of potash and considerable phosphoric acid, which under average conditions are more needed for fruit production than are the higher priced nitrogenous fertilizers. It is impossible to state just how large a quantity of wood ashes may safely be placed about a tree, especially where the ashes have been kept out of doors and are more or less leached. The quantity put around the peach trees was evidently about right. As long as not enough is used to cause the leaves to turn yellow and interfere with their best growth it is safe to conclude that the quantity used is not too great. We usually put not more than a shovelful around a newly planted tree and these are scattered over an area of four feet wide around the tree, or in other words, two feet in every direction from the trunk of the tree itself, and cultivated into the soil. It is easy to apply too large a quantity of ashes to a newly set tree. After trees are older, and especially when they begin fruit bearing, ashes may be applied in very liberal quantities without injury. A tree never reaches that stage, however, where it may not be injured by an excess of ashes. As a general application in bearing orchards you might say that one thousand pounds of unleached, good wood ashes per acre is a good quantity. If the ashes are somewhat leached, oftentimes double this quantity may be safely used.

C., Bluefield, W. Va.—I send herewith some twigs infested with some kind of insect. What is it?

Answer by Prof. Stedman: The specimen is infested with San Jose scale.

J. A. A., Council Bluffs, Iowa, and C. L. R., Chenoa, Ill., send specimens of eggs and cocoons of insect for identification. They were referred to Prof. J. M. Stedman, who replies that the eggs and cocoons are those of the common Tussock Moth, which insects can be held in check by spraying during the summer with any of the arsenical poisons.

P. W. H., Clarksville, Tenn.—There is a concern at New Orleans, La., engaged in manufacture of wood alcohol, turpentine, charcoal, tar oil, etc., and one of the by-products of their plant is a liqu'd called phyroligneous acid, which they now throw away. It is obtained by distillation of fat pine wood in iron retorts. It is something like crude acetic acid. It is claimed that the "phyroligneous acid" makes an excellent insecticide for spraying fruit trees,and does not injure the tree in any way. Will you please say if you have any report of the above named acid having been used for spray'ng, and with what success.

Answer by Prof. Stedman: In reply to the query from P. W. H., Clarksville, Tenn. I know of no such insecticide as "Phyroligneous Acid," and would advise one to experiment with the same before trying to use it to any great extent. It may be that it will kill insects and not injure the trees, but I have my doubts about it. However, I do not wish to make any definite statement, because, as I say, I know absolutely nothing about it, never having heard of the substance before.

F. E., Centerton, Ark.—I would like some imformation regarding the life history of bud moths, that largely work on apple tree buds. If any of your readers have had any experience with this pest, would be pleased to hear from them through the Western Fruit-Grower, giving full particulars regarding its operation and preventive remedies. Would like very much to get in touch with all who can give any information along this line. I would also like to hear from some one who has been using Disparene to exterminate canker worms and codling moth. My object is to learn if Disparene is as effective as Paris green.

Answer by Prof. Stedman: I cannot give the gentleman the life history of his so-called "bud moth," because I do not know the species he refers to. If he will send me specimens, I can then better determine the same. There are a number of insects of widely different habits that are known throughout this section of the United States as "bud moths.". The great buik of them can be successfuly combatted by spraying with any of the arsenical poisons, provided the work is done early, when the insects first appear, and that the spraying be done thoroughly. (2) Disparene is one of the best, if not the best, arsenical poison to be used as a spray for all kinds of

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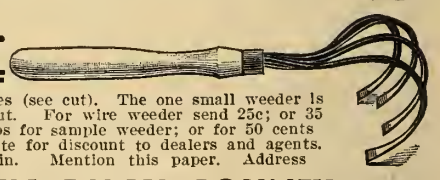

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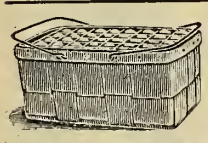

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biting insects, such as the canker worm and codling moth. It has many advantages over Paris green and the other common insecticides.

C. K., Lake Bay, Wash.—Enclosed find two twigs of apple trees; one seems to be covered with some insect eggs, the smaller twig appears to be diseased. Please give information through the Fruit-Grower.

Answer by Prof. Stedman: In reply to C. K., Lake Bay, Wash.—The twigs covered with the black eggs are those of the common plant louse or apple aphis. The other twigs are infested with the fungous disease. When the eggs hatch, the insects can be killed by thoroughly spraying with kerosene emulsion. The fungous disease can be kept in check by spraying with Bordeaux mixture.

J. H. K., Elmer, N. J.—When should peach seed be planted, and should they be cracked before planting? Where can I obtain some Tennessee seed?

Peach seeds are usually planted in the fall. They will not need to be cracked as the freezing during the winter will crack them. Tennessee peach seeds will be advertised by firms which deal in this line of products during the coming summer.

T. R. P., Excelsior Springs Mo.—Is the common seedling cherry which sprouts from the roots equal (or as I am informed, superior), to any budded cherry in bearing qualities? Is there a difference to be found in this same cherry as to bearing quality? Would you advise a person wishing to plant a number of cherry trees to plant this sort of tree which costs nothing, or pay 50 to 60 cents for nursery trees of well-known bearing sorts?

You doubtless refer to the sprouts which come up from trees budded on Morello stocks. Some of these sprouts would doubtless be desirable, but they would still continue to sprout, which, at best, is a nuisance. If the trees are to be given clean cultivation always, the sprouts can be kept down as weeds, but if not given this clean cultivation they would always be a nuisance. If the sprouts come from Morello seedlings, there will be found a variation in them. As to whether one should plant them or buy nursery trees, each one would have to decide for himself. Most growers, however, would buy the nursery trees, we believe, especially as a great many of them in Missouri find other varieties than Morello most profitable. Montmorency and Early Richmond, for instance.

W. C. McM.—Colonia Juarez, Chihuahua,, Mexico.—Can the lime, sulphur and salt mixture be applied, if it seems necessary, after the fruit is formed on trees, without injuring the fruit or foliage?

No, the mixture should be used before growth starts, but, as has been pointed out, the best results are obtained by using just as late before the starting of growth as possible, and yet escape the opening buds.

⚜ ⚜ ⚜

Strawberries With Quality.

Having grown strawberries for over forty years, and having been a practical market-gardener for over thirty years, I want to offer some facts from my experience as to varieties which should be grown for market. I started with Charles Downing, Wilson's Albany, Jacienda, Col. Cheney and Sharpless; later planted such varieties as Crescent Seedling, Captain Jack, with the other newer acquisitions. I have many times had forty to fifty varieties on my trial grounds, and made it a rule to discard, after two years, the worthless sorts, holding those which were desirable. At present I have about thirty varieties in my trial grounds, about twenty sorts having fruited last season. With the experience I have had with over 300 varieties, and with my knowledge of conditions entering into the strawberry business, I would say today, in looking over all these varieties, there are not more than ten varieties which I would plant today for real purpose strawberries, and for long-distance shipping would not plant more than six of the varieties.

I have been a constant and close reader all these years along the lines of horticulture, having had access to many journals, and I now have before me reports from many horticultural societies. These reports show that more loss has occurred to strawberry growers by planting the wrong sorts than from any other one cause. To show that this is true, we have but to look at the facts. Twice in the writer's experience the Chicago market has been broken down with Tennessee and Southern Illinois fruit, which had nothing to recommend it, so that the shippers were called upon to pay the freight. The berries were condemned and dumped into Lake Michigan. The market was overstocked. But remember that while all this was going on some varieties of berries form Southern Illinois were selling at profitable prices. So it was last year on the Baltimore market. The market was broken with New Jersey and Maryland stock, so that berries sold as low as 25 to 50 cents a crate.

Now, when these facts are stated—and all well-informed growers know they are facts—it shows there is something wrong. I hold that it is chiefly due to the fact that varieties are placed on market which are of no value. Some may say the condition is the result of over-production, but we find that good berries are selling for good prices at the time of this loss on poor fruit. Every grower knows that when he can furnish smooth, solid, red-to-center strawberries, which will sell on market at $2 per case, retailing to the consumer at 10 cents a box, people will buy five boxes of this better fruit to one box of the soft, watery kind. And every box or crate of the good fruit sold means that there will be a demand from the same customer for more berries.

Now, my brother strawberry growers, I am going to offer a word of warning to plant only varieties which will cause an increased demand for berries. This is the only business way. Notice that the commercial apple growers plant only a few varieties—in the Western and Southern states they plant largely of Ben Davis, Johathan, Grimes' Golden, etc., while in the East they plant Baldwins, Greenings and Spitzenbergs, for the most part. These six varieties are planted perhaps more largely than all other varieties put together. This is because these varieties have certain qualities that suit them for a special purpose. When strawberry growers learn to grow varieties which will meet a certain demand, for a certain purpose, they will be better off than we are now.

This brings me up to a discussion of some of the varieties which are now grown. There are many varieties of strawberries. The strawberry produces a great many seeds, which come to bearing age in a short time, and thus the number of so-called new varieties is legion. Perhaps one in 10,000 seedlings may have merit, but a much greater number than this are introduced to the trade. I believe that every grower should have his own personal trial grounds, on which can be tested, in a small way, the newer sorts before they are planted extensively. Two years, as a rule, will determine whether any variety has the qualities which you require. By testing in this way each strawberry grower will be in position to select the varieties which best suit his needs. Under the plan which many growers have followed, they have followed the advice of the plant growers, who, naturally, have advised the planting of the varieties they have for sale.

The first strawberry which was extensively grown in the garden was the old Wilson's Albany, now called Wilson. The next one which became popular as a market berry was Crescent Seedling, and these varieties, especially the Crescent when properly fertilized, stood at the head of the list for years. Later came Captain Jack, Michel's Early, and these two great pollenizers made the Crescent the great producer. Today we have varieties far better than these, yet I believe that if the Crescent was a solid berry, red to the center, that I would still class it among the best berries. I find the Crescent, Excelsior, Warfield, Aroma, Lady Thompson, Sample and Splendid are favorites in the strawberry belt. Among the newer sorts are Klondike, Climax, Brandywine, Hoffman, Ridgeway. And of the still newer sorts are Uncle Jim, Midnight and the W. W., or Wild Wonder. These varieties have fruit which is red to the center. I believe this quality is not to be overlooked. I think there is about as much difference between a white-fleshed strawberry and one which is red to the core as there is between a Ben Davis apple and a Grimes' Golden apple. With me the Wild Wonder has proved a most excellent berry the past three years. It has yielded more good fruit than any of the other varieties I have had under test, and the fruit has satisfied customers also.

But the point I would make is that all growers should know what constitutes a good market berry—one which is firm and of good quality—and should have a test or trial grounds, so that all varieties could be tested before planting extensively. Then we could avoid planting varieties which are worthless for market, and the fruit from which arrives in poor condition and breaks the prices of the market.

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Mt. Sterling, Ill.

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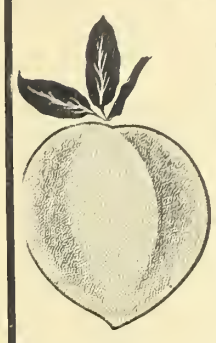

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Holsinger's Department

Girdled Fruit Trees.

I have a letter from E. E. Yaggy, Hutchinson, Kan. The heading of the letter-head recites the plantation of the Yaggy Brothers to consist of the folowing: Five hundred acres catalpa, 6,000 peach trees, 80,000 apple trees, bearing ; 6,000 pear trees bearing. Yet with all this experience they are "up agin it," and want our help. The rabbits have gnawed between 500 and 1,000 trees from 4 to 6 inches in diameter.

Here, too, comes M. W. Harnish of Lee's Summit, Mo., who reports from 500 to 1,000 trees—apple, pear, peach and cherry, 12 years old, also trees 3 to 5 years old—gridled by rabbits, What can I do?

While I have answered these inquiries personally, I think it of sufficient importance to answer this through the columns of the Western Fruit-Grower as it concerns many others. In fact, we have reason to feel aggrieved, as the rabbit has been in evidence with us. Just why they should be so destructive on fruit trees at the present time passes our understanding, as there is no snow and they have access to their usual food supply.

As I live in town with dozens of boys of all colors who are anxious to hunt the rabbit I did not think them of sufficient importance to wrap my trees, and ere I was aware, quite a number of trees were barked. My sons have their trees wrapped with common newspapers and are safe. I still think that paper is a most satisfactory solution, as paper is of easy access and easily put on.

To th'se who are as unfortunate as Messrs. Yaggy and Harnish, I will say that the first thing to do is to cover the wood. Ordinary grafting wax should be smeared over and covered with cloth, or one can take fresh cow manure or a clay mud, spread over a cloth and tie on the parts injured. If not entirely girdled through the cambium layer, one may reasonably expect the trees to survive. Again, where none of these things are at hand, mound the trees to above the injured parts. Care must be taken to keep the injured parts covered, thereby excluding the air. This will require considerable work, but when trees are 4 to 6 inches in diameter they are worthy this painstaking to save them.

J. T. Wallace, Negoa, Ill., is inclined to be facetious. "What kind of a critter is the vole, anyway? Webster says the word means to seize and hold." Does it? I have Webster, 1900 edition, before me. Following the picture of the rodent is: "Any one of numerous species of mice, like rodents." They have a thick head, short ears and a short, hairy tail." Yes, he "wears bristles," (see picture in Webster.) He runs in the run-ways of the mole and eats the grain for which the mole is blamed. I still think the animal dissected by Friend Wallace was the vole.

Benjamin Buckman, too, has his say. He admits "seeing a handful of May beetles' wings at depositing places in their runs." I wish Brother B. would do, as I have, seize "the critter," place him in a close box and feed him soft corn and note the result. Cover in the grains and starve him to it, and if a single grain is missing, charge to the mole and the joke is on me. This is easy. Until then—well?

Missouri Valley Meeting.

The March meeting of the Missouri Valley Society was not as well attended as usual. Owing to the opportunity to do out-door work, many were engaged with nursery work and garden-making. It was the latter that caused me to be late. The question of fruit packages was being discussed. Mr. Wilson, one of the young crowd, was on the floor and giving his report. He said he was in favor of discarding the diamond basket—this is the common split basket used by grocers—in favor of a more substantial one, perferably the Michigan basket, which is durable and will carry the soft fruit without bruising. He had used them for tomatoes with good success. The cost is not so much greater as to be a serious matter and their carrying capacity in protecting the fruit would more than compensate.

A motion was made and carried to dispense with the diamond basket, in the handling of the soft fruits.

A motion was also carried to appoint a committee to secure growers pledged to a uniform package other than the diamond basket. One from each vicinity was named by the chairman, Mr. Peck, to report at next meeting.

Committee on orchards made a more favorable report than at our last meeting. Taylor said they had forced peaches and found quite a show of bloom.

Acting President Reck had a bundle of peach scions that were quite full of bloom. Mr. Peck was one of those so favorably located last year as to have peaches. His on a north hillside.

Mr. Gans said that while there were some bloom left, yet the crop would be light.

Holsinger: "On all high locations there are enough bloom for a full crop, while in bottom or lower ground a very light crop may be expected."

Wheeler: "All the bloom necessary on the pears and apples. Cherries have not as much bloom as last year."

The reports on small fruit from all sides was encouraging. If nothing transpires we will see a magnificent crop of fruits of all kinds.

FRANK HOLSINGER.

Fighting the Mole.

I feel called upon to defend J. T. Wallace in his statements concerning the healthy Illinois mole. Now, Major, Brother Wallace is correct. It was a mole and not a vole, or what we call a prairie mouse in .this section. It was one of those little rascals that will follow a corn row in spring and eat all the planted seed for the distance of 40 or 50 hills in succession. The reason, my dear Major, why the mole does not do more damage for you is this: There are either few moles with you or you have plenty of bugs and grubs to satisfy his hunger, and when a mole can get his natural food he will not bother grain. Here where I live there are enough moles to eat up all the bugs in this broad land of ours and I tell you they are a decided nuisance. My land joins the C. & A. railroad and there is where the little pest is raised in such numbers that our efforts to exterminate him are in vain. As a rule the moles will take one-fourth of my corn for from 50 to 100 yards in from the railroad, depending upon how badly it is blown down in the fall, for every ear on the ground has the lower side eaten off.

For the benefit of the Fruit-Grower readers I will give my method of fighting the mole. In spring I soak corn in arsenic and put it in their runs in the following manner: Make a small hole in the run so as to leave the run unobstructed, drop in a dozen or so of the poisoned grains, then cover the hole with a chip, or anything to keep the dirt from rolling in, and the mole will do the rest. This method is not safe where chickens or other animals might get the poisoned corn.

JOSEPH GERARD.

Jerseyville, Ill.

Letters from Fruit-Grower readers continue to pour in, protesting against Major Holsinger's praise of the mole. T. L. Waters, Riverside, Mich., writes as follows:

"I have been both amused and edified at the mole discussion with Major Holsinger, and now I want to take a whack at him—at the mole, and not at the major, for he is to be respected. My plan of destruction is to get a bottle of strychnine and a pound or two of raisins, and, after putting a small quantity of the poison in each, drop the raisins in the runs. Care must be exercised that nothing but the moles gets hold of the poisoned raisins."

Prof. F. C. Sears, director of the Nova Scotia School of Horticulture, Wolfville, Nova Scotia, writes as follows: "I have received the February number of the Western Fruit-Grower, and want to congratulate you on the paper you are putting out these days. It is the best thing in the fruit line that we get, which includes about everything we can hear of. It has only one drawback for us, and that it is too much of the matter is 'too Western' to apply to us. But we get our money's worth a good many times over, as it is."

J. E. Roetan, Woodville, Texas, says: "The Fruit-Grower is the best paper of six which reach my desk; it is the right paper doing the right thing."

"After having read the Fruit-Grower for three months, I must say it is worth all the other fruit publications I ever saw, and I do not see how anyone interested in fru't culture can get along without it."—M. B. Dickey, East Liverpool, Ohio. They can't afford to get along without it, Friend Dickey, although some persons try to do so.

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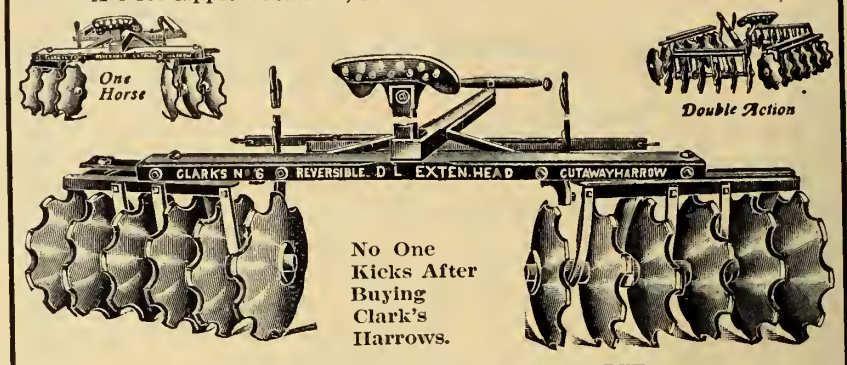

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Wood Ashes as a Fertilizer.

An average sample of unleached wood ashes contains about seven per cent of potash and two per cent of phosphoric acid, which at current retail prices of these plant foods makes average wood ashes worth about 45 cents per hundred pounds, or $9 a ton, says A. M. Ten Eyck, in the Industrialist, published by the Kansas Agricultural College. Besides the actual fertilizing value by reason of the potash and phosphoric acid contained in the ashes, there is some value to ashes simply from the power which potash has to make the nitrogen of the soil available for plants by its chemical action on the organic matter and humus in the soil. The potash in ashes exists in a readily soluable form, and is thus immediately available for plant food. Ashes also contain a little magnesia and a considerable amount of carbonate of lime, which is of some importance because of its effect in improving the texture of heavy soils. The farmer can better afford to pay $8 or $10 a ton for good wood ashes than the usual rates for almost any potash fertilizer.

Leached ashes have rarely more than one per cent of potash and one and a half per cent of phosphoric acid, which will make them worth about $3 or $4 per ton. Coal ashes are probably not worth 50 cents per ton as a fertilizer, but on heavy soils they may often be applied with profit just for their loosening effect, and they are valuable as a top dressing or mulch in fruit gardens. Sifted coal ashes absorb liquids, fix volatile ammonia and prevent offensive odors and are valuable as absorbents under hen roosts or in stables. Wood ashes should not be placed under hen roosts or in stables, because potash liberates ammonia and the quality of both the manure and the ashes as fertilizers is deteriorated.

On average soils, fruits and vegetables are benefited by liberal applications of wood ashes, and remarkable results have been obtained by the use of ashes on legume crops, especially clover and alfalfa. Ashes will not make so valuable a fertilizer for top dressing for wheat as when used with the crops mentioned. Corn, Kaffir corn and cane will doubtless be more benefited than wheat by the use of ashes as a fertilizer. However, if the soil is lacking in the potash element, a dressing of wood ashes will benefit almost any crop. Most of the soils of Kansas are well supplied with potash. If there is any part of the state in which this element of plant food is apt to be lacking in the soil it is in the eastern part, where the land is old and the plant foods have become exhausted to some extent. In the eastern and middle states it is more usual to apply ashes in orchards, or upon onion or cabbage fields.

Ashes are best applied in the spring, separately or in connection with phosphate fertilizers as a top dressing. For cultivated crops the ashes should be spread broadcast after the land has been harrowed and made practically ready for the crop, and cultivated in by light harrowing. On onions a light dressing is sometimes applied with good results when the plants are two or three weeks old, and I believe that no harm will come to the wheat by a light application of ashes in the fall, or early in the spring. There will tend to be some waste to the soluble potash if the ashes are applied late in the fall or during the winter, by surface drainage or leaching.

Ashes may be applied at the rate of fifty to one hundred bushels, or one or two tons to the acre. One ton of good wood ashes will contain about one hundred and forty pounds of potash and forty pounds of phosphoric acid, which is more of each of these elements than any ordinary crop will take from the soil in a single season. If leached ashes are used, the quantity applied should be increased.

I think it will be impossible to spread the ashes thin enough with the manure spreader. Spread in this way, there is likely to be not only a loss of fertilizer because of the too abundant supply, but there is also likely to result injury to the growing crop by reason of the presence of too much alkali. Ashes may be applied by sowing broadcast by hand, provided the hand is protected, or it is possible by care to spread them thinly enough from a wagon with a shovel. If the ashes are fine and clean, it is possible to spread them with a revolving broadcast seeder.

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Sawdust has no value as a fertilizer, but it may have some value in the physical effects which result when it is applied to light, sandy soils. It tends to make such soils hold water better, and when applied on the surface acts as a mulch to retain the water in the soil below. Such a combination of ashes and sawdust might be made so that the mixture could be applied with the manure spreader without getting on too heavy a dressing of ashes.

Rains Injure California Fruit.

We have had the heaviest rain storm this month that we have had in fourteen years. The protracted rainy weather has injured the apricot crop, in this valley (Pajaro Valley), to a considerable extent, more than a similar spell did last season during the blooming season. The extent of the damage can not be accurately estimated at this time. The rains have not only washed the pollen from the bloom before the young fruit set, but the husk that surrounds the bloom during development has acted like a sponge in holding the water, with the result that the blooms have rotted; where young fruit had already been set or formed there will be no damage; there is a good prospect for apples and cherries. Pears were slightly damaged. Prunes and plums are favorable. Peaches are in full bloom. If the weather is favorable there will be a full crop. We have had abundance of rain in California for good crops.

F. G. BURLAND.

Watsonville, Cal.

A Handsome World's Fair Souvenir.

The K. K. & T. railway has issued a handsome souvenir booklet, showing pictures of the principal World's Fair buildings, in colors. This booklet will give one a good idea of the appearance of the grounds and the size and style of the buildings. A panorama is shown of the entire tract, and altogether the booklet is one of much interest and value. It is well printed, on good paper, with the illustrations in colors. Those who desire copies can secure same by addressing George Morton, G. P. & T. A., Katy Bldg., St. Louis, Mo., sending 25 cents to pay for same, for the souvenir is entirely too valuable and too expensive to distribute free.

J. T. Taylor, Yale, Okla., asks if any of our readers know of the Linn apple. Mr. Taylor says it is a remarkable keeper, specimens having been kept for two years. Mr. Taylor adds that he regards his subscription to the Fruit-Grower as the best investment he ever made, for he believes it wil increase the value of his strawberry crop by at least $25 this season, besides the other valuable information he has received from the paper.

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The Fruit-Grower's Subscription Policy.

As is generally known, it is the policy of the Fruit-Grower to continue to send the paper to subscribers until the paper is ordered discontinued. This announcement is made at the head of the editorial page. Occasionally we receive letters from subscibers who do not approve of this plan. But really it is a very simple matter to have the paper stop when time is out: Simply notify us to this effect, and we will put the letter "S" after your date, on your address tag, and when your time is out your subscription will cease.

The Fruit-Grower formerly discontinued all subscriptions when they expired, but so many readers were disappointed that the change was decided upon. A great many of our readers have their ready money at certain seasons of the year. It is more convenient for them to pay at that time, no matter when their subscriptions expire. If their names are taken from the list at a time when they are not ready to renew, they will simply wait until they are prepared to send the money, and then they ask for all the papers they have missed. We received so many of these requests, and were unable to supply the back papers, that the change was made to our present plan of continuing subscriptions until ordered discontinued. While there are some persons who like the other plan best, we receive about twice as many letters from those who favor our present plan as we do from the former class. And as stated, those who want their papers discontinued at the expiration of their subscriptions can have this done, by making a request to this effect.

Cultivating and Manuring Orchards.

Of our many sins of omission there are few that the average man is more persistent in than in neglecting his orchard. Even when the orchard is planted with the view of selling the fruit it is expected, in farm language, to find itself and give big returns or get big abuse. That is to bear heavily without either cultivation or manuring to speak of.

Nevertheless attention given fruit trees pays as well as attention to any other part of the farm, provided always that it is judiciously given. And when it is remembered that fruit is almost, and probably equally as essential to health as meat, it will be seen that attention sufficient to keep up the orchard pays well even if there is no intention of selling the fruit.

When orchards are manured, which is rarely, it is nearly always illy proportioned manure or fertilizer. Stable manure alone is most frequently used. Stable manure being rich in ammonia and comparatively poor in potash and phosphoric acid, the result is much wood and little fruit or fruit that is apt to rot. That is, I mean when the manure is liberally used, which is not often the case. For rarely is any kind of manure used in sufficient quantities to affect the trees to any great extent. Still even these small applications will be profitable in proportion to their quantity by seeing that they contain in the right proportions the essential fertilizing properties of ammonia, potash and phosphoric acid. The stable manure could be most profitably used elsewhere. A crop of cow peas can be grown in the orchard sufficient to afford all the ammonia the trees will need to grow fruit well. This pea crop will need no fertilizing properties, except potash and phosphoric acid, both of which are much cheaper than ammonia, costing only about one-third as much per pound. These two properties are also most essential to get a crop of fine fruit.

A good plan would be to broadcast 100 pounds of sulphate of potash and 300 pounds of acid phosphate or dissolved bone to the acre, distributing them evenly over the whole ground. The land should then be broken up and cow peas sown in drills about 3 feet apart. It will take one bushel of peas to the acre. They will need no cultivation with the hoe and only two or three plowings with a small tooth cultivator.

While sulphate of potash is more expensive than ordinary fertilizer it is exceedingly rich in potash (about 50 per cent), and as only a small quantity of it is to be used it is not expensive, considering the splendid results it gives. It is decidedly the best form in which to apply potash to any kind of fruit, giving fine size and color. Acid phosphate or dissolved bone while not rich in phosphoric acid as sulphate of potash is in potash it is much cheaper, making the cost about the same.

The peas can be saved and the vines cut for forage which should fully pay the expense of the crop. The pea stubble, which is rich in ammonia, can then be turned under, affording all the ammonia needed and also leaving the soil in most excellent mechanical condition. When the trees grow very large they would to some extent overshadow and lessen the pea crop, but if the above plan is persisted in by that time the orchard would be bearing such a fine crop of handsome fruit as to well repay all cost of manuring, etc.

Whether the orchard contain 10 trees or 10,000 it will pay to cultivate and manure it as above described. The cultivation should be shallow, the plowing in the peas being done with a light, small tooth cultivatr. This cultivating, if properly and timely done, will also have a wonderfully beneficial effect in conserving the moisture. An orchard of fruit in which the crust is kept broken in a drought retains an amount of moisture above that of an uncultivated piece of ground that is simply astonishing and would be incredible if it were not an established fact proven by the many authentic tests. However, any man can establish this fact by taking the trouble during a drouth to dig into a cultivated field and compare that with one on which the crust has been allowed to harden and remain unbroken.

O. W. BLACKNALL.
Kittrell, N. C.

The Century in Nome.

A letter just received by The Century Co., from a Nome, Alaska, dealer states that up in far-away, ice-bound Nome his sales of The Century last summer averaged firty copies a month.. He ls sure, he writes, that he will increase these sales materially another year, in spite of the many difficulties he and his customers must overcome to secure good reading. That there are at least fifty families in Nome, cut off entirely from the world six months of the year, who care enough for a magazine of The Century's rank to make the sacrifices necessary to secure it, will give most persons a new idea of the people of that distant frigid town.

Old Trusty Incubators.

A letter from M. M. Johnson, Clay Center, Neb., manufacturer of Old Trusty incubators, states that the demand for these machines is very heavy. The public seems to appreciate the incubators sent out by Mr. Johnson, for the Old Trusty has become very popular. In this connection it might be said that Mr. Johnson has established an office and shipping depot in St. Joseph, Mo., so that rush orders can be accommodated, with the very best of shipping facilities. The St. Joseph office is at 307 North Third street, and persons who visit St. Joseph will find a line of Old Trusty machines on exhibition there. Mr. Johnson's order for advertisement came so late that it does not appear on the poultry page, but will be found elsewhere in this issue. Look it up, and if you have not seen the Old Trusty catalogue, send for one today.

Schulze Bros. Nursery.

This firm has been advertising in the Fruit-Grower for a number of years, and has had dealings with many of the readers of the Fruit-Grower. This firm claims to propagate its nursery stock from selected bearing trees, so that the stock is not only true to name, but that the trees will be more apt to produce profitable crops. Fruit-Grower readers who are contemplating purchasing nursery stock, either yet this spring or next fall should look up the advertisement of this firm and investigate its claims for preferment.

Every reader of the Western Fruit-Grower should read the offer of Pearson & Co., Kansas City, Mo., on page —, if interested in buying a farm.

OLD TRUSTY INCUBATORS.

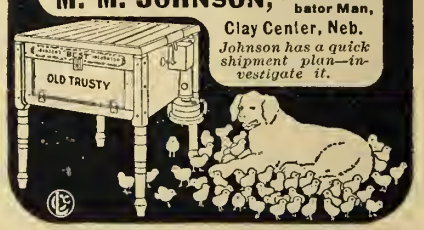
"I've made a good many incubators and sold them too, but I've got the machine now that's right. Simple, and it's sold on a 30 days trial plan that proves my claims or back they come. Write and see if I can't prove to you that you can make money in the chicken business. I've got a great $10.00 Special Offer on my 120 Egg Machine and a 5 years guarantee that makes you sure.

My New Catalogue

tells the story without any filigree work and it has a lot of things like practical plans for poultry houses, care of poultry, egg record sheets and incubation records that make it valuable to any man in the chicken business. I want to send one to every man that reads this paper Write me a letter. I'll send you the book free and tell you anything I can about your hens. Write to

M. M. JOHNSON, The Incubator Man,
Clay Center, Neb.

Johnson has a quick shipment plan—investigate it.



BULBS FOR THE GARDEN.

Fine Gladiolus, 25c doz.; Choice Cannas, 75c doz.; Madeira Vines, 50c doz.; Spotted Callas, 15c each; Russian and California Hardy Violets, runners 25c per doz.; Jacobean Lily, 10c.
M. L. BONHAM, CLINTON, MO.

Mr. John Heise, Hamlin, Kan., sends the Fruit-Grower several specimens of a sweet apple which he calls Bentley Sweet, and asks our opinion of same. The apples were of medium size, yellow and red striped, and the quality was good. The apples were juicy and firm, and evidently the variety is a good keeper.

WANTED—Plow hands and men for general farm work in our peach orchard at Horatio, Ark. Pure running mountain streams; healthy location. Will pay $1.00 per day, sun to sun, hour and a half noon. Married men preferred. House, garden plot and stovewood furnished free. Work the year round. Address E. M. Treakle, Room No. 20. Water Works Building, Kansas City, Mo.

FARM LANDS FOR SALE.

LANDS—CHEAP.

Large bodies of land and ranches; timber land, fruit and truck farms in Kansas, Oklahoma, Texas, Old Mexico, Louisiana, Arkansas, Southern Missouri, Colorado, New Mexico and California. Tell me what you want and where you want it and how much money you will invest if suited and I will send you list of bargains of the kind you want in that locality. I also have small farms and ranches in all parts of said States. I am working above mentioned territory thoroughly. Write me and see how well and how promptly I will serve you. I have land at 35 cents to $35 per acre.

GEORGE W. MORRIS,
Lyndon, Kansas.

Write us for list of bargains in fruit lands and orchards. Frazer Real Estate Co., Gravette, Benton Co., Ark.

For Sale—Orange groves in Florida. Also farm, ranch and fruit lands, improved and unimproved. Send for list of bargains. C. THOS. SHINN, Pomona, Florida.

Wanted—Position as foreman on large farm by sober, middle-aged man, 17 years experience in stock and grain. Best references given. Z. MUSELMANN, 2159 Stout St., Denver, Colo.

GOV'T AUCTION SALE CATALOGUE GUNS

Pistols, Military Goods (Illustrated), 15c., mailed 6c stamps. F. Baunerman, 579 Broadway, N. Y.

Watches, Jewelry, Clocks, Silverware

We handle only best goods at lowest possible prices. This 14K solid gold ring, 3 dwt. $2.55. Same style gold shell ring, 50 cents. Silver fob mounting, 40 cents; rolled plate fob mounting, 30 cents. Send for catalogue.

THE BABCOCK SUPPLY CO., Box 591, Syracuse, N. Y.

Baldwin Cherry Trees

The largest, sweetest and best, is being planted from Maine to Oregon, and the supply of trees is being rapidly reduced. My Special Offer is good for only 30 days. 200,000 other fruit trees at wholesale. New descriptive catalogue free.

Baldwin, Nurseryman, Seneca, Kas

BEFORE ORDERING

Small Fruit Plants

ask for descriptive catalogue of Strawberry, Raspberry, Blackberry, Currant and Grape, with discount, and be convinced of the value we give for a little money. A1 quality, **true to name,** BABCOCK & NASH, Bridgman, Mich.

I WILL GIVE YOU a Perfect Fitting Pair of **GOLD SPECTACLES FREE.**

SEND NO MONEY.

Just write me ten names of spectacle wearers and I will do this:—First I will mail you my perfect Home Eye Tester Free. Then (after you have sent me your test) I will mail you a full $2.50 family set of spectacles (which will wear yourself and family a lifetime) for only $1.00—and with this I will also send a Handsome Rolled Gold Pair Free. My regular price for this full family set of spectacles is $2.50 and your home dealers are charging from $2.50 to $5.00 a **pair** for them, which would make this set cost you about $10.00 if you bought them from your home merchant. I am really giving away the **whole** set free (tho dollar I will ask you to send me with your test is **only** to pay for this announcement). I am doing this for a short time **only,** just to **prove** to you and all other spectacle wearers in the United States that **my** spectacles—the Dr. Haux "Famous Perfect," Vision Spectacles--are the most perfect fitting, clearest and the best that money can buy, and I'll give you your dollar back and let you keep the spectacles also if **you yourself** don't say they are the best and finest you have ever bought at any price. Address:—
DR. HAUX SPECTACLE CO., ST. LOUIS, MO. ☞**I WANT AGENTS ALSO.**
NOTE.—The above is the largest spectacle house in the United States and is thoroughly reliable.

A Pleasure To Answer Questions

Write, or call, and I will tell you what the cost of a ticket is to any point east, west, southwest or northwest. I will also let you know the best way to reach it, when you will arrive, whether or not a change of cars is necessary, and why you should take the Rock Island System.

The finest sleepers Pullman could build are now in through service between St. Joseph and Chicago via the Rock Island. Leave Union Station every evening at 7:05 o'clock.

Rock Island System

JOHN J. GOODRICH,
City Passenger Agent
6th and Edmond Sts., St. Joseph, Mo.

STARK TREES best by Test—74 YEARS. Largest annual sale. High quality—NOT high price. FINEST sorts. We BUD 4 million Apple trees, whole-root graft 5 million—1- and 2-yr. Other Trees, Vines, etc., in proportion. 1400 acres Nursery 43,000 acres Orchards. FRUIT BOOK free. **We PAY FREIGHT** box and pack free, ask **no money** till SAFE arrival,—guarantee SATISFACTION **We PAY** CASH each WEEK and want **more** HOME and traveling salesmen Stark Market and Quality Kings PAY: Apple of Commerce, Black Ben Davis, Champion, Delicious, Senator, Stayman Winesap; Gold plum; Kieffer; Elberta.—Visit us STARK BROS LOUISIANA, MO. Dansville, N. Y. Stark, Mo., etc.

For Kidneys, Bladder and Rheumatism

New Discovery by Which All Can Now Easily Cure Themselves at Home—Does Away With Surgical Operations—Positively Cures Bright's Disease and Worst Cases of Rheumatism—Thousands Already Cured—Note Endorsers.

TRIAL TREATMENT & 64-PAGE BOOK FREE

At last there is a scientific way to cure yourself of any kidney, bladder or rheumatic disease in a very short time in your own home and without the expense of doctors, druggists or surgeons. The credit belongs to Dr. Edwin Turnock, a noted French-American physician and scientist who has made a life-long study of these diseases and is now in sole possession of certain ingredients which have all along been needed and without which cures were impossible. The doctor seems justified in his strong statements as the treatment has been thoroughly investigated besides being tried in hospitals, sanitariums, etc., and has been found to be all that is claimed for it. It contains nothing harmful, but nevertheless the highest authorities say it will positively cure Bright's disease, diabetes, dropsy, gravel, weak back, stone in the bladder, bloated bladder, frequent desire to urinate, albumenaria, Sugar in the urine, pains in the back, legs, sides and over the kidneys, swelling of the feet and ankles, retention of urine, scalding, getting up nights, pain

"None can say they are incurable until they have tried my discovery. The test is Free."

in the bladder, wetting the bed and such rheumatic affections as chronic, muscular or inflammatory rheumatism, sciatica, rheumatic neuralgia, lumbago, gout, etc., which are now known to be due entirely to uric acid poison in the kidneys—in short, every form of kidney, bladder or urinary trouble in man, woman or child.

That the ingredients will do all this is the opinion of such authorities as Dr. Wilks of Guy's Hospital, London; the editors of the United States Dispensatory and the American Pharmacopoeia, both official works; Dr. H. C. Wood, member of the National Academy of Science and a long list of others who speak of it in the highest terms. But all this and more is explained in a 64-page illustrated book which sets forth the doctor's original views and goes deeply into the subject of kidney, bladder and rheumatic diseases. He wants you to have this book as well as a trial treatment of his discovery, and you can get them entirely free, without stamps or money, by addressing the Turnock Medical Co., 805 Turnock Building, Chicago, Ill., and as thousands have already been cured there is every reason to believe it will cure you if only you will be thoughtful enough to send for the free trial and book. Write the first spare moment you have and soon you will be cured.

It would seem that any reader so afflicted should write the company at once since no money is involved and the indorsements are from such a high and trustworthy source.

RHEUMATISM

Cured Through the Feet

Nine Out of Ten Cured in Jackson. Drafts Sent Anywhere on Approval.

Try Them—FREE

Anyone can try—without paying a cent—the famous Magic Foot Drafts, which always bring comfort and almost always permanently cure Rheumatism, either chronic or acute, no matter how severe. Hundreds of thousands of pairs of Drafts have been sent on approval all over the world and the makers are still sending them to every sufferer they can hear of.

Send your name today. You get the Drafts by return mail. If you are fully satisfied with the help they give you, then you can send ONE DOLLAR. If not, keep your money. You decide.

Magic Foot Drafts work like Magic. Cured patients tell us they perform miracles. They do not. They are scientific—logical. The foot pores, the largest in the body, are located over rich nerves and vascular centers. The Draft on the foot acts through them on every inch of the body—curing Rheumatism no matter where located. Our booklet makes the reason clear.

Sixty-eight per cent of the nitrogen of the foot sweat drawn out through the great foot pores and absorbed by Magic Foot Drafts is in the form of the poison UREA, the basic cause of Rheumatism. The Drafts are comfortable, safe and sure. Don't suffer needlessly. You are not risking a penny and the chances are nine out of ten that the Drafts will cure you, as they have so many thousands of cases just like yours.

It would take you many weeks to read the grateful letters from every land on earth to the makers of Magic Foot Drafts. Try them yourself. Write today to the Magic Foot Draft Co., 432F Oliver Bldg., Jackson, Mich., for a pair of Drafts free on approval. Valuable booklet for rheumatics also free. Send no money.

Of International Fame.

On a busy corner in the still busier city of Chicago, where thousands of people—Chicago people—with an eye and thought for naught but their own affairs, pass and repass every day, stands a building, not an imposing, but a substantial, roomy edifice, the name of which is perhaps more widely known in all quarters of the globe than that of any other structure upon the entire American continent. People pass it by without giving it a glance of the eye, but countless thousands of eyes in all parts of the world are daily turned toward it and countless thoughts are centered upon it and that which it produces and offers to the world.

It is the Vitae-Ore Building, the building from which the remedy which gives it its name is offered to the public, the remedy—the natural mineral Ore—which has astounded the people of five continents by its remarkable and almost miraculous cures and brought happiness, comfort, peace and content to thousands of homes which had been torn and ravished by the scourges of sickness and disease. It was built by, with and for Vitae-Ore.

Each brick and stone represents a satisfied customer; each tile in the floors and stairway a patient cured, who satisfied, paid his money for the treatment. From a humble beginning in a room in a cottage occupied by Mr. Theo. Noel, its discoverer, the Vitae-Ore enterprise has grown to such proportions as to occupy a building 50x125 feet, three floors high, a total floor space of 18,750 square feet, used solely, entirely an dexclusively in placing this remedy before the public, not counting the building owned and occupied by the Theo. Noel Company, proprietors of the discovery, in Toronto, Ont., and London, Eng., for the carrying on of the Vitae-Orr enterprise in Canada and Great Britain.

All this is a standing monument to the wonderful merit of this still more wonderful remedy, which is today offered to the readers of The Western Fruit-Grower in the magnificent, full-page announcement which readers will find in this issue, a monument that testifies in a stronger language than anything that could be said with ink and white paper. The Theo. Noel Company offers a package on thirty days' trial so that all who suffer, all who need it, may test it without risk or possibility of loss. It cures, the patient is satisfied and pays for it, and the Vitae-Ore enterprise grows and grows and spreads its leaves like a geen bay tree.

SOLD FOR $100,000.

The discoverers of Liquozone have sold the American rights to The Liquid Ozone Co., of Chicago, for $100.000. It is stated that this is the highest price ever paid for similar rights on any scientific discovery.

This new product is manufactured from gas—largely exygen gas—by a secret process requiring large apparatus. The process takes 14 days, and during that time, 1,250 cubic feet of gas becomes one cubic foot of Liquozone.

It is claimed that this product does what oxygen does. That it is, like oxygen, a remarkable tonic, and that, like an excess of oxygen, it destroys the germs of disease. The makers publish on every bottle an offer of $1,000 for a disease germ that it cannot kill.

The men who have purchased this product state they first tested it for two years, through physicians and hospitals. They amply proved that it does what is claimed for it, and what medicine cannot do. In order to prove this fact to the sick, they offer to buy a 50c bottle and give it free to anyone who asks for it. And this remarkable offer is published today in this paper.

If this product will do even a tenth what is claimed for it, Liquozone will certainly be of vast value to sick humanity. And the fact that the owners paid $100,000 for the simple right to make it, and that they pay for the sick one's test, would indicate that those who know it best have faith in it.

The Winter Banana Apple.

A number of persons have asked about the value of this apple, which is generally recommended. All such persons and all other who wish to test the variety will be interested in the advertisement of the West Jersey Nursery Co., Bridgeton, N. J., in this issue. Mr. S. B. Cole, proprietor of this nursery, offers mailing size trees of this variety, so that the trees can be sent anywhere, and all will have an opportunity to test the Winter Banana. Mr. Cole sends some testimonials which speak of this variety in the highest terms. Look up Mr. Cole's advertisement and note the prices on these mailing-size trees.

"The Fruit-Grower is the best paper I ever read; there is no foolishness about it, but it is all good and valuable reading. I would not do without it for ten times what it costs me."—Isaac Hawbaker, Dutch Ridge, Iowa.

A telegram in a daily paper from Grand Junction, Colo., announces that John T. Spencer of that place, after experimenting for many years, has produced a seedless apple. It is one of the things which men have been working for, and it will doubtless come eventually, but we will not be too enthusiastic about it until we see it. But seedless apples will come in time, we doubt not, just as seedless oranges have worked a revolution in the orange business.

It is said that Luther Burbank has produced a new potato, which, while it resembles the ordinary potatoes in flavor and in other ways, is as red as a beet. It is said to be of excellent quality and that its color makes it most attractive. Perhaps one shall bring out a blue potato, and then on patriotic days, such as Fourth of July, we can have our potatoes sered a la patriotic—that is, red, white and blue.

SUCCESS WITH HOGS.

Editor Western Fruit-Grower:

Dear Sir:—The writer has had much experience raising and fattening hogs,—have also bought most all kinds for fattening, and have come to the conclusion that there is little difference in the leading breeds for pork purposes, as all have some characteristics of their own not found in the others; the one important thing with any kind is to keep them strong and thrifty.

Many hogs at this time of the year are injured by feeding corn alone. Old process oil meal slop is fine to keeep them in good condition,—really I would not do without it.

When the warm days of spring come give them a good scouring in a vat of warm water with plenty of soap and some carbolic acid in it,—then turn them out on a good pasture and you will be surprised to see what they will do. The next day when you go across the pasture you will find a good part of it all torn up with their rooters, then you will wish for a "Never Root," the only sure preventitive from rooting. You had better get it now and save time, patience and pasture. They have an extra blade for ear-marking all kinds of stock, which will probably save you a hog or a steer occasionally. They are made at Quincy, Ill., by the W. I. SHORT MFG. CO.

WILLIAM IRWIN, Lewis Co., Mo.

Fruits from a Responsible Nursery.

The season is at hand when farmers are receiving numerous calls from persistent fruit tree agents. Without wishing to lend disparagement to the much discussed fruit tree agent, we desire to direct our readers' attention to the great Harrison nurseries of Berlin, Md., who advertise regularly in our paper. This concern employs no agents, but sells direct to planters and is responsible to them. The superiority of the Harrison apple and peach trees is well known. The demand for it can be gathered from the fact that they have over 1,000 acres in growing trees, and budded over three and a half million apple trees last year. They have a record of budding upwards of two and a half million peach trees in a single season. Sixty acres of strawberry plants, grown on new ground, are required to supply their customers annually. There can be no question but that the climate and soil where Harrison's nurseries are located are adapted to producing superior nursery stock. Care in digging and packing has always been a specialty with this concern. They guarantee safe arrival, no matter where the order goes. They inform us that they are now prepared to make shipments of all varieties of apple and peach trees, also strawberry plants, plum trees and asparagus roots. They publish a complete general catalogue which is mailed free to all inquirers.

A Good Shaving Soap.

It is not uncommon to meet people who are always well shaven, but always have sore faces. In most cases the cause is in the soap used. Poor shaving soaps, common toilet and even laundry soaps are used. Nothing but sore faces are to be expected. The practice is wore than unclean—it is positively dangerous. When the very best shaving soaps, such as Williams', are to be had for so little money, there is absolutely no excuse for using unfit articles. If such people would send for the free sample of Williams' soap mentioned in the advertisement elsewhere, they would never go back to common soaps.

Rheumatism Cured

50,000 BOXES Free

Deformity of the hands in general Chronic Articular Rheumatism.

I discovered a positive cure for rheumatism and gout. To introduce this wonderful remedy among the suffering readers of this paper, I have set aside 50,000 boxes for free distribution and every afflicted reader is courteously invited to write for one.

This remedy will cure you when all others fail, besides it is absolutely safe to take and will not harm the delicate tissues of your stomach, like other rheumatism remedies do. This simple remedy has cured many persons who were so decrepit and pain-racked that they could neither clothe nor feed themselves, among them persons of 80 years and over. Recently it cured an old gentleman who had suffered 33 years and whom seven physicians had called incurable. Address

JOHN A. SMITH, 3561 Germania Bldg. Milwaukee, Wisconsin

AGENTS WANTED Men and women are making hundreds of dollars and doing a world of good introducing this marvelous remedy throughout the country. Don't fail to write Mr. Smith today.

Notice to Fruit-Growers.

Now is the time of year to inject R. R. Hite's great Insect Destroyer in your fruit and ornamental trees, as the sap is beginning to start up and it will circulate with the sap to all parts of the tree, and will positively kill all borers or any worm or insect that feeds on the sap or eats off the leaves of the trees, besides making the tree more healthy and vigorous. No fruit-grower can afford to be without it if he wishes an abundance of good fruit, free from worms. All who used it last year, both in this state and California, and many other states, are sending in orders daily for a new supply to use this year and have sent us many testimonials as to its wonderful effects, some of which are published in our booklet, which will be mailed free to any address on application. For the information of those who do not understand our method we will say that R. R. Hite's Great Discovery is an injection and is used by boring a small hole in the tree or root below the surface of the ground and introducing it with a dropper and sealing up the hole with wax. It is a poison liquid and kills all insects but does not injure the fruit. It is put up in two sized packages, one at $2.00 and the other at $1.00, with all appliances necessary, with full directions so any one can use it. It must be sent by express. Agents wanted everywhere. Address

J. B. CULVER MFG. CO.,
211 N. Main, Wichita, Kan.

Ollve's Pride Strawberry.

J. W. Hall, Marion Station, Maryland, advertises this strawberry in The Fruit-Grower, and regarding it he says: "Olive's Pride proved a winner again in 1903. It sold at our place for $5 per crate when the best of other varieties brought only $2.50. It is earlier than Crescent, much larger and holds its size well to the last; berry is a deep red all through; blossom perfect; plant a vigorous grower, free from disease; fruit stalks hold berries well up from ground. It is certainly a promising berry."

Right now is the time to look to the strawberry bed. First of all see that you get right varieties and well rooted plants. After this the most important thing is to have plants carefully packed and to know positively that they are shipped immediately after digging. Harrison & Sons, the strawberry specialists of Berlin, Md., pack for safe delivery and they guarantee arrival in perfect condition everywhere.

Mr. H. F. Stewart, Paonia, Colo., wants to know the names and addresses of firms which manufacture peach graders. Who can advise him? In this connection it might be well to repeat the advice of J. H. Hale in regard to using peach graders, It is to not use them. Peaches are too delicate and tender, he says, to be graded by a machine. Do it by hand, and even then employ girls or women with a delicate touch. But maybe Mr. Stewart wants to try a machine anyway, and he will be thankful for addresses of manufacturers.

"I have never witnessed such a decided improvement in any horticultural paper as there has been in yours."—Fred L. Porter, South Haven, Mich.

An Advocate of Dust Spray.

As you have requested some articles upon the subject of spraying for publication and as I am a strong advocate of the dust process, I take this opportunity to emphasize the advantages of the dust process over the liquid.

Our success in any line of business depends very much upon the effort and attention given. One cannot successfully grow wheat and corn or raise and feed hogs and cattle unless the most approved methods are applied.

There is a vast difference between the methods used when I was a young man and those of today. As in agriculture so it is in horticulture. Forty years ago men planted their orchards and were successful. It didn't require any great effort to raise apples then. But that day has passed. Today we are face to face with difficulties we did not have then. The question is, will we meet them, or shall we say it is no use and give up the batttle? The successful horticulturist is the man who is giving his orchard his best attention. If you don't intend to observe and apply the means necessary to bring good results you had better cut your orchard down and plant in something that will add to your wealth.

The greatest enemies we have to contend with are the codling moth, canker worms and fungi. There is but one way of overcoming these, and that is by spraying. There are but two processes before the grower, the liquid and the dust process. The question is which is the best. An intelligent answer can only come from those who have given both a thorough test. It is only by comparison that we can judge as to merit. I have used the liquid seven years, and the dust compound four and my best results by far have been from using the dust. It is much easier applied, is more thorough, a great saving of labor and cost much less than the liquid. It is the only perfect fungicide known to date. The scab on your fruit is produced by fungus, and is the worst of all enemies to your fruit. In the formula for the liquid Bordeaux mixture, we have 4 pounds of lime and 6 pounds of copper sulphate to 50 gallons of water. In the lime dust you have 25 pounds of powdered sulphate of copper, 25 pounds of powdered sulphur to 1 barrel of lime, slacked into dust with a solution of concentrated lye, 5 to 10 pounds being dissolved in 12 or more gallons of hot water.

Now, what have you in the liquid Bordeaux? Practically nothing except sulphate of copper. Four pounds of lime spread out on 50 to 100 trees amounts to nothing. In the dust Bordeaux you have lime, blue stone, sulphur and lye, every one of them being a good fungicide. Now you have it, 4 to 1.

Water being your conveyor with the liquid process it is impossible to thoroughly distribute your compond. But when lime dust is your conveyor the compound is thoroughly distributed to every part of the tree.

Your insecticide in the liquid compound is 4 ounces paris green to the barrel of water. While in the dust it is anywhere from 5 to 15 pounds. In fact, you are practically without limit. While we have a general formula for dust spray, yet we are to exercise our judgment as to the strength required. Now you have the comparison. It is not overdrawn. Which do you think would be best and what are you going to do? Do something or quit trying to raise fruit. W. D. MAXWELL.

R. F. D. No. 2, St. Joseph, Mo.

Care of Grafting Wood.

I have had some correspondence on the subject of care of grafting wood since my article in the columns of the Western Fruit-Grower, particularly the queries whether the cions would not mold or mildew badly and whether mice would not get into the box and create havoc. The ground is well taken in the last instance, as I am willing to believe if the site was favorable for the bob-tailed meadow mouse, but my location for graft box is a little too open, though under and between some butternut trees. The long-tail field mice do get in a little, but have done no damage, besides sometimes filling a little dirt under the cions which must not be allowed to remain. When I put in the box I put liberal quantities of air slacked lime around and over the box, both as a wood preservative and to prevent mice from troubling. When I have to replace my box with a new one, will obtain some galvanized wire cloth, say 3-8 or 1-2-inch mesh, and either have entirely encircled the box, or at the least have it entirely enclose the under part. If such a box as previously described as ready to put into the hole, had 4-inch strips nailed on around the bottom edges, extending them down three inches and across this wire nailed the wire cloth, and then set down into the excavation upon the earth directly, there would then be at least five inches of open air space between the earth and bottom layer of cions, which is necessary, and no trouble from mice would follow. Regarding the molding within this box, will say that I usually open up once in February in a bright, mild day, take all cions out and expose them to bright sunshine for an hour or two, to dry thoroughly, and replace. When I begin using clons of some kinds, last of March or early in April, I usually have to repeat that operation to dry out the cions and air out the box, but have had no loss or serious trouble on that score. After grafting season is over I never open again until I want to put in new clons late in autumn. I send you under separate inclosure a little of the old apple wood that has been in since November, 1902, of a couple varieties. Orange Sweet and a variety I call "Crow," the original tree 125 years old in Central Pennsylvania. I regret that I did not save some of the two-year wood, but I do not find any of it left in the box. I threw out nearly everything to make room for new wood. I shall use a little of this old wood this spring. Can see no reason why it will not grow. Can you?

FRANK O. HARRINGTON.

Williamsburg, Iowa.

(Mr. Harrington sends the foregoing communication, to more fully explain the article he wrote for the Fruit-Grower on this subject some time ago. The scions which he sent us, and which were kept in his storage box from November, 1902, until March, 1904, were sound and bright and plump, and there was no apparent reason why they should not grow nicely.—Editor.)

Ben Davis for Invalids.

The coming year will give prominence to the kinds of apples grown in the Mississippi Valley. Some condemn the Honest Ben, and others defend him. In our family he needs no defence, and I will say a word for him I never yet saw in print. Much is said about apples being a healthy fruit, and so they are to the most of people, but here and there are found persons suffering from diabetes or other complaints, who can not eat tart or sweet apples, but who can eat the mild Ben Davis. I have known kidney sufferers who eat freely of the well ripened Bens and suffered little or nothing from such eating. I wish this side of the question could be thoroughly studied. What is the experience of other invalids on the subject?

I wish the apple men of Illinois and Missouri would notice this.

Illinois. MYRON B.

Victor von Gemmingen, 715 East Franklin street, Richmond, Va., writes the Fruit-Grower that he desires a position as gardener or in some good nursery. He has just returned from Germany, where he studied the theoretical as well as the practical branches of the business. Those who are interested can address him as above.

The Colorado fruit-growers are hustlers. Dr. J. H. Divine of Pallsade writes us that he attended a meeting of their horticultural society recently, and took along with him a copy of the Fruit-Grower. He secured twenty-four new subscribers in a short time, and sent the list to us. That's why we think so much of the Colorado people—they know a good thing when they see it. Dr. Divine writes that he wants the Fruit-Grower to have 50,000 subscribers, and he will help to this end. Will you help? Send your list today.

J. T. Wallace, Neoga, Ill., says: Peaches seem to be all killed, cherries badly damaged, and the more tender varieties of raspberries and blackberries are also hurt. He says the winter has been very severe, for while the mercury was only 14 degrees below zero, there were only two spells warm enough to melt the ice and snow from November 16 to March 1.

THE OZARK
DUST SPRAYERS
For applying Insecticides and Fungicides to Orchards and Gardens, have supplanted Liquid Sprayers wherever tested.
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last year, sections on which the OZARK SPRAYERS were used showed
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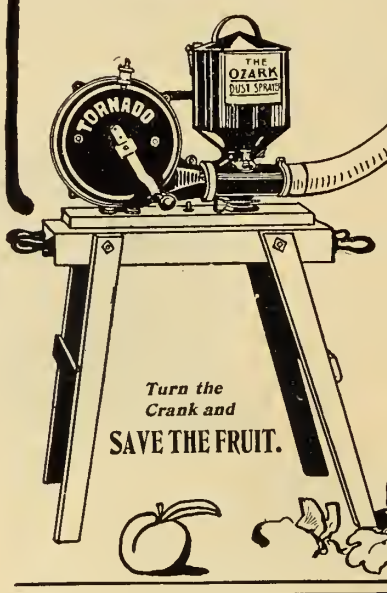

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And are adapted to the smallest Garden or to the largest Commercial Orchard. They are the lightest, simplest, cheapest and most effective of all. Are easy to carry, easy to operate and do the work thoroughly.
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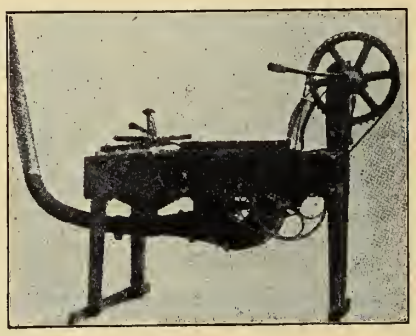
The question has often been asked, "Why the Whirlwind leads?" The answer is: Because the Fruit-grower sees the advantages of it quickly. Because the Fruit Grower appreciates mechanical progress. Because the Fruit Grower will buy the best machine to suit his purpose. Because the Whirlwind Machines have EXCLUSIVE FEATURES only found on them—which convinces the Fruit Grower or the Gardener that they are the Best. As a further conviction of the advantage and value of our Whirlwind Machines, we furnish you a few testimonials from our patrons:

Stanberry, Mo., March 29, 1904. To Whom It May Concern: This is to certify that in the spring of 1903 canker worms attacked my forty acre apple orchard near Stanberry, Mo. I immediately dusted it, using a Kiser Whirlwind Duster, and applied a mixture of lime dust and london purple. I used one pound of purple to fifteen pounds of lime; it had the desired effect, as the worms did no further damage after the dusting. It required about one barrel of lime, and about fifteen pounds of purple. The work of dusting was all done by hired help. In comparing the cost of dusting with spraying by the liquid process, I believe it cost no more to dust my orchard than would have been the cost of pumping from a well sufficient water to have sprayed it with liquid, and I am quite sure the dusting was done in one-fourth the time that would have been required to spray it with liquid. The Whirlwind Duster is, I think, a first-class machine in every respect. Yours truly, Frank Jones, Cashier Farmers and Mechanics Bank.

Willow Springs, Mo., March 24, 1904.—Kiser Whirlwind Duster Mfg. Co., Stanberry, Mo. —Dear Sirs:—Yours of the 22nd inst. received. I am free to say the Duster I got from you March, 1903, was promptly received and tested, and I will state for the good of all concerned, the machine gave entire satisfaction. One of my neighbors wants a Whirlwind Duster, and you may ship me a $30 machine as soon as you can. My neighbor has 2,000 trees. Another neighbor has 2,500 trees (which he bought of me), and if they give satisfaction, I think two more orders will be forthcoming and after trial of this Duster ordered I expect two more will be ordered. Yours Respectfully, W. B. WRIGHT.

Office of Chillicothe Public Schools, G. A. Smith, Supt. Chillicothe, Mo., March 30, 1904. To Whom It May Concern: For several years I have given much thought to spraying machines and the different processes of spraying. I now own two liquid machines and three dusting machines; but after examining, piece by piece, the Whirlwind Duster, made by the Kiser Whirlwind Duster Company, and after seeing it put to the test, I have come to the conclusion that the Whirlwind Duster is the best machine on the market. So I shall use it in my 130 acres of orchard this summer. G. A. Smith, for several years President of Livingston County Horticultural Society.

The Kiser Whirlwind Duster Mfg. Co., Stanberry, Mo.

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Eight months' time was consumed in the preparation of this work and the edition cost over $10,000. All will readily recognize the fact that we cannot afford to distribute indiscriminately and free of charge; but we want everyone really interested in fruit-growing to have a copy, hence we make the following offer:

Send us 50 cents (1 or 2 cent postage stamps accepted) and we will send you one of these handsome books, postage paid. and with it a Rebate Ticket which will permit you to return the book by mail within 60 days, in good condition, and we will return the 50 cents. Or, if you mail to us, within one year, your Rebate Ticket with your order for nursery stock amounting to $12 or more, we will credit you with $1.00 as part payment on your order, and you keep the book FREE.

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The Indian Apple.

In answer to W. M. P., Allendale, Ill., in regard to the Indian apple, I think perhaps I have the same appie in bearing, bought of the Bridgeport (Ind.) nurseries twelve years ago; they sell it. As to Coffey, Indian and Brener, as given by Benj. Buckman of Farmingdale, Ill, there is nothing contradictory. It is an October and November appie and it is a 21st day of March apple as well, windfalls and not cold storage either. This Indian is a Hoosier boy, but an honest Indian. He is a pale green, but at some time he, as his name indicates, is a dull red and then he is yellow, too, and copper colored.

He is large and he is somewhat flat. If you don't keep ground cultivated he will be smaller and will fall off by October 1st, and after a few hot days he gets good to eat; but never mind, pick him up, take him home, place in any old box under the grape vine and when somebody wants the best apple you have just deliver him and then just call up those customers about the 1st of March and ask how were those Indian culls. The answer will be: "They are just gone; they were good apples; lost very few; count me in next year at 75 cents or $1.00 a bushel." Hold on "ye goode friende," one-half or all of the Indian trees will rest this year. He likes to be sprayed; it helps the leaves; but the scab may come and fungus fail and the worm may crawl, but sprayed or unsprayed he comes out the most perfect apple in the orchard; would give $1,500 if my 700 Ben Davis trees were Indian.

The Indian bears full, can be depended on, freeze or no freeze, every second year. The variety makes us more money than anything per tree. Twelve Indians trees bear more than fifty Rome Beauty and sell for twice as much, also more than twenty-six Stark or twenty-five Winesap; makes more per tree than Grimes' Golden; is larger than Grimes', but not so good, but more perfect; is the equal of Senator in quality, but not in color. Let that Kansas friend who did not succeed with Milam try Akin. It won't scab so bad and tree is hardier; it is hardy in Southwestern Iowa.

I set my first Milam tree forty-four years ago (I was not quite six). I made a visit there last year. The tree seemed good for some time yet. At twelve years, with the help of a hired man, I set out 160 trees and in that lot was some Akins and Jeffries. The Jeffries are good for thirty-eight years more, but fire got the Akins. The Akins bore at eleven years.

I was a preacher in Iowa for a number of years and helped select a good many orchards and brought one to bearing in Ida County. Next to seeing men saved from their sins, I love to see apples grow.

JAMES W. CARVER.

Greencastle, Ind.

How to Get New Subscribers.

We have been much gratified at the large number of new subscriptions which have been sent us by our Ohio friends during the past year. Up to a year ago the Fruit-Grower had comparatively few subscriptions in the Buckeye State, but at that time some of our friends began work. Among the leaders was Mr. Wallace Berryhill, of Bellbrook, who sent 100 new subscribers. Mr. Berryhill is still engaged in the good work, and recently sent another list of names. Mr. Berryhill writes:

"All the Fruit-Grower readers here consider the paper a splendid one. It is but little trouble to get subscribers where one can take the time to solicit them, for the Fruit-Grower talks for itself. The last four numbers were 'dandies.' I think I can get some more subscribers. This (Greene) county ought to have at least 1,000 subscribers, and would do so if ten persons would each send a list as large as mine was last year."

Will our other subscribers in this county try to get that 1,000 manes? It can be done easily, if an effort is made.

Here is another man who is at work in Ohio, Mr. G. W. Armstrong, of Lisbon. He is a new subscriber, and writes: "I think the Fruit-Grower excels all others I have ever seen; in fact, it goes far beyond my expectations when I sent for it, as I had never seen a copy until I received the January and February numbers. I will endeavor to place it in the hands of all the fruit-growers I know, as I love the paper and this is a great fruit country."

Mr. Armstrong has been a subscriber only two months, and yet in that time he has sent in two club lists, and says there are more to follow. Now, will not all our readers try to help in this work? The paper is getting better all the time, and we feel that we are entitled to the co-operation of all our readers in trying to extend the circulation and the usefulness of the fruit-grower. Will you not raise your club at once? We are expecting this from you.

Strawberries as a Commercial Crop.

Instead of giving a long detail of getting the ground "rich" with manure or other fertilizers it is the purpose here to give some practical experience in growing strawberries by a scientific system; as to the soil conditions there is no way to tell what food constituents the soil lacks only by experiments. By the growth of the crop is the best evidence as to the plant food supply and plant food ration. If nitrogen is lacking the plant will be reduced in chlorophil, pale green in color, or small in stalk or leaf growth. A bright green color with strong vigorous growth is evidence or an indication that nitrogen is not lacking. If the stalk and leaf growth is in excess of a normal development of the plant, with imperfect bud, flower and fruit development, gives proof of excess of nitrogen. When fleshy, fine flavored fruits with proper texture can be produced, the evidence is clear that the plant foods are in proper ration for that plant, and that potash is in proper ration for plant food.

Plant food rations differ with different plants. Stable manure is good, and should be used whenever available, but the supply is insufficient to answer a system of fertilizing on the average farm. But to cover this subject it is here proper to give a table of the materials used in the commercial fertilizers for the strawberry, viz.: Use 825 to 1650 pounds per acre of fertilizer containing:

Nitrogen .....3 per cent
Available phosphoric acid ....7 per cent
Potash .....9 per cent

Or the following materials may be used with equivalent results.

Nitrogen—
(1) 150 to 300 lbs. nitrate of soda or
(2) 125 to 250 lbs. sulph. of amino., or
(3) 250 to 500 lbs. dried blood.

Available Phosphoric Acid—
(1) 450 to 900 lbs. acid phosphate, or
(2) 375 to 750 lbs. dissolved bone, or
(3) 550 to 1100 lbs. bone meal.

Potash—
(1) 140 to 28 0lbs. muriate, or
(2) 140 to 280 lbs. sulphate, or
(3) 550 to 1100 lbs. kanit.

Now the commercial fertilizer may be substituted with the leguminous crops, and if managed with judgment and skill, will give just as good and satisfactory results. Clovers, cow peas and soja bean are the plants used for this purpose. I wish to say here, that any ground is considered good corn land is strong enough in fertility to grow strawberries. But if leguminous crops are necessary in the preparation of the ground, in a locality where red clover is successfully grown, grow the red clover two seasons, turning it under in October, harrow down and leave until spring, as early as the soil will do to work, thoroughly disk and harrow level, and for field culture, mark the rows forty inches apart and set the plants 18 to 20 inches apart in the row; plant as early in the spring as the season and ground will permit, and rush the planting. And as soon as done planting, start the cultivator, a small toothed cultivator first, last and all the time. Continue cultivating at intervals of six to eight days up to the middle of October, or later if the season is late, and warm and rainy, making a level cultivation, and keep all runners cut off; I mean all runners all season and the second season the same. Now don't all laugh, as I want to impress upon the mind of the reader the importance of growing crowns and fruit stems rather than growing plants to cover the ground and run you out of the field. The second year select plants which have been grown for plants. Plants that set in September are preferred for next spring planting. When you should at the same time form a you have decided to grow strawberries determination to grow only the best, such as will top the market, and the secret of growing the best berries is written work. I do not mean mule work, but scientific work. Those who grow for fruit only will soon realize the vast profit over those who grow for fruit and plants. By growing for fruit and keeping off all runners the writer has produced as much as three quarts per hill, and under the same conditions the same can be done in a large way.

S. H. LINTON.

Des Moines, Iowa.

"Good Enough to Eat."

I must say the Fruit-Grower is a good paper—good enough to eat. All the articles are interesting and to the point. I do not have much time to read but have read the Fruit-Grower thoroughly.—C. H. Main, 60 High St., Norwich, Conn.

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..SAMPLE BOOK V2: Men's Made-to Order Clothing; like V1, but better grades. Suits, $18.00 to $30.00; Trousers, $5.00 to $8.50.
..SAMPLE BOOK V3: Men's Midsummer Outing Suits and extra Trousers, both ready-made and made-to-order, showing samples. Prices, $3.75 to $12.50. Also Alpaca and Serge Coats and Vests, Linen Dusters, etc.
..SAMPLE BOOK V4: Men's Spring Overcoats and Rain Coats, both ready-made and made-to-order, showing samples, Overcoats, $7.50 to $16.50; Rain Coats, $6.50 to $22.50.
..SAMPLE BOOK U: Youths' and Boys' Clothing. Samples of Suits and Trousers, ages 9 to 19, with illustrations showing styles; also describes and illustrates styles from 3 to 8 years, including Children's Washable Suits.
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Fire Blight of Pear and Apple

At the meetings of a number of horticultural societies one of the forbidden subjects is the discussion of pear blight—or "fire blight," as it should perhaps be called. The discussion of the subject is forbidden because of the fact that growers hold so many different theories as to the disease and the ways to combat it, that at the end of the discussion the growers are as far apart as ever. The Idaho Experiment Station has issued a press bulletin on this subject, however, which will be found interesting and profitable, for it represents the latest investigations of this disease. The bulletin is prepared by Prof. L. F. Henderson, botanist of the station, and follows:

Spring is now upon us,—the time when the careful horticulturalist must be preparing to combat those many ills incident to fruit culture, whether of an insect or of a fungous nature. Of all these probably the fire blight is the worst and most to be dreaded.

The name "Fire Blight" is the proper one to use; it should not be called "Pear Blight" for two reasons. In the first place it is liable to be confused with the pear-leaf blight, a disease which attacks the leaf of the pear, and incidentally injures the fruit. In the next place this disease is not limited to the pear; it is fast becoming too common on the apple as well, in our state. Nay, in many states it attacks all of the pomaceous fruits, such as pear, apple, quince, crab, and hawthorn. Three years ago, this disease was unknown to the writer in the southern part of the state; today, there is hardly an orchard in certain districts which does not show some blight, and in many it is very serious. In Northern Idaho it has been in our pear orchards for over ten years, but luckily it has hardly ever attacked the apple. From the devastation this disease is causing in the Southern Idaho apple orchards, we cannot expect that the northern portions of the state will be long exempt.

Historical.

Though this trouble has been known as working havoc in orchards for a century or more, it is only in comparatively recent times that its true nature has been well understood. For a long period of years the discussions of this trouble were of such a theoretic nature, that many horticultural societies forbade its being brought up in their meetings, unless someone had something of absolute knowledge to offer about it. Various causes were ascribed for its presence, such as "sour sap," "atmospheric conditions," "soil conditions," and "effects of various fungi." In 1878, however, Professor Burrill of Illinois discovered the true cause and announced his discovery to the world. This was found to be a bacterial disease due to the presence of myriads of little germs in the inner bark and cambius. The germ was called by Prof. Burrill Micrococcus amylovorus from the eagerness with which it seizes upon and devours the starch in these tissues. From the subsequent studies of Arthur at the Geneva Station in New York, and of Waite in the United States Department of Agriculture, we know how this germ or bacterium lives, reproduces itself and is carried from tree to tree.

Appearance of Blight.

Luckily the disease is a very conspicuous one, which enders its presence in an orchard the more inexcusable when well known. It affects twigs, leaves, young fruit, and even the branches or trunks. From the experiment of Waite, it has been found that it cannot attack the plant through the uninjured bark or leaf. It can, however, gain entrance through any injured place on trunk, limb or even leaf. Its most common points of entrance are natural ones. These are the young growing tips of the branch, the stigma of the flower, or the glands which secrete nectar. Therefore, the "flower-blight," the "twig-blight," and the "branch or trunk blight" are all forms of this disease.

In the first, the young twig, especially if it be growing rapidly, turns black in both leaf and stem, and wherever the leaves are blighted, they remain black and dead through the ensuing winter. This black, piratical flag is the surest evidence of its presence.

In the "flower blight" a whole bunch of flowers, or frequently every bunch upon the tree will be affected, and dying back to the beginning of the spur, hold the blackened flowers and young fruit also through the entire year. This is the most common form on the apple.

Frequently an entire limb or even the trunk will be affected for only a short distance, while the top will still be entirely free from the disease, and this can only be understood when we speak of how the disease is spread.

More frequently upon the pear several limbs and even the whole trunk will be affected, and when this is the case the tree should be cut out root and branch.

Means of Dissemination.

If the young shoots of a tree affected with blight be examined, small drops of sticky, thick fluid will be found exuding from the edge of the diseased area. If one of these drops be examined with a high power microscope, myriads of little oblong bodies will be seen, some separate, some in short chains. These are bacteria. Arthur proved that these bodies, inoculated into a sound tree by a needle, would produce the disease; Waite proved to us beyond dispute that insects, especially bees, are the main instruments in their dissemination. They are attracted by the viscid sap, suck up part or all of the drop, and then carry thousands of these germs with them to inoculate flowers, shoots, or wounded places in the bark. Undoubtedly heavy currents of wind assist in spreading the disease and probably account for the commonness of "twig blight." The question comes right here: Shall I keep bees if I have an orchard? Certainly, and for two reasons. First, the honey, and the revenue derived from it, are often no small object to the farmer. Second, the bees are absolutely needed to assist in proper cross-fertilization or pollination of the flowers. This leads us to the subject of remedies, for preventives there are none.

Remedies.

As soon as the bacteria are carried to young flower or wound, they effect entrance, and living upon the sap and starch, multiply rapidly. If they gain entrance along a limb or trunk, they live in the inner bark and cambium-layer,—that layer which adds yearly to the growth of both bark and wood.

It can readily be seen from this that they are well covered, and consequently spraying does no good. The only remedy thus far found has been and is the careful and continuous use of the saw and pruning knife. All diseased shoots and limbs should be cut off at from 6 inches to 1 foot below the place of evident infection or injury, as the bacteria have always gone down deeper into the limb than seems to be the case from the outside. Many pruners have the habit of splitting down the bark to see how far the disease has proceeded, but this practice is to be condemned, as they never can see how far the disease has proceeded, and the incision of the knife may carry the bacteria from diseased to healthy tissues. If the blight is bad in either the pear or apple orchard, the knife or saw should be sterilized each time it is used, by either passing it through a flame, or dipping it into weak carbolic acid-water, or into kerosene. The pruned limbs or fragments should be collected and burned and both pruning and burning should be done mainly in the dormant season, before the sap has started, the bacteria have awakened, and the bees are visiting the orchard. This is the best time for pruning and burning, but not the only one; it should be done whenever the disease makes its appearance. All large wounds should be painted over with paint as soon as the tree is trimmed, to prevent the re-inoculation through the exposed tissues. Where the blight is bad, even young shoots or water-sprouts should have their cut bases painted, for it has been shown time and again that the limbs and even trunks have been inoculated through these cut stubs.

The pear is much more easily pruned for this disease than is the apple. On the former it commonly manifests itself in dead or dying shoots, limbs, or trunks, which can readily be cut away below the progress of the disease. On the apple, however, it is

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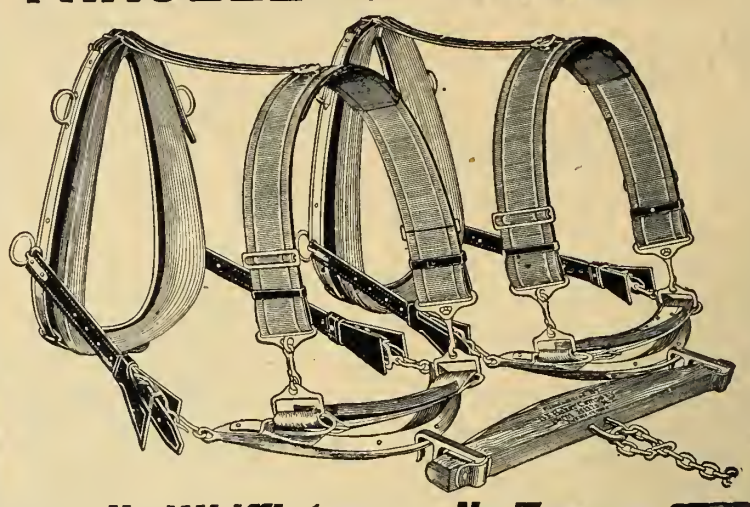

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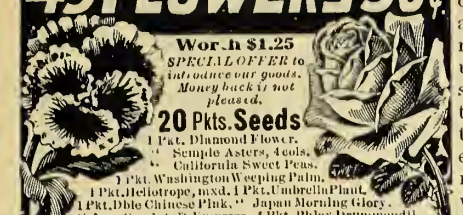

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commonly the shoots all over the tree, and especially the fruit spurs and their clusters of flowers, which are most affected. Pruning here becomes a much more difficult and even serious undertaking. Where only a few shoots and fruit spurs are affected these can be cut away close to the tree, and the wound immediately covered with paint. Where, however, almost all of the fruit spurs on the whole tree have died, the best way is to cut off entire and large limbs, cover the wounds with paint, and stimulate the production of new shoots and subsequent fruit spurs. Many such trees are to be found in and around Boise, New Plymouth and many other places. In the former place my attention was called by Inspector McPherson to a very interesting though sad evidence of the efficacy of bees in spreading the disease. All the splendid large apple trees near the hives were without exception seriously injured by blight, while as we proceeded on radii from the hives the blight grew less and less, and almost disappeared on the edge of the orchard farthest from the hives.

Other Helps.

It has been noticed that rapidly growing trees are more subject to blight than slower growers, and that those in low ground or "swales" are more subject than those on drier ground. Orchards should therefore be planted on well drained land, and should not be stimulated by too much water or too much fertilizer.

Though all of the varieties of the pomaceous fruits are subject to this disease, as said before, some varieties have been found more subject to the attacks of blight than others. Of the apples, the crabs of all kinds have been found very prone to blight. Amongst the pear, in most places, the Anjou, Angoulems and Seckel are most resistant. Bartlett and Flemish Beauty are less so, while the Idaho, Clapp and Winter Nellis are very subject to blight.

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Still Condemns Ben Davis.

Recently we asked Mr. B. F. Wampler of Jasper County, Mo., how he would reconcile his course in growing Kieffer pears, Elberta peaches and Morello cherries, while condemning Ben Davis apples. Mr. Wampler replies that he was one of the first to condemn Kieffer pears, but now that he has learned how to ripen them they are all right, and he eats twenty-five of them to one Ben Davis apple. He says Elberta is a better peach than Ben Davis is an apple, whether eaten raw or cooked, and that the demand for these fruits is increasing, while the demand for Ben Davis apples is decreasing. Mr. Wampler says that there should be an effort made in the direction of producing better apples, for the days of the popularity of Ben Davis are numbered.

In this same connection P. M. Kiely of St. Louis suggests that a vote be taken of the members of the Apple Consumers' League, to ascertain what the members think of Ben Davis. He also says that it is safe to say that when Apple Day is observed at the World's Fair, the fruit-growers will not distribute Ben Davis, in order to encourage a larger consumption of this fruit.

But Mr. Wampler and Mr. Kiely must not overlook the fact that one of the points in favor of Ben Davis is that it is a good cooking apple, and that it will ship well and keep well. It would be unfair to subject Ben Davis to the same tests which would be applied to some other varieties, which are grown for different purposes. As for distributing Ben Davis apples on Apple Day, which will be celebrated on Sept. 27, that would be out of the question. Even the most enthusiastic admirer of old Ben would not recommend that it be eaten so early in the season. Old Ben bides his time and waits until the more tender sorts are out of the way—until they can't stand the pace, as it were—and then he comes into possession of his own. Yes, we need better apples than Ben Davis, and they will come in time, but we ask again, as we have asked many times before: What apple now grown will take the place now occupied by Ben Davis?

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Paper Berry Boxes.

Several correspondents have inquired in regard to the paper berry boxes which are offered for sale, and which have been used to some extent for the past few seasons. Mr. Jesse Mohler of Warrensburg, Mo., relates his experience, in which he says that in damp weather, when the berries are full of juice and the air is full of moisture, the boxes will not hold up for shipment. In a dry season, he says, they might be all right, but they were not satisfactory last year, and sends statements from commission men in Omaha who handled his fruit to substantiate his statements. This is likely true, although thousands of the boxes were used in St. Joseph, on local market, and gave satisfaction, although shippers did not want to buy berries packed in the paper boxes. We have heard that the manufacturers have improved the boxes over last season, and it may be these faults have been overcome. But those who intend to ship berries will do well to experiment carefully before risking great quantities of fruit in any kind of untried packages.

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A Strawberry Talk From Columbia.

In the Kansas City Times of the 7th of March is an article, with no name attached, that should not pass entirely unnoticed. Such expressions as these: "With an increased acreage in every county in the state;" "The old beds are in excellent condition." The writer quotes W. L. Howard, of the University, as predicting that "Missouri would lead in strawberry growing in a few years, as soon as the new plants are old enough to bear." How many years does it take for a plant to be old enough to bear? Two, three or five? One is surely not a few. That a market gardener, or any other man can and does grow from $300 to $560 worth of berries on an acre is not at all startling, but his next paragraph is: "When we remember that the season is but twenty days long and that the beds require little care outside of the fruiting season, this appears to be an enormously large profit." This paper farmer reminds one of the Irishman who wrote to his friend in Ireland, "Come to America, Pat, it's a great country, nothing to do but carry a hod of brick to the top of a four story building; there's a man up there does all the work." In our case, picking and selling the berries. Now if this man, who volunteers to tell us that "in a few years when the new beds begin to bear," etc., will come down into the real strawberry region of Missouri or Arkansas and try to wear out a hoe-handle from April until October, with the sun burning his back, until at times he thinks his shirt on fire, his hands calloused and back and limbs tired, I doubt if he would ever again make such ridiculous statements as recited above.

AN ARKANSAS GROWER.

We do not know the author of the article referred to, but it is safe to say that he did not correctly quote Prof. Howard in regard to Missouri's strawberry crop, "when the plants all get of bearing age." For of course, Prof. Howard knows too much about the strawberry business. And having come from that part of the state where strawberries are grown in great quantities, he also knows that the care of a strawberry patch is not a summer's dream. These are the sentiments of the man who wrote the article, perhaps, who was more intent upon filling space than in telling the truth about the business.—Editor.

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The Garden

Potatoes.

Potatoes do best on low moist soil and it can not be made too rich. Clover sod is the best if it can be had. Heavy clay land is the poorest. It should be fall plowed if possible and then worked over in the spring with a plow or disk. Plant very early. I have sometimes planted before the frost was all out of the ground. I cut the seed in pieces about half the size of an egg. Generally two eyes, one would be enough and more don't hurt. It depends more on the size of the piece. I like best a chunky piece with the eye as near the middle as possible. Small pieces do not come as quickly as larger ones, nor grow strong.

Plant in rows about three feet apart and a foot apart in row. I cover about four inches deep, but that depends some on the character of the soil. If the soil is heavy, do not put on so much. If you have as much as three acres to plant, it will pay you to buy a planter. It plants much faster than hand work and much better. Besides, the plants are in a straight row which makes the tending much easier.

Start harrowing before the potatoes are up and keep at it until the plants are three or four inches high. This keeps the little weeds down and the soil loose. After that use the cultivator and weeder alternately till the crops is laid by. The big crop I grew was tended four times with the cultivator and five times with the weeder. Do not go deep, as the roots lie close to the surface and if they are damaged the plant is starved just that much. Last time through I use a one horse cultivator with sweeps on and just shave a little ways under the surface. This leaves a loose dust mulch and gets all the little weeds.

For digging, I use a Dowden digger. It takes four horses and runs hard, but does the work. It leaves the potatoes all on top of the ground and the ground level. For small patches a lister is the best thing.

Varieties.—I prefer the early potatoes. Some years the late ones will do all right, but most of the time they miss out in this climate. The potatoes of the Early Ohio class seem to do the best one year with another. Pure seed of either the Early Ohio or the White Ohio are the money makers here. Use northern seed by all means. Home grown seed is dear at any price if you can get the other. The best seed comes from the Red River Valley of the North.

Sweet Potato Culture.

Sweet potatoes can be grown much easier if their nature and requirements are undestood. It must be remembered that sandy clay soil contains the elements required for their best development and that rich black loam, while it will produce a heavy growth of vines, will give a crop of poor, stringy sweet potatoes.

The ground should be thrown up in ridges with a lister or plow, the top slightly flattened, and the plants set from 12 to 16 inches apart on the middle of the top ridge. The object of the ridge is to run off the rain and admit the heat of the sun to the roots, as the sweet potato is a semi-tropical plant and we make the conditions as near as may be like the southern climate. A moist time, if not too cool, is favorable for setting the plants, but after they are once started a dry season is the best for them.

Soon after setting the plants, the flattened ridge should be stirred on top with a wheel hoe or hand hoe or rake. The sides of the ridges can be worked with the horse hoe or cultivator, followed in a few days with the lister, which may readily be drawn by one horse, throwing back to the ridges the dirt that has been torn down by the cultivator. Continue this at frequent intervals till the vines cover the ground and meet across the rows. Use the lister the last time to lay them by.

The row may be kept free from weeds with but little hoeing if done at the right time. Later in the season the scattering weeds that come in can be easily pulled by hand. Slightly disturbing the vines in tending does little or no harm when they are young, but later you must not disturb them by lifting or trimming. Let them take root as much as they please, as the vines thus take up nourishment and carry it to the potatoes.

Dig in dry time if possible and cure in a dry airy place. After a week or two of curing, put them away in a warm dry room and cover with dry sand or road dust. Dry oats may be used instead. Thus fixed they will keep all winter if kept warm and dry. Cellars are usually too damp and cool. A place near a chimney in an upstairs room is better.

A sweet potato bed is made almost like an ordinary hot bed and the same principles apply to both. Start the bed and put in the seed potatoes about five weeks before you will need the plants. As you will need the plants to set about May 15 to 25 in this latitude, the bed should be started in the first half of April.

Notes From a Seedman's Trial Ground.

The peaches are alive, and for that be many thanks. I have just been examining the buds carefully and they seem to be mostly good. Iowa is generally counted as outside the peach belt, but it looks now like we would have as many peaches as anybody this year. The Japanese plums seem to be all alive, too.

The blight has finally got the cherry trees. We have fought it with sprays for two years, but it is no use and we are now grubbing out all the Morello, Wragg, and sweet cherries. The Montmorency and Early Richmond we are leaving, in hopes that they may pull through yet, but I rather doubt it. They look sick. This cherry blight is a serious matter and it looks to me like cherry growing in Iowa, at least of the late cherries, is doomed for some time to come. Wild Goose plums seem to have some sort of a twig blight too and we will grub them out. They have been set for 12 years and have never made but two crops.

This ground will be thoroughly cleared and planted to potatoes. Next year it will be put in strawberries and after that maybe it will be put in cherries again. The blight may have worn itself out by that time.

I find there are a few plants of the Crimson Clover alive yet, where a big snowdrift covered them. I will take them up and make a row of them somewhere and see if I can save some seed. It should be valuable if there is anything in the theory of the survival of the fittest. I have not given up the idea of Crimson Clover for Iowa yet.

Like most other farmers, I have always believed that seed corn should be kept warm and dry, but today in walking across the ground where I had the corn tests last year, I found an ear lying on the ground, been there all winter, and it was sprouting to grow. It looked like every grain would grow. Now, if that is the case, what does our theory as to the care of seed corn amount to anyway?

I have just being examining some seed onions and onion sets that I piled out doors last fall and covered with a few inches of straw and dirt. The idea was to let them feeze up and stay frozen all winter. They are in perfect condition. I never saw onions brighter or sounder. Now, if an onion in the house freezes it is gone up, why is it that these outdoors protected by only a few inches of dirt, were not not hurt by freezing?

Some potato onions left out last fall by mistake, right where they grew, are all right and coming up nice and green. This is my first year with them and I had no idea they would live out that way. It seems to me they are a good thing and if they do as well this summer again as they did last summer, I am strongly in favor of them.

The Rudebekia (Golden Glow) is a comfort. Some plants need petting and fussing with, but not this. It is up and looking nice now and bids fair to drive out even the weeds. It asks

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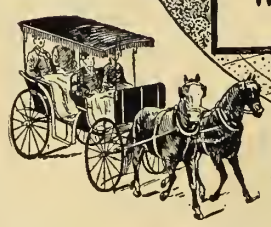

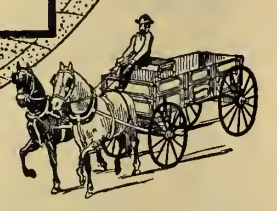

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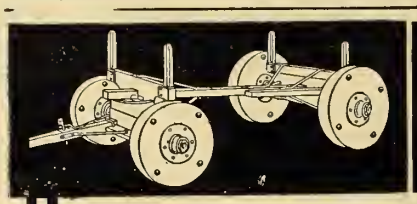

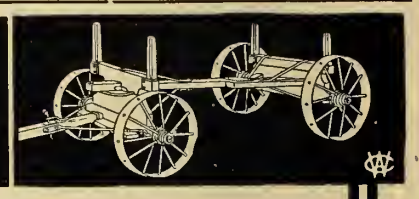

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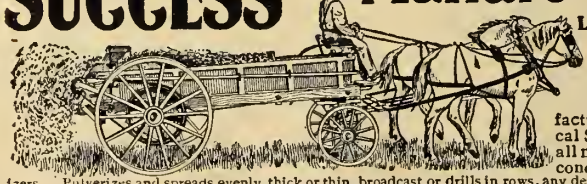

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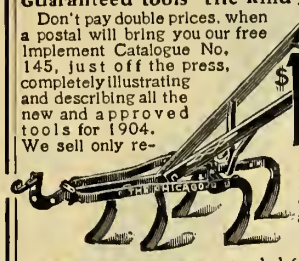

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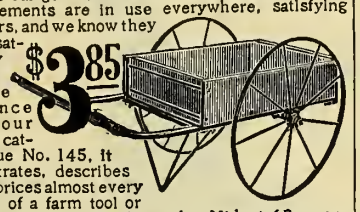

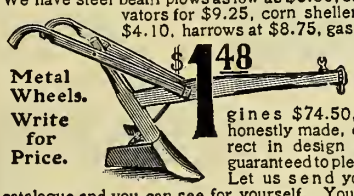

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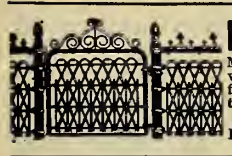

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Geneva Cooperage Company. Geneva, O.

no favors of anything and even if it does look rather coarse, I admire its grit and will give it plenty of room.

There seems to be an idea that potatoes from the irrigated country of Colorado are no good for seed. Now I can't see why that should be the case, as they seem to be well matured and sound. I don't believe there is anything in it and I expect to get samples this spring and try them alongside of seed from here and from the North. I would be pleased to have any of the Western Fruit-Grower readers in the irrigated country send me samples and write me for some of mine in exchange. We can tell whether they are good seed or not.

HENRY FIELD.

Shenandoah, Iowa.

A Plea for Intensive Soil Culture.

The suggestion of offering a prize for the best report of gardening in 1904 would certainly be a good thing. It need not nor is it reasonable it would lessen, but should surely increase the interest of practical fruit-growers, and broaden and extend the field of usefulness and enlist the support of many whose circumstances do not admit of fruit growing exclusively, including not only market gardeners and owners of town and city lots, but also farmers, who for their own good as well as that of their families, need just such information. It certainly is more commendable from a moral and really financial point of view, than the usual "guessing contests," or even the offering of sickly immature hot-house grown novelties, as schemes merely for increasing subscriptions; because it would likely have an educational influence for good. And that is badly needed all over the country along lines of intensive culture and in towns and cities also.

The natives of this country were dispossessed of their lands by the whites, mainly on moral grounds as a reason and their right to do so by the whites, because the Indians did not use the land. The neglected, unused acres on farms all over the country, and the weed patches in the backyards that ought to be real gardens of use and beauty not only in the country, but in towns and cities, prove that something is needed to better existing conditions. If men who loaf about town and whittle dry goods boxes, could by any means be aroused and made to realize the possibilities of their own back yards, it would be a great public benefit, as well as better living for themselves and families. Reports of actual results in gardening might also give some pointers to retired farmers, fruit-growers and professional men, many of whom are already disciples of intensive cultivation but need and want to know more as to best crops and means for keeping up during the season, a constant succession of crops. By all means then, go ahead with your prize for best garden report in 1904. DAVID EMERICK.

Paris, Ill.

Two Common Scale Insects.

Since the Fruit-Grower published the article on San Jose scale, we have received a number of specimens of scale-infested twigs from various sections. Some of the twigs were infested with the true San Joe scale, but most of them had the oyster shell scale, and a few the scurfy scale. These scales are described in a newspaper bulletin recently issued by the Ohio Experiment Station, so that one can readily distinguish one from the other. These two more common scales are referred to as follows:

"The Oyster Shell Scale—This is a reddish or grayish brown scale, about an eighth of an inch in legnth, pointed at one end and curved in shape, suggesting a minute, elongated oyster shell. Its winter form is a hard scale, covering and protecting a number of minute, white eggs. These eggs hatch during the fore part of June, and the yellowish young crawl about for a few days and then fix themselves by inserting their beaks in the bark and begin sucking the sap. At this time they may be destroyed by spraying with kerosene emulsion, the formula for which is given in the Station spray calendars, which are sent free on application. Experiments made by the Canada Experiment Farms have shown that this scale may also be controlled by the use of lime mixed with water at the rate of one or two pounds of lime to the gallon of water. This should be done as early in the winter as possible. The lime loosens the scales, after which the rain removes them and destroys the eggs.

"The Scurfy Scale—This insect is somewhat smaller than the oyster-shell scale, and is more nearly round in shape. It is more conspicuous, because of its white color. Its habits and the means for its control are similar to those of the oyster-shell scale.

"Neither of these scales is likely to cause much injury in orchards which are thoroughly sprayed with Bordeaux mixture."

What Our Subscribers Say.

J. L. Marshall, Lexington, Mo., sends another club of new subscribers, making about forty he has sent us recently. He adds: "You ask me how I like the January number. Well, it is simply out of sight. The only complaint I have had is from our rural carrier and he said he wished I would quit making up clubs for the Fruit-Grower, for the January number was so heavy it came near breaking his wagon down."

It seems that nearly all of the subscribers Mr. Marshall sent, as well as a great many others, are on one rural route, and the carrier naturally felt the load.

* * *

J. S. McMath, Dallas, Texas, says: "I received the first copy of The Fruit-Grower, and am agreeably surprised. I had no idea when I subscribed but that it would be like the other little sheets which are going around. I will get some subscribers for the Fruit-Grower."

No, the Fruit-Grower is not like any other paper—it is the best of its class, our readers say and they ought to know, for they have helped to make it so.

* * *

When you send clubs of new subscribers to the Fruit-Grower, or even when you send names to which we can send sample copies, do you ever think what a favor you are doing the persons whose names you send? Listen to what G. S. Kemp, King City, Mo., says:

"Some kind friend sent you my name for a sample copy of the Fruit-Grower, and after looking it over I must say I am under many obligations to the person doing so. I had no idea you were publishing so valuable a paper, and you may count on me as a subscribed to The Fruit-Grower as long as I am in the fruit business, as I do not think I can afford to be without the paper."

Now, will you not send us that club of new subscribers today, and not only help your neighbors, but at the same time help us in our work of trying to make the Fruit-Grower even better than it has been heretofore? Send it today.

* * *

M. D. Hornbeck, Denver, Colorado, writes: "The Fruit-Grower is a great paper. It is not only good for the fruit-grower, but for other people as well. I am a minister and get many apt illustrations from the paper for my sermons. And what is better for the people on Sunday than good fruit?"

Right you are, Brother Hornbeck. While we have not tried to make the Fruit-Grower especially an inspiration for sermons, we are glad if it has had this effect. And nothing is better for the people on Sunday than good fruit—and nothing is better for them on any other day of the week

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Poultry Department

Cost of Producing Eggs in Winter.

The Experiment Station at Cornell University has recently reported a series of observations made by Prof. H. H. Wing on the amount and cost of food consumed and number of eggs produced during the four winter months by a number of flocks of hens in different parts of the state. These observations were made in co-operation with practical poultry raisers, the purpose being "to get at the average cost of eggs under ordinary commercial conditions. The results, briefly summarized, were as follows:

"In the seventeen weeks from December 1, 1901, to March 29, 1902, and in the similar period in 1902-3, in 29 flocks, representing 10 owners and 5,200 fowls, the daily average production of eggs was 22.8 per 100 fowls. During the same period the average food cost of one dozen eggs was nearly 18 (17.7) cents. The flocks that laid the most eggs during December and January laid most eggs also in March. The egg production of pullets was notably in excess of that of hens, particularly in the earlier period, when the price of eggs was highest. The average cost of feeding 100 hens for 17 weeks was $35.33. The average value of product exceeded the cost of food by $16.13 per 100 fowls."

Commenting on the results, Professor Bailey says: "A most instructive feature of these records is the immense range in the cost of producing eggs, a range that runs practically from 6 cents to $6 the dozen. On examination it is found that this remarkable range is not correlated closely with breed, character of building, or kind and quantity of food consumed, although these factors have an influence. One cause of this difference seems to be a difference in the hens themselves. Some hens are good layers and some are poor layers, as some apple trees are good bearers and some poor bearers. What the reason is of this difference in what we call individuality we do not know, but it is probable that individual fowls may stamp their capabilities upon their progeny as markedly as individual cows may transmit good or bad milking qualities. At all events, it is not sufficient that the poultry man pay attention to housing and feeding alone. He must also give attention to breeding, choosing, hatching eggs from parents of known performance."

Weeding Out Unprofitable Hens.

Perhaps no one thing has been so much discussed among poultry keepers in the past few years as has the subject of weeding out the unprofitable hens from among the flock. While farmers were aware that not all cows of a given breed produce the same quantity of milk, and therefore are not so valuable, a great many have ovrelooked th efact that there is this same difference among hens. Some will lay a great number of eggs in a year, and others will lay very few. The flock as a whole may pay a profit, yet the industrious hens have to carry the load of the unprofitable ones.

A number of the experiment stations are making an investigation of this subject. Trap nests are used, by means of which every hen is given the credit for the eggs she lays. The egg-laying contest which has been conducted in Australian and American hens is an indication of the interest in this matter. At the Maine Experiment Station some interesting points were brought out through the use of the trap nests. In a series of experiments which were begun four years ago a number of birds which had been shown by careful trap-nest records to have yielded 200 or more eggs per year, of good shape, size and color, were selected for foundation stock, upon which, with the additions made to them in succeeding years of birds of similar quality, the breeding operations were to be based. Of these experiments Professor Gowell says:

"It is yet too early to report what the results of this work are to be. Sufficient time has not elapsed since beginning the tests to increase egg production or establish claims of increased productiveness. During the four years in which we have been selecting breeding stock by use of the trap nests we have given full year tests to over a thousand hens and have found among them 35 that yielded from 200 to 251 eggs each in a year. Several have each yielded only from 36 to 60 eggs, and three have never laid at all, to the best of our knowledge. A study of the monthly record sheets shows not only great differences in the capacity of hens, but marked variations in the regularity of their work, some commencing early in November and continuing to lay heavily and regularly month after month, while others varied much, laying well one month and poorly or not at all the next. We are not able to account for these vagaries, as the birds in each breed were bred exactly alike and selected for their uniformity. All pens were of the same size and shape, and contained the same number of birds. Their feeding and treatment were alike throughout."

The Chicken Mite.

Sitting hens and young chicks are most attacked by this pest, which is familiar to all persons who have had anything to do with poultry. The insect is generally distributed throughout the world wherever chickens are raised. The adult mite is of a light gray color, with dark spots showing through the integument, and is about one millimeter (less than four-hundredths of an inch) long. When filled with blood the color of the mite is decidedly red. This insect attacks all kinds of farm poultry, including pigeons, and also wild birds which nest about barns, especially swallows. Occasionally it infests man, horses, and other mammals, producing symptoms of scabies by its bites.

The usual habit of the mite is to attack fowls at night and to hide in cracks and corners or under rubbish by day. In exceptionally bad cases of infestation mites remain on the fowls during the daytime. Often, however, an examination of fowls during the day will fail to reveal the presence of any mites, although the same fowls are badly infested at night. As stated above, young chicks and sitting hens are most subject to attack, and as the season for hatching approaches the matter becomes of interest to every poultry raiser. At the Mississippi Experiment Station the mites were observed "so numerous that they actually hung in festoons to the sides of the nest boxes." At this station and also in Iowa the chicken mite is considered one of the most formidable difficulties in chicken raising. At the Iowa Station sitting hens were occasionally killed outright by the mites.

Several remedies have been suggested for the control of the pest. The first of these is cleanliness. The presence of filth, such as droppings, rotten eggs, or other rubbish, is favorable to their multiplication, as is also careless construction of buildings, which furnish hiding places for the mites. The division of entomology of the United States Department of Agriculture recommends the destruction of the nests of swallows and pigeons about poultry houses, the removal of rubbish, provision of a dust bath for the fowls, and spraying the houses and roosts with kerosene, kerosene emulsion, benzine, gasoline or whitewash, or dusting with carbolated lime. Dr. D. E. Salmon recommends dipping infested fowls in a 1 per cent solution of carbolic acid for one minute, or in

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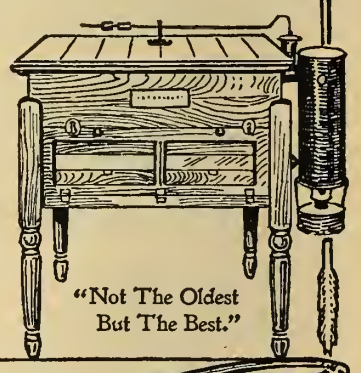

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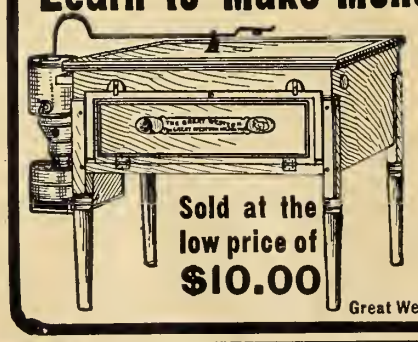

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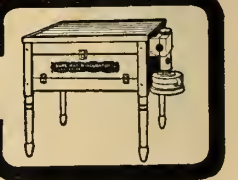

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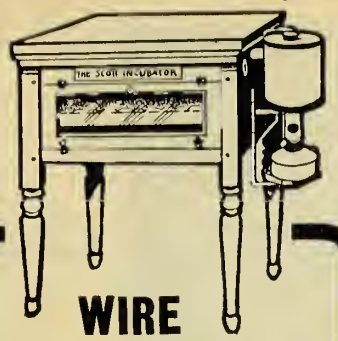
200-Egg Incubator For $12.80 Fully Guaranteed

The wonderful simplicity of the **Wooden Hen** and the greatly increased production forced by its immense sales, makes it possible to offer this perfect hatcher for **$12.80.** Self regulating and guaranteed to hatch as large a percentage of eggs as any other hatcher at any price. Send for the free illustrated catalogue with 14 colored views. **CEO. H. STAHL, Quincy, Ill.**



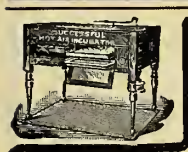
WIRE SCREEN NURSERY FLOOR

This exclusive feature of the Great Scott Incubator is of great utility. A burlap carpet is laid on this floor which is easily removed when soiled; besides, it gives the little chicks a firmer floor than burlap alone. This valuable feature is not the only one peculiar to the

Great Scott Incubator

It needs no applied moisture—is self regulating—supplies moisture and ventilation automatically—needs little attention—and gives high per cent hatches. Beginners make money with a "Great Scott" from the very first. Write for our new catalogue—it's interesting.

Scott Incubator Co., Box 95 Indianapolis, Ind.

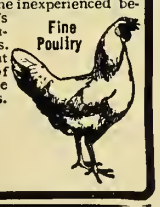


No Guessing

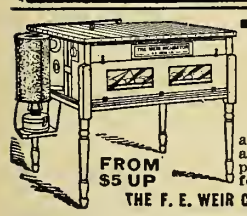
You know in advance what will come if the eggs are fertile when you use the self-regulating

Successful Incubators and Brooders

The machines for busy people and the inexperienced because they run themselves. That's the unqualified experience of thousands. The same under all conditions. Eastern orders have prompt shipment from the Buffalo House. 100 pens of Standard fowls. Incubator catalogue free, with poultry catalogue ten cents.



Des Moines Incubator Company, Dept. 553, Des Moines, Ia



THE WEIR INCUBATORS AND BROODERS

are up-to-date, well-built and low-priced. We sell poultry supplies too. Send for our Incubator Book.

FROM $5 UP

THE F. E. WEIR COMPANY, LIGONIER, IND

CHICKS THAT LIVE

get strong and healthy—gain steadily in weight, are chicks hatched in Reliable Incubators.

The Reliable

provides automatically a constant current of odorless, warm air at a uniform temperature—chicks pip, hatch and thrive under its nature-like conditions. Send 10 cents and get our 20th annual catalog—full of poultry information.

Reliable Incubator and Brooder Co., Box 5-150, Quincy, Ill.

THE MODEL INCUBATOR

(Not the Cyphers b. name.)

contains all my latest improvements, and is warranted to out-hatch my older inventions which still bear my name and is made by another firm. Don't get this new and old machine confused. See that your purchase bears the name "Model" with my signature through it. Send for my new catalogue. It is free.

Chas. A. Cyphers, 39-47 Henry St., Buffalo, N. Y.

Never Disappoints

When you put eggs—fertile eggs into

Ormas Incubators

you are never disappointed with the results. Not only hatches them all; but hatches chicks that are strong, lively and vigorous. Guaranteed. The cheapest, good incubator made. Catalog Free.

L. A. BANTA, LIGONIER, INDIANA

$9,000 Poultry Catalog

40 kinds Turkeys, Geese, Ducks, Chickens, fowls and eggs cheap. 100 grand pictures, 20 house plans. We make hens lay, cure disease, etc. Send 10 cts. for mailing catalogue.

100 page Incubator Catalog free.

Incubators 30 days free trial

J. R. Brabazon Jr. & Co., Box 111 Delevan, Wis.

This Lightning **Lice Killing Machine**

kills all lice and mites. No injury to birds or feathers. Handles any fowl, smallest chick to largest gobbler. Made in three sizes. Pays for itself first season. Also *Lightning Lice Killing Powder, Poultry Bits, Lice Murder, etc.* We secure special low express rates. Catalog mailed free. Write for it.

CHARLES SCHILD, Ionia, Mich.

$12.00 Buys a Hoosier Incubator and Brooder. No better made. Easy to run, hatches sure. Satisfaction guaranteed or your money back. Catalogue free. **Hoosier Incubator and Brooder Co., Columbia City, Ind.**

Eggs, $1.00 for Fifteen

From three popular breeds: Silver L. Wyandotte, Light Brahma and Barred Rock. Illustrated circular free.—DOW BROS., Stockport, Iowa.

ACME FRUIT AND POULTRY FARM.

White Leghorns, extra stock, direct from famous N. Y. best laying strains. Ckls., pullets and eggs at $1.50. Hens have not been kept for winter eggs, and will lay superior eggs for hatching. Ask bank for references.

P. HOSTETLER, EAST LYNNE, MO.

a solution of creoline, using this substance at the rate of 2 1-2 ounces per gallon of water. The same author suggests the addition of pyrethrum or sulphur to the dust bath, application of carbolated lime as a wash, fumigation of the hen houses with sulphur, and the direct application of pyrethrum to infested fowls. The Virginia Station recommends spraying the walls, floors, and roosts of badly infested houses with a 2 per cent solution of crude carbolic acid at intervals of two weeks.

Recent experiments at the Iowa and Mississippi Stations in combating the chicken mite have shown that cleanliness is of prime importance, that all filth must be removed, and all cracks exposed if any treatment is to be effective. Nests and roosts should be of simple construction so as to furnish no hiding places for the mites. At the Mississippi Station hen houses were kept free from the mites by thorough dusting with lime and sulphur at intervals of two weeks, treating the nests with lime and sulphur at intervals of two weeks, treating the nests with crude petroleum, and placing moth balls in the nests, but not in contact with the eggs. At the Iowa Station Dr. Repp had the best results from the use of kerosene emulsion. All parts of poultry houses must be thoroughly moistened, particular attention being given to cracks, holes, joints and other hiding places. This application should be made three times in rapid succession on the same day. Some of the eggs of the mites escape this treatment, and the application should therefore be repeated at intervals of about three days for a period of two weeks.

With this system of disinfection it is usually unnecessary to treat the hens directly, since the mites leave them during the day and are killed by the application of kerosene emulsion. The extermination of the mites may be hastened, however, by dusting the hens with pyrethrum powder after they have gone to roost on the evening before the insecticide treatment is applied. A good spray pump should be used in applying the kerosene emulsion, so that the material may be thrown into all cracks and corners. The treatment is inexpensive, the material for spraying ordinary farm hen houses costing about 45 cents.

Among the Chicks.

I have learned a few things about poultry, in many years' experience, which may be of interest to amateur chicken raisers.

First. Do not try to raise too many in proportion to your coops, shelters and feed.

Second. Keep clean quarters and as dry as possible.

Third. Healthy motherly hens, who enjoy their part of the business. The hen has much to do with success.

I let the mother hens remain cooped up for three weeks, changing coops to clean ground every few days.

After three weeks let the mother hen out part of the day for three weeks. By this time, if all goes well, the chicks will be pretty safe.

I give very little water to young chicks and none if there is any sign of bowel trouble.

Feed sparingly six times a day at first. Don't give too many chicks to one hen. It is not how many chicks you have hatched that counts, but how many were raised.

Watch for lice; be careful to not use much grease, if you must use any. Better use insect powder. I sometimes use a mixture of lard and coal oil on the mother hens when I see they are very lousy. I put it on the head and back well in to the tail feathers, none under the wing or on the breast. Then turn the hen where she can get a good dusting in ash dust, which both hen and chicks enjoy. This generally finishes the lice for that time. I then put hen in coop and keep her there for three weeks.

Too much fussing with them is an injury to the young chicks, as well as too much neglect.

I think in the long run it pays to give each hen 1 or 15 chicks to raise. Let her have her own and don't reset her, unless in extreme cases.

If a hen is allowed to set too often one year, she is not much account the next, at least, that is my experience. Chickens don't differ much from humans in this, if you work them too hard at one season. Nature will be revenged sooner or later.

Some kind of shelter should be provided for the chicks in time of heavy rains, when it may be their coops have been taken to use for later hatches.

I think the best success is obtained when poultry is shut out of their winter roosting quarters. Thus giving plenty of time for cleaning them up for the next year.

Remember my warning: Don't try to hatch more than you can see plainly you can shelter and care for.

I never use milk for small chicks, and have known disease stopped where checks were rapidly dying by feeding nothing for a day or two and then sparingly dry feed with no milk or water, for two or three weeks. I was a slow convert to this system, but experience teaches a dear school. I used milk until I saw that there was a better way.

A general rule where chicks are dry fed and show no signs of sickness is to give fresh water in shallow vessels two or three times a day, emptying all water out after the chicks have had a drink. Over-feeding and over-watering kills many fine prospects for large profits in the poultry yard.

Loami, Ill. MYRON B.

It takes a good dealer to sell right lamp-chimneys when wrong ones pay so much better.

MACBETH.

The Index tells you, in ten minutes, all you need to know for comfort with lamps and the saving of chimney-money; sent free; do you want it?

MACBETH, Pittsburgh.

St. Joseph Business University

Established in 1874

CATALOGUE FREE

A modern, progressive school, making a specialty of BOOKKEEPING SHORTHAND TYPEWRITING PENMANSHIP, TELEGRAPHY and all English and Commercial branches. Well patronized. Students enroll at any time. School in session throughout the year.

E. E. GARD, Proprietor, St. Joseph, Mo.

NOW DEPOSITED IN THE BANK

$75,000.00

IN CASH GIVEN AWAY.

To arouse interest in, and to advertise the GREAT ST. LOUIS WORLD'S FAIR, this enormous sum will be distributed. Full information will be sent you ABSOLUTELY FREE. Just send your name and address on a postal card and we will send you full particulars.

World's Fair Contest Co., 108 N. 8th Street, St. Louis, Mo.

Ruptured

Send for our DOUBLE RADICAL CURE TRUSS

SINGLE $6.00 $8.00 *On Free Trial*

"THE ONLY PERFECT TRUSS." Totally unlike anything made. You Pay When Satisfied. WE TAKE ALL RISK.

F. BUCHSTEIN CO., 608 R 1st Ave. S., Minneapolis.

RUPTURE CURED IN 10 DAYS

By a Scientific and Never-failing Process. No knife, no pain, absolutely no danger. IN TEN DAYS THE PATIENT IS SOUND AND WELL—cured to stay cured. Write for proofs, booklet, etc., FREE.

DR. O. H. RIGGS. 205 L. Altman Bldg., Kansas City, Mo.

STEEL ROOFING.

100 SQUARE FEET.....$2.00

We Pay Freight East of Colorado.

Strictly new, perfect, semi-hardened steel sheets, 6 and 8 foot long, the best roofing, siding or ceiling you can use. Nails free. Painted two sides. Flat, corrugated or V crimped. Write for free catalog 999 on material from Sheriffs' and Receivers' sales.

CHICAGO HOUSE WRECKING Co. West 35th & Iron Sts., CHICAGO.

MONEY IN EGGS

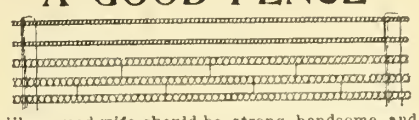
By keeping them until prices are high. Can keep eggs two years if necessary, absolutely the same as a fresh laid one. Send 2 cent stamp for circular telling HOW, also handsome ART FOLDER of the largest FANCY POULTRY FARM in this country. Address Dept. C. J. C. HEATH'S IMPERIAL POULTRY FARM, Valley Junction, Iowa.

IF YOU COULD BUY

a wire fence made of such wire as coil springs are made of, would you do it? All the horizontal wires in all Page Fences are such wires. It is a great deal stronger and tougher and springier.

Page Woven Wire Fence Co., Box 69. Adrian, Michigan

A GOOD FENCE



like a good wife should be strong, handsome and economical. We can supply you with the right kind of fencing. Write for free sample.

The Truss & Cable Fence Co., 618 Cuyahoga Bldg., Cleveland, O.

WIRE Plain, Smooth, Galvanized, 150 ft. long and upwards, 100 lb. coils. No 8 to No. 16 gauge. Brand New. Write for particulars. Send for our 100 page **FREE CATALOG** quoting Factory Prices Best Grade Fence, Roofing, Windmills, Pumps, Pipe, Tanks, Well Supplies, Plumbing Goods, Gasoline Engines, Wagons, Buggies and Farm Implements.

1½c lb

32 W. Carroll Iron Works, Chicago, Ill.

FENCE! *STRONGEST MADE.* Bull Strong, Chicken-Tight. Sold to the Farmer at Wholesale Prices. Fully Warranted. Catalog Free.

COILED SPRING FENCE CO. Box 128 Winchester, Indiana, U. S. A.

YOU CAN MAKE $3 TO $10 A DAY

Fitting glasses for us. Big profits. Our 24-page FREE EYE BOOK tells how. Write for it today.

Jacksonian Opt. College, Dept. 205, Jackson, Mich.

'Tis the "Comfort Line"

Free Reclining Chair Cars

ON THE POPULAR

Henderson Route

BETWEEN

St. Louis, Louisville the East and Southeast

As we are the originators of Free Reclining Chair Car Service Between St. Louis and Louisville, Don't You Think It Would Pay You, in Traveling, to "Get the Henderson Route Habit?"—It Will Us.

ASK ABOUT IT

W. C. LINDSAY, General Agent F. G. CUNNINGHAM, Trav. Pass. Agt. ST. LOUIS, MO.

Missouri Pacific Railway

Best Line Between Missouri River Points and St. Louis

Five Trains

Each Way DAILY.

The Missouri Pacific lines traverse a vast section of rich, undeveloped country, presenting varied conditions of soil and climate adapted to every character of product. Booklet on Missouri, Arkansas, Louisiana, Texas, Indian Territory, Kansas and Nebraska will be furnished free on application.

H. C. TOWNSEND, St. Louis, Mo. Gen'l Pass. and Tkt. Agt.

Grand Island Route

SHORT LINE

Between

ST. JOSEPH and KANSAS CITY

Direct line to Hiawatha, Seneca, Marysville, Kan.; Fairbury, Hastings, and Grand Island, Nebraska.

Quick Time to California and the Pacific Northwest.

C. T. HUMMER, C. P. & T. A.
S. M. ADSIT, Gen'l Pass. Agent.
BOARD OF TRADE, ST. JOSEPH, MO.

Your Buggy Catalogue Is Ready.

The Ohio Carriage Mfg. Co., 14 Sixth Ct., Cincinnati, Ohio, H. C. Phelps, President, desires to announce to our readers that the new and attractive 1904 catalogue of Split Hickory Vehicles and Harness is now ready for free distribution, and will be promptly sent, prepaid, to all who request it.

As is well known to most of our readers, many of them regular customers of this great buggy concern, the Ohio Carriage Mfg. Co. is the sole manufacturer of the Split Hickory line of vehicles, all of which they sell direct to the user at factory price, affording a great saving over other methods.

The catalogue is a work of art and its contents are complete and authoritative. It lays special stress, very properly, upon the 1904 Split Hickory special top buggy, priced at $50, the wonder and pride of the buggy user, the envy of buggy makers universally.

The split Hickory special has one hundred points of merit. These points comprise every late feature known in the manufacture of a strictly high grade buggy.

One of the strong features of all the Split Hickory vehicles is that the running gear is made of hickory that is split and not sawed, giving no cross grain to any part of the running gear of the vehicle, adding 50 per cent to the life and wear of the buggy.

The Ohio Carriage Mfg. Co. is not to be confounded with cheap mail order houses who pick up job lots of vehicles, seconds and defectives, and work them off on distant purchasers without scruple or compunction of conscience. The Ohio people are not to be considered in their class for a minute. They have a reputation for honesty and square dealing acquired by years of successful and upright business methods; are competent manufacturers, guarantee every vehicle for two years, allow the purchaser to use a vehicle thirty days to determine whether to keep it or not, treat their customers on the Golden Rule plan. Hence their success. We ask our readers in sending for this 1904 catalogue to use the following coupon and to fill out the blanks carefully, and mail it direct to The Ohio Carriage Mfg. Co., 1814 Sixth St., Cincinnati, Ohio.

Name .....

Address .....

Vehicles for Fruit-Grower Readers.

Elsewhere in this issue will be found the advertisement of A. J. Child & Son., St. Louis, Mo., which calls attention to the splendid line of vehicles of all kinds which this firm furnishes direct to customers at remarkably low prices. The firm of A. J. Child & Son is one of the largest vehicle firms in the country, with annual sales amounting to over 100,000 vehicles. Its goods are described in a good catalogue which will be sent free to Fruit-Grower readers who ask for same. This catalogue not only describes a great many styles of vehicles and harness, but also explains the liberal offer this company makes, to send vehicles subject to inspection and approval. Besides vehicles and harness, A. J. Child & Son carry a full line of goods of all kinds, as it is the oldest mail-order house in St. Louis. It guaranteees its goods, and as the firm has done business for many years this guarantee means something. Look up the advertisement and then send for catalogue, mentioning the Western Fruit-Grower when you write.

A Good Spray Pump House.

No one these days can afford not to spray. At the same time good spraying aparatus, the thing that is secially adapted to every sprayer's needs, has come to be so reasonable in price, that every one who grows fruit can afford to buy. There is no question but that it is worth while to provide good apparatus to fight against fruit and foliage destroyers. Unfortunately, so may spraying devices are offered that one without experience is not always able to be sure he is getting what will serve his best. In this connection it is proper to direct attention to the spraying apparatus of the Goulds Mfg. Co., of Seneca Falls, New York. There is no danger of going wrong in selecting anything in the sprayer line which this concern manufactures. They make about everything that will be required in the way of hand and power sprayers. They send out a very interesting booklet describing everything they make, entitled "How to Spray, When to Spray and What Pumps to Use." The book includes also numerous approved spraying formulae. It is a good book to have even aside from the illustration and description of their up-to-date spraying machinery. The advertisement appears elsewhere. Look it up and write them if you need anything in the spraying line.

Hickox, Mull & Hill Co., Toledo, Ohio, have placed on the market an implement which has been well received by gardeners everywhere, the Toledo combined garden plow, rake, pulverizer, cultivator, hoe, weeder and hiller. This new improvement in garden tools supplies every needed requirement for cultivating the truck, farm or garden, from plowing to gathering the crop. It is a tool that can be changed from plow to harrow, or weeder to hiller, etc., in a moment's time. It is light, yet durable, and combines more good features than any other tool ever built. The tool holders are a feature of great value. Not only are they quickly and easily adjusted, but are also adjustable up, down, sidewise, or any angle desired, forward or backward. Its equipment consists of two plows, two hoes, six pulverizers, two rakes, spring tooth weeder, two harrows, and wrench. Its cost is very nominal, making it a combination of utility and economy that is hard to beat. Circular giving full description will be sent free on request, by the makers. Address Hickox, Mull & Hill Co., 242 Superior St., Toledo, Ohio.

The Farmer's Friend.

"Thinkful Thoughts for Thoughtful Thinkers" is the title of a neat little booklet that tells all about the Handy Wagon, made by the Farmers Handy Wagon Co., Saginaw, Mich. A low down or Handy wagon is generally recognized as one of the indispensable things on the farm. You can drive over meadow or pasture without cutting in, and carry a good load over plowed or fallow land; and in spring or after rains a wide tired handy wagon can be used when one, would have to loaf or do chores if the only wagon on the farm had narrow tires. It saves half the lift in loading, and the top half, too, and in a hundred ways it helps to make money on the farm.

The Farmers Handy Wagon has wood or metal wheels, but the solid wood wheels are recommended because they do not pick up mud in soft weather like open wheels. They are made of solid white oak, in three thicknesses, making a wheel six inches thick with a heavy, six-inch iron tire, so that the wheels will last a century.

The skeins and boxes, of course, are of metal, as well made as in the finest high wagons. Ask your dealer for a copy of the Farmers' Handy Wagon catalogue containing numerous farm views showing the "Handy" in actual, practical, every day use. It is free, as is also their little booklet, "Thinkful Thoughts for Thoughtful Thinkers." If he cannot supply you, write the Farmers' Handy Wagon Co., Saginaw, Mich., for them.

Drudgery of the Housewife Relieved.

The fact is revealed that the one dreaded period looked forward to by housewives every week is wash day. Women were never intended to wash, but they do, and it's hard work leaning over the tub the greater part of the day, then having to prepare and clear up the super table and go to bed all tired out, with such a backache she cannot sleep. Many of her numerous household duties are neglected, because she cannot find time in which to keep up her work.

The Rotary Washing Machine, such as advertised in our columns, makes house work a pleasure instead of drudgery. The O. K. Rotary Washing machine runs so noiselessly and easily an eight year old child can do the hardest kind of washing in an hour's time; in fact, can keep one person busy hanging up the clothes. The O. K. Rotary Washing machine will pay for itself in four wash days, in the time it saves and by allowing you to look after the daily household duties, and, at the same time freeing you from that dreaded wash day backache.

Almost any hardware dealer can furnish you with an O. K. Rotary Washer. If he does not handle it write the Brammer Mfg. Co., Davenport, Iowa, and they will supply you. Mention this paper in writing the advertiser to insure prompt attention. On the Rotary Washer, "O. K." means satisfaction. The manufacturers guarantee it and then stand back of their guarantee.

"Paying Spraying."

With this for a name a very attractive booklet is being sent out by our advertiser, Lowell (Mich.) Specialty Co. The cover is a soft gray stock printed in three beautifully harmonizing colors and prepares one for the attractive matter inside. It treats fully of the several patterns of spraying machines made by these people. Of these the Lowell Fountain Sprayer presents many new and unique features. This sprayer works by compressed air and has a variety of attachments for the proper treating of fruit trees as well as small fruit and ground vines like melons, cucumbers, etc. Their glass font sprayer is a most effective device of smaller capacity and lower price. A free copy of "Paying Spraying" will be gladly sent to any reader of this paper who is interested in the growth of perfect fruit and vegetables. Address Lowell Specialty Co., 26 Main St., Lowell, Mich.

Page Woven Wire Fence.

Fruit-Grower readers have doubtless noticed the advertisements of the Page Woven Wire Fence Co., Adrian, Mich. How many of them have ever investigated the merits of this fence.. We know that many of our readers use this fence—among them the editor—and we also know that everyone could profitably use the same. The company will be pleased to furnish printed matter to all our readers who apply for same—and certainly all who contemplate building any kind of fence, from poultry fencing up to the most substantial kind, should send for this literature. The Page fence will stand investigation. Address Page Woven Wire Fence Co., Box 69, Adrian, Mich.

The Geneva (N. Y.) Experiment Station has been experimenting in raising strawberries under cheesecloth shades. The results varied, thin cheesecloth shades increasing yield of some varieties and having no effect on others. Thicker cloth retarded the ripening, while the thin cloth hastened ripening. The effect of the shading on the berry was to increase its weight. The shading is not recommended for commercial growers, irrigation accomplishing practically the same results at less expense.

The Southwest Limited

Is the new electric-lighted train, Kansas City to Chicago. Its route is via the new short line of the

Chicago, Milwaukee & St. Paul Ry.

By one Missouri editor it has been called "The Sure 'Nuf Hurry-Up Train between Kansas City and Chicago." It is electric lighted throughout and carries standard sleepers, dining cars, compartment-observation-library cars, chair cars and coaches. Leaves Kansas City (Union Station), 5:55 p. m.; Grand Avenue, 6:07 p. m. Arrives Chicago (Union Station), 8:55 a. m.

G. L. COBB,
Southwestern Passenger Agent,
907 Main St., Kansas City, Mo.

"Follow the Flag"

Wabash TO St. Louis

"World's Fair Route"

ONLY LINE TO WORLD'S FAIR MAIN ENTRANCE

Five Daily Trains From Kansas City.
Shortest Line.
Ask Your Agent for Tickets Over the
WABASH

H. C. SHIELDS, Trav. Pass. Agent.
L. S. McCLELLAN, Western Passenger Agent.
KANSAS CITY, MO.

Fruit-Growers and Truckers

contemplating a change of location or the securing of lands especially adapted to the lines in which they are interested, will be furnishes information by addressing the Land and Industrial Department of the

Southern Railway and Mobile & Ohio Railroad

Good lands at low prices and upon easy terms. First class transportation facilities. Access to the principal markets of the country. Mild climate. Good opportunities and advantages.

M. V. RICHARDS,
Land and Industrial Agent, Washington, D. C.

CHAS. S. CHASE, Agent,
Land and Industrial Dept,
Chemical Bldg., St. Louis, Mo.

T. B. THACKSTON, Trav. Agent,
Land and Industrial Dept.,
225 Dearborn Street, Chicago, Ill.

EPILEPSY

CURED FOR LIFE—Over 5,000 will testify. Names Furnished on application. Absolute guarante in all cases accepted. We also cure Cancer, Rupture, Hydrocele, Varicocele, Piles, Fistula, and kindred diseases with one mild treatment.
GERMAN-AMERICAN DOCTORS, 912 Walnut St., KANSAS CITY, MO

COTTON BELT ROUTE

Find a Cheap Home

In the Southwest. All that's needed is a few hundred dollars with a willingness to work.

Southeast Missouri, Arkansas, Louisiana and Texas are full of opportunities — the climate is mild, the soil is rich, the lands are cheap.

Low rate excursions—about one-half—April 5 and 19, via the Cotton Belt.

Write for descriptive literature, maps and cost of tickets.

E. W. LaBEAUME, G. P. & T. A.,
Cotton Belt ST. LOUIS MO.

Attention Farmers

Why remain in the North and stay indoors six months in the year consuming what you raise during the other six months?

Go South where you can work out doors every month in the year, and where you are producing something the year round. If you are a stock raiser you know your stock are now "eating their heads off" and, besides, have to be protected from the rigors of winter by expensive shelter.

Economical stock feeding requires the combination of botn flesh-forming and fat-forming foods in certain proportions. Alabama and Florida produce in abundance the velvet bean and cassava, the first a flesh producer, and the latter a fat producer, and they are the cheapest and best fattening materials known to the world.

More money can be made and with less labor, in general farming, fruit and berry growing and truck gardening along our road in the South than in any other section of the Union.

If you are interested and desire further information on the subject, address.

G. A. PARK,
Gen'l Immigration and Industrial Agent, Louisville & Nashville R. R. Co., LOUISVILLE, KY.

Homeseekers' Excursions

If you want to visit Oklahoma, New Mexico, Arizona, Texas or any of the other sections of the Southwest in which fruit growing is becoming such an important industry, investigate the low rates made by

The Santa Fe Route

On the First and Third Tuesdays of Each Month.

The Santa Fe reaches every part of the Southwest, and with its frequent and well equipped trains and splendid roadbed, is best prepared to serve the public. For circulars or any desired information. Address

W. J. BLACK, G. P. A.,
Topeka, Kan.
L. O. STILES, C. P. & T. A.,
St. Joseph, Mo.

Four Conditions Make Better Fruit.

There are four fundamental operations upon which all permanent success in most kinds of fruit culture depend —tillage, fertilizing, pruning, spraying.

The three first have been partially understood for ages; but of the last operation—spraying—we have much to learn.

Frosts, insects and fungi are the three principal fruit enemies. The first we cannot control, but the destruction caused by the last two we cannot control, but the destruction caused by the last two we can anticipate and prevent to a considerable degree by spraying.

Such a large measure of success has been the reward of careful, systematic workers at our Agricultural Experiment Stations that every fruit farmer ought to supply himself with all the free, but extremely valuable literature provided by the government. These reports contain formula with directions; when, where and what to spray.

It is only within a few years that the fruit grower could find spray pumps upon which he could depend. They would clog, corrode and fall to pieces in one season. They could be coaxed to throw a stream that would do for wagon washing, but refused to throw a spray fine enough to be effective against insects pests.

The fruitgrowing fraternity is under obligations to a Mr. Hardie, of Hudson, Mich., for his invention of a spray pump that fulfills the peculiar conditions demanded. All parts of this machine liable to corrosion are cast in solid brass. All parts under great strain are made of malleable iron. The use of malleable iron in these parts reduces to a minimum the chances of delay and loss of valuable time from breakage.

The strainer through which all the liquid passes, must be kept clear. To prevent clogging the Hardie spray pump is so arranged that a brass agitator at every stroke of the handle passes directly in front of the inlet of the strainer and makes it impossible for the strainer to become clogged. This is a feature not found in any other sprayer. This pump is easily taken apart with a commonplace monkey wrench. There are no leather or rubber valves or washers.

Through lack of space it is impossible to give any detailed description of the valves, but in the Hardie catalogue these valves are fully explained. They are of the ball type, made of a very hard and superior kind of red brass. They are perfect spheres, will fall into perfect, air tight contact with their seats and will retain pressure in the pump for days at a time. All parts of the Hardie pump are interchangeable.

This pump is admirably designed for spraying fruit trees, vines, vegetables, etc. By changing nozzles it can be used for washing windows, wagons, etc.; for whitewashing, painting, etc.

A fully illustrated catalogue of this pump can be had free by any one writing a letter to the Hook-Hardie Company, Hudson, Mich. The latter half of this catalogue is given up to reports from experiment stations, formula, and directions for spraying. It will pay any fruit-grower to send for one.

No Pits for These Scales.

It is not so many years ago when all scales used for weighing heavy loads had to have a pit dug for them, and in this pit the working parts of the scale were placed. This pit was a source of evpense and trouble. It cost for diggin, it had to be walled with brick or stone, and it was a place where water gathered in summer and ice in winter, much to the detriment of the scale. The invention of the "Pitless Scale" by McDonald Bros., of Pleasant Hill, Mo., has changed all this. This concern saw the expense and annoyance that the old-style scale caused the farmers and others, and perfected a scale which is set right on the surface of the ground. Having the same accuracy and durability that any scale possesses they yet save the purchaser a large expense. The instant favor they met with led to their imitation, and McDonald Bros. now have an important case pending in the courts against makers who have infringed their patents.

Best Bee Paper.

The American Bee Journal, which is now advertised in our columns, is published at 334 Dearborn St., Chicago, Ill., and is in its 44th year. It is not only the oldest publication of its kind in America, but is the only weekly. It is devoted entirely ot bee-keeping. Its contributors are the highest authority on the subject of bees and honey. Many of them make a specialty of the business, and their honey is counted by the ton each year. The American Bee Journal tells how they do it. Practically all who will follow carefully the instructions given can also make a succes of bee-keeping, provided their locality has sufficient natural flowers for the bees to feed upon. There are very few places where bees cannot be made a success. The American Bee Journal costs only $1.00 a year, which is certainly a very low price when one considers the real value of its contents. A sample copy is sent free for the asking. Kindly mention this paper when writing to the publishers.

Disparene Gives Results.

There are probably no more serious pests of the apple crop than the codling moth and canker worm. The first insect by disfiguring or destroying the apple, levies a heavy tax on fruit-growers, while the canker worm by destroying the foliage often spoils the whole apple crop. Out of the numerous spraying preparations devised by Experiment Stations and others for the destruction of these pests, has come one first-class remedy which stands the test of time. The Disparene advertised in another column has now been used for several years by up-to-date fruit-growers with complete success in the case of these two pests as well as proving effective against all other fruit and leaf eating insects. Wm. L. Culver, Grayson, Mo., says: "Disparene killed the canker worms on the trees where it was applied and did not take long to do its work." W. L. Chamberlain one of the editors of the Ohio Farmer is on record as saying: "Previously I have had trouble from other mixtures because they washed off so soon. Disparene sticks on the leaves and fruit and kills the second brood of codling moth worms. Since I have used Disparene I have conquered this late brood as never before. In my 10 acre orchard sprayed with Disparene not 1 per cent of the apples were wormy at packing time. The dealer who handled my fruit wrote me that less than one basket out of 1,700 was rejected for any cause, and that it was the most perfect lot he ever handled."

Since the codling moth and canker worm have proved such serious pests in this section, fruit-growers will do well to send to the Bowker Insecticide Co., Boston, Mass., or to their western representatives, the Missouri Valley Seed Co., St. Joseph, Mo., for the stralght-forward and very well written booklet fully describing Disparene and which is sent free upon request.

Stump Grubbers.

Fruit-growers generally are aware that lands from which timber has been removed are the best for fruits. Consequently a great deal of fruit is planted on locations which have not been thoroughly cleared. Those who are engaged in this work will be interested in the advertisement of the W. Smith Grubber Co., La Crosse, Wis., elsewhere in this issue. This firm makes stump pullers and grubbers, wire rope and all appliances needed in connection with grubbers. We refer our readers to this advertisement, and ask that when they write for catalogue or for any information, they mention the Western Fruit-Grower.

"I cannot run a ranch successfully without the Fruit-Grower, and will try to interest my neighbors."—J. C. Cozzens, Plateau City, Colo.

"The Fruit-Grower is excellent, and growing all the time. I am glad we have such a paper in Missouri. It is pleasant and profitable reading."—Dr. J. P. Greene, president William Jewell College, Liberty, Mo.

Fruit Farms and Fruit Land for Sale

We are the largest dealers in real estate in Grand Valley, the famous peach, apple and pear growing section of Western Colorado. Orchards here 8 years old net the grower from $500 to $700 per acre. The climate is the best in the world and is a specific for lung and throat troubles and asthma. Write us for information. The Home Loan & Investment Co., 357 Main Street, Grand Junction, Colorado.

Fine Fruit and Corn and Cotton land for sale in the Sunny South. From $3.00 to $1,250 per acre. For folders address G. W. Mathis, Fordyce, Ark.

FOR RENT OR SALE—On crop payments, several choice farms. Send for list. John Muihall, Sioux City, Iowa.

LAND BEST in the WEST

Ten years time, one-tenth cash. Rich farm land in Kansas, $5.00 to $10.00 per acre.

Ranch land in Colorado, $1.50 per acre; 1,064,600 acres sold in 1903 to Farmers and Stock Growers from the East and North. Exeursiona 1st and 3d Tuesday every month.

UNION PACIFIC LAND AGENCY

225 Sheldley Bldg and Room 8 Union Depot, KANSAS CITY, MO.

Fruit Lands for Sale

Many choice fruit farms and tracts of fruit land in Doniphan County, Kan., near St. Joseph. Address, POOL GRINSTEAD, Wathena, Kan.

COW PEAS, CRIMSON CLOVER SEED—A pamphlet all about the culture. First-class seed cheap. Box 64, Milford Nurseries, Milford, Del.

Fruit and Alfalfa lands in the best fruit country in the United States. NINETEEN SUCCESSIVE CROPS, including PEACHES; free timber and building stone. Coal, $1.25 per ton. Delightful climate, no wind storms. $200 to $600 made on one acre of Fruit. Correspondence solicited. C. C. Hawkins, Paonia, Colorado.

2720 Acres S.W. Kansas

All feneed, five-room house, barn, windmill, tanks, 135 high grade cattle, 15 good saddle and work horses, harness, complete set farming tools, $15,000.

480 acres Sheridan County, Kan., house, barn, granary, 100 acres in wheat, ¾ of crop goes with farm, $5,000, part cash.

320 acres, Thomas County, Kansas, all nice, smooth wheat at $4.75 per acre.

160 acres improved S. E. part Osage County, Kansas, $20 per acre.

PEARSON COMPANY
304 Kemper Bldg. Kansas City, Mo.

10000 ACRES

Fruit Land—Benton and Crawford Cos., Arkansas; McDonald, Webster, Howell, Texas Cos., Missouri. The Big Red Apple district; $5 to $8 per acre. Selected orchards from 20 to 1,000 acres bearing. This country my specialty. Write me what you want; no deal too large or too small. All descriptions guaranteed as represented. Cheap R. R. fare, first and third Tuesdays each month. Big list of farms, Missouri, Kansas, Arkansas, Oklahoma and Texas, free for asking. Maps, either state, 10c postage or silver. Now is the time to buy.

LOTT, "The Fruit Land Man"
127 W. 8th St., Kansas City, Mo.

UNEXCELLED SERVICE
VIA
FRISCO SYSTEM
TO POINTS IN
Missouri, Arkansas, Tennessee, Alabama, Mississippi, Georgia, Florida
AND THE SOUTHEAST, AND TO
Kansas, Oklahoma, Indian Territory, Texas
AND THE SOUTHWEST.
The Famous Health and Pleasure Resorts,
EUREKA SPRINGS AND HOT SPRINGS,
ARKANSAS,
Reached most conveniently by this Route.
Round Trip Homeseekers' Tickets at rate of ONE FARE plus $2, on sale first and third Tuesday of each month.
For descriptive literature and detailed information as to rates, train service, etc., address
J. C. LOVRIEN,
ASSISTANT GENERAL PASSENGER AGENT,
KANSAS CITY, MO.

"I cannot do without the Fruit-Grower. If I live a few more years and follow the advice I get from the paper, I will make my orchard buy out some fellows who do not read the paper."—J. J. Huff, Bent Mountain, Virginia.

Family Strawberry Bed.

I set out a small strawberry bed in 1898, which has continually improved, both in fruit and plants each succeeding year under my system of cultivation. I keep the soil well enriched and free from weeds. As soon as I finish picking the fruit I immediately mow the vines closely and rake them off. I than rake the bed thoroughly with an iron tooth rake, making the whole surface of bed fine and clean. I then mark the bed crosswise of last year's rows, leaving the row strips about eight inches wide. I then thoroughly but carefully hand cultivate between these row strips, so as not to injure the roots of the plants in these strips. In a few days the strongest and best plants will be up and running. I leave enough of the strongest plants to run and cover about one-half to two-thirds of the bed. I then carefully hoe out the plants not needed and keep the soil clean and fine about these running plants. When the runners have covered the amount of space wanted, I then cut off all runners as they appear, keeping the open spaces well hoed. If needed I apply a dressing of good, fine manure before mulching bed for winter. I set all perfect flowering kinds. I have had good success with Corsican, Mead, Jessie, Brandywine, Clyde, Gandy and Parker Earle. RODNEY SEAVER.

Darlen, Wis.

Cultivating Nursery Stock.

The cultivation of nursery stock is a most important matter. The soil must be stirred thoroughly and often, to produce best results. Appreciating the need of the best implements for this work, the Keystone Farm Machine Co., Box 1562, York, Pa., has perfected a cultivator, which leaves nothing to be desired. It is advertised elsewhere in this issue, and an illustration shows the cultivator at work. The attention of all nurserymen is directed to this advertisement, and not only nurserymen, but strawberry growers, gardeners—in fact, everyone who wants to maintain a perfect dust mulch, and at the same time not disturb the roots of the growing plants. The Keystone Farm Machine Co. will be pleased to send booklet describing this cultivator to all who will address them as given above. The implement certainly deserves the consideration of every reader of the Fruit-Grower.

Spraying Strawberries and Other Crops.

In this issue the H. L. Hurst Mfg. Co., Canton, Ohio, advertise a sprayer which will interest every strawberry grower who appreciates the importance of keeping his plants healthy and free from insects. This is a sprayer which is pushed along like a wheelbarrow, and which will spray four rows at a time. The nozzles are adjustable at any angle and for any width row; the contents of the sprayer are kept thoroughly agitated, and altogether the machine is one which will commend itself to those who wish to spray strawberries, vegetables, potatoes, or any of the low-growing crops. Look up the advertisement, and when you write, mention the Western Fruit-Grower.

Nurserymen Should be Sure.

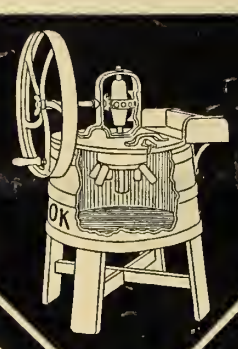
Any system that reduces chances of error in labeling nursery stock is worth earnest consideration. When a man pays for fruit trees of a certain variety, it is good policy for the nurseryman to make sure his customer gets them.

The success of Carl Sonderegger, proprietor of the German Nurseries at Beatrice, Nebraska, has grown out of his extreme care in delivering just what is paid for. This policy has developed a long list of confiding customers for nursery stock, who are certain that when it buds, leaves and bears it will be the exact variety they wanted.

Another valuable feature is that Mr. Sonderegger is a careful shipper and his trees and plant all arrive in a sound, healthy, growable condition; in fact, he guarantees their safe arrival at any railroad station in the United States to which shipments are made. Damp moss and expert packing are the reasons why he can send nursery stock to any address. His catalog is a good one to have at one's elbow. He sends it free to those who ask for it, mentioning the Western Fruit-Grower.

OK
WASHING MACHINE

Sales have increased in **six years** from 25 a week to **350 a day.** Conclusive evidence of the satisfaction they are giving. For personal profit some dealers try to sell an inferior machine, for which they are exclusive agents, at a greater cost. Don't purchase a machine until you have fully investigated the "O. K." If your dealer does not handle the "O. K.," send us his name and ask for our booklet. We mail it free. It will save you money and get you a better machine.



In One Hour

with an "O. K." you can do your washing easier, better and with less wear on the clothes. Makes Monday the easiest day of the week. Our facilities enable us to offer you a better machine for less money than any other maker.

H. F. Brammer Mfg. Co., 1445

Rough Red Hands

torn clothes and a worn out feeling are about all you have to show for a hard day's work with a wash-board and tub. It don't pay physically or financially. Write to us and let us show you a better way. Make us prove all this.

Rockingham Road, Davenport, Ia.

The World's Greatest Fair.

Mr. J. M. Studebaker of South Bend, Ind., president of the Studebaker Bros. Manufacturing Co., says in a letter addressed to Chief Willard A. Smith and Commander A. C. Baker of the Department of Transportation Exhibits: "My son and I desire to convey to you our sincere thanks for the courtesy shown us during our recent brief visit to St. Louis. We are interested beyond all manner of expectation. St. Louis is plainly to have a World's Fair far surpassing anything the world has yet seen. Its present promise challenges the wildest flights of the imagination. No one can conceive of what has been accomplished without seeing it. The scope of the enterprise is gigantic, its detail is bewildering, and the beauty and artistic combination of buildings, grounds and water make of the place a region of enchantment. The visitor to the World's Fair at St. Louis will find himself in fairyland, in wonderland, and this without reference to what his experience in sight-seeing have heretofore been. My fear is that this impressive fact is not going to be sufficiently well known either at home or abroad. The press should blaze with the subject from this time forward."

Handsome Horse Picture Free.

In order to ascertain how many persons read the advertisements of the Studebaker Wagons, Carriages and Harness, if you will write us a letter of not more than 1200 words, telling us how many of our advertisements you have read, where you saw them and what you think of them, we will send you absolutely free, our beautiful water color lithograph, "Typical American Show Horses," 12x27 inches, printed in seven colors.

To the six persons sending the best letters, we will send this picture handsomely framed. All others will receive the picture ready for framing. Contest closes June 1st, when pictures will be awarded. We know you will be glad to have it. Send today while you think of it. Address **Studebaker Bros. Mfg. Co., South Bend, Ind.**

A Great Nursery's Rise.

One of the leading nurseries of the country is that of J. G. Harrison & Sons of Berlin, Md. There is no better illustration of a small beginning making a great ending than in their case. They made a humble start in 1887 with a quarter acre of peach trees, some two thousand all told. They were budded by an experienced budder from bearing trees, assisted by the father and two sons who still compose the firm. They today are still giving the same close attention to budding, cultivating, pruning, digging and packing that they gave in the beginning and the business has grown until now they have budded as many as three and a half million peach trees in a single year. The wonder is how they find a market for so immense a product, but the Berlin climate and soil, with the Harrison propagating produce trees that are everywhere in demand. Apples are an equally great success with them. They now have over 1,000 acres of growing trees, and are prepared to ship the choicest in apples and peaches of all varieties. They are also prepared to ship pear trees, asparagus rotts and straw-berries. They sell, not through agents, but direct to the planter, guaranteeing arrival in good condition anywhere in the United States. Their general catalogue is always free. Consult their ad in these columns and write for it.

How's Your Subscription?

Look at the date on the wrapper in which this issue of the Fruit-Grower was received, and it will indicate when your subscription has expired. If the date shows your subscription to have expired, will you not renew at once, while the matter is fresh in your mind? Don't put it off until later, for spring work will interfere, and you may forget it. The sum is small, but the aggregate amount is large, from the standpoint of the Fruit-Grower. Are we asking too much? Is the paper not entitled to your support? Remember that while our subscription rate is 50 cents a year, we still have a clubbing offer to accept four new subscriptions and one renewal, all for $1. Get four neighbors to join you when you send your subscription, and do it now.

If this paper reaches anyone who is not a subscriber, he is urged to subscribe. No one who grows fruit can afford to be without the Fruit-Grower. The outlook is for a good fruit crop, and everyone will be interested in knowing what the prospects are elsewhere, what prices are being paid, etc. All these points, in addition to the most approved methods of growing and packing fruit, will be discussed during the summer months. Send your subscription today, and thus make sure of receiving the May number, which will be another good one.

THE FRUIT-GROWER CO., ST. JOSEPH, MISSOURI.

A Useful Instrument for Farmers.

Modern methods on the old farm are bringing dollars to the owner, where a few years ago cents were received. This is not caused through accident. A first-class farm and truck garden is now run like a factory. The leakages are being stopped. Machinery, with its strong arm, is helping the poor, tired muscles of the farmers. By guarding the result of the farmers' labor, it prevents the great loss which they have hitherto sustained through lack of proper facilities.

If you will write the Dayton Supply Company, they will send you a little book which gives you full information regarding their spraying apparatus for destroying insects and fungi growth on your fruit trees, and how it may also be used for whitewashing fences, tree trunks, etc., and washing wagons and windows, and for a great number of other useful purposes.

The Climax Pump throws a stream fifty feet and, the statement of a secretary of one of Ohio's horticultural societies, that he was still using one of these pumps, which he bought in 1886, is a strong guarantee as to its durability. The booklet will be mailed free on application.

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Volume Fifteen *May 1904* *Number Five*

THE WESTERN FRUIT-GROWER

ST. JOSEPH MISSOURI

AN ILLUSTRATED MONTHLY MAGAZINE FOR PROGRESSIVE AMERICAN FARMERS

PUBLISHED MONTHLY
FIFTY CENTS A YEAR

ADVERTISING RATE:
$2.10 PER INCH EACH INSERTION

Nursery Cultivation

does not differ from that of any other drilled or billed crop. The secret is in killing all the weeds, keeping a finely pulverized top soil, admitting the light, air and warmth to the roots, and preserving all the under moisture. To do these things, there is no other implement so perfectly adapted to nurserymen's needs as the

Keystone Adjustable Shallow Cultivator

It cultivates all the ground and covers the surface with a fine dust mulch. Weed seeds are not brought to the surface to start and the moist under soil is not brought up to dry in the sun. Weeds are killed at starting, plant rootlets are not injured. It has wide adjustment, narrowing down to 30 inches for work between the rows and widening to 7½ feet for cultivating astride several rows. Nurserymen find it saves time, avoids injury to roots, and maintains top soil conditions, which results in strongest possible rooting and most vigorous growth. Supplied either with round teeth or the famous Hallock flat tooth (under special license).

Write for Book of Field Scenes

showing adaptability to nursery cultivation. 40 pages filled with large illustrations from photographs of Cultivator at work in nurseries and various crops. Book mailed free. Send for it today.

Keystone Farm Machine Company

1562 N. Beaver Street, York, Pa.

There are a Good Many "Dust-(at)-ers," but There Is But One

Jumbo Duster

Absolutely the best machine for applying insecticides and fungicides in powder form using lime dust as a conveyor.

Powerful & Convenient

May be mounted on sled or used in wagon bed. We also have many smaller styles for lighter work. Also a full line of dry powders.

Used & Endorsed by all Largest Dust Sprayers

Write nearest house today for a catalogue telling all about them.

LEGGETT & BROTHER

Patentees and Manufacturers, 301 Pearl St., New York.

Missouri Valley Seed Co.

St. Joseph, Mo., General Western Distributors, and

F. W. Hitchings, Corralitos, Calf., Agt.

Good Horticultural Books

For Cash or as Premiums for Fruit-Grower Subscribers

The Fruit-Grower is prepared to furnish any horticultural book published to its readers, either for cash or as premiums for new subscribers. The list published herewith comprises the best agricultural books which have been issued, and a good farm library be built up at slight expense.

The books will be sent postpaid for the prices named, or they will be sent absolutely free as premiums for new subscribers on the following basis:

Books to the value of $4.00 will be sent absolutely free for 10 new subscribers at 50 cents each.

Books to the value of $3.50 will be sent free for nine new subscribers at 50 cents each.

Books to the value of $3.00 will be sent free for eight new subscribers at 50 cents each.

Books to the value of $2.50 will be sent free for seven new subscribers at 50 cents each.

Books to the value of $2.00 will be sent free for six new subscribers at 50 cents each.

Books to the value of $1.50 will be sent free for five new subscribers at 50 cents each.

Books to the value of $1.25 will be sent free for four new subscribers at 50 cents each.

Books to the value of $1.00 will be sent free for three new subscribers at 50 cents each.

By getting a few new subscribers to the Western Fruit-Grower one can secure the best horticultural literature published, absolutely without charge. By simply showing a copy of the Fruit-Grower to the neighbors, one can earn a number of these books as premiums in a few hours. It will be noted that the new subscriptions must be at the regular rate of 50 cents each, in every case

Farm and Garden.

The New Rhubarb Culture—By J. E. Morse and G. B. Fiske, 50 cents.

Irrigation Farming—By Lute Wilcox, $1.50.

Mushrooms; How to Grow Them—By Wm. Falconer, $1.00.

How Crops Feed—By Prof. Samuel W. Johnson, $1.50.

Insects and Insecticides—By Prof. C. M. Weed, $1.50.

American Farm Book—By Richard L. Allen. $2.00.

Chemistry of the Farm—By Prof. R. Warrington, $1.00.

Farm Drainage—By Judge French of New Hampshire, $1.00.

Onions: How to Raise Them Profitably—By seventeen practical growers, 20 cents.

Farm Poultry—By Geo. C. Watson, $1.25.

Farm Gardening and Seed Growing—By Francis Brill, $1.00.

Success in Market Gardening—By W. W. Ransom, $1.00.

Bommer's Method of Making Manures—By Geo. Bommer, 25 cts.

Cabbage, Cauliflower and Allied Vegetables—By C. L. Allen, 50 cents.

Gardening for Old and Young—By Joseph Harris, $1.00.

How the Farm Pays—By Wm. Crozier and Peter Henderson, $2.00.

Money in the Garden—By P. T. Quinn. $1.00.

Market Gardening and Farm Notes—By Burnett Landreth, $1.00

Forest Planting—By H. Nicholas Jarchow, $1.50.

Soils and Crops of the Farm—By Geo. E. Morrow and Thomas E. Hunt, $1.00.

How to Make the Garden Pay—By T. Greiner, $2.00.

Flowers.

Greenhouse Construction—By Prof. L. R. Taft, $1.50.

Greenhouse Management—By Prof. L. R. Taft, $1.50.

Bulbs and Tuberous Rooted Plants—By C. L. Allen, $1.50.

Parsons on the Rose—By Samuel B. Parsons, $1.00.

Landscape Gardening—F. A. Waugh, 50 cents.

The Rose: Its Cultivation, Varieties, Etc.—By H. P. Ellwanger, $1.25.

The Window Flower Garden—By J. J. Heinrich, 50 cents.

Hedges, Windbreaks, Shelters and Live Fences—By E. P. Powell, 50 cts.

Practical Floriculture—By Peter Henderson, $1.50.

Ornamental Plants and How to Succeed With Them—By Lizzie F. Hillhouse, $1.00.

Horticulture.

Plums and Plum Culture—By F. A. Waugh, $1.50.

Fruit Harvesting, Storing, Marketing—By F. A. Waugh, 250 pages, $1.00.

Pear Culture for Profit—By P. T. Quinn. Illustrated. Cloth, 12mo. Price $1.00.

The Nut Culturist—By Andrew S. Fuller. A treatise on the propagation, planting and cultivation of nut-bearing trees and shrubs adapted to the climate of the United States. 12mo., cloth, $1.50.

Peach Culture—By Hon. J. Alexander Fulton. The best work on peach growing. It has been thoroughly revised and a large portion of it rewritten, bringing it down to date. Cloth, 12mo., $1.00.

Small Fruit Culturist—By Andrew S. Fuller. The book covers the whole ground of propagating small fruits, their culture, varieties, packing for market, etc. Cloth, 12mo., $1.00.

Grape Culturist—By A. S. Fuller. This is one of the very best works on the culture of the hardy grapes. Cloth, 12mo., $1.50.

Strawberry Culturist—By Andrew S. Fuller. Containing all information necessary to enable everybody to raise their own strawberries. Fully illustrated. Flexible cloth, 12mo., 25 cents.

American Fruit Culturist—By John J. Thomas. Containing practical directions for the propagation and culture of all the fruits adapted to the United States. $2.80.

Quince Culture—By W. W. Meech. An illustrated handbook for the propagation and cultivation of the quince, with descriptions of varieties, insect enemies, diseases and their remedies. New and enlarged edition. Cloth, 12mo., $1.00.

The Cider Makers' Handbook—By J. M. Trowbridge. A complete guide for the making and keeping of pure cider. Fully illustrated. Cloth, 12mo., $1.00.

The Practical Fruit Grower—By S. T. Maynard. Just what the beginner needs and the successful fruit man practices. Illustrated, cloth, 50 cents.

The Fruit Garden—By P. Barry. A standard work on fruit and fruit trees. Cloth, 12mo., $1.00.

Rural Science Series.

The Principles of Agriculture—A text-book for schools and rural societies. Edited by L. H. Bailey, with contributions from his colleagues in the Cornell University. Third edition, 300 pages, 92 illustrations, $1.25.

The Spraying of Plants—By E. G. Lodeman, late instructor in horticulture in the Cornell University. 399 pages, 92 illustrations. $1.00.

The Principles of Fruit Growing—By L. H. Bailey, professor of horticulture in the Cornell University. Third edition; 516 pages; 120 illustrations, $1.25.

Bush Fruits—A horticultural monograph of Raspberries, Blackberries, Dewberries, Currants, Gooseberries and other shrub-like fruits. By Fred W. Card, professor of horticulture in Rhode Island Agricultural College. Second edition; 537 pages; 113 illustrations. $1.50.

The Principles of Vegetable Gardening—By L. H. Bailey, Cornell University. Pages, 456; illustrations, 144. $1.25.

Garden Craft Series

The Horticulturists' Rule Book—A Compendium of Useful Information for Fruit-Growers, Truck Gardeners, Florists and Others. By L. H. Bailey, professor of Horticulture in Cornell University. Fourth edition, 312 pages; 75 cents.

The Nursery Book—A Complete Guide to the Multiplication of Plants. By L. H. Bailey, professor of Horticulture in the Cornell University. Third edition; 565 pages; 152 illustrations. $1.00.

Plant Breeding—Being five lectures upon the Amelioration of Domestic Plants. By L. H. Bailey, professor of horticulture in the Cornell University. 293 pages; 20 illustrations. $1.00.

The Forcing Book—A Manual of the Cultivation of Vegetables in Glass Houses. By L. H. Bailey, professor of horticulture in the Cornell University. 266 pages; 88 illustrations. $1.00.

The Pruning Book—A Monograph of the Pruning and Training of Plants as Applied to American Conditions. By L. H. Bailey, professor of horticulture in Cornell University. Third edition; 545 pages; 331 illustrations. $1.50.

Garden Making—Suggestions for the Utilizing of Home Grounds. By L. H. Bailey, aided by L. R. Taft, F. A. Waugh and Ernest Walker. Fourth edition; 417 pages, 256 illustrations. $1.

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The FRUIT-GROWER CO., ST. JOSEPH, MISSOURI

The Western Fruit-Grower

An Illustrated Monthly Magazine for Progressive American Farmers

Volume Fifteen ST. JOSEPH, MISSOURI, MAY, 1904. Number Five

Result of Girdling Peach Trees

Last year mention was made in The Fruit-Grower of the theory held by some persons that the girdling of peach twigs in summer would render the buds less liable to injury by the following winter. Last December, at the meeting of the Missouri State Horticultural Society, a paper on this subject was to have been read by Mr. Chandler, one of the students in the Agricultural College, but it was crowded out, owing to the length of the program. Mr. Chandler kindly furnished The Fruit-Grower with a copy of his paper, which is produced herewith, which tells of some experiments he conducted last season. It should be remembered that this paper was prepared last December, before there had been opportunity to observe the winter injury. Mr. Chandler's paper follows:

About July 20th a number of branches were girdled in the station peach orchard. One of the results of this is that, since only a few of the girdles have healed over, many of the branches will probably die next summer. This is because the girdling was done too late. If it had been done in June, when the combium is thicker so more of it would have been left on the wound, and the rapid flow of sap would have kept them from being dried out, most of them would have healed.

I shall give some of the effects of this girdling upon the wood growth and the fruit buds. Concerning the wood growth, the most noticeable effect was the time at which they became dormant in the fall. When our horticultural class began its observation, September 20th, twigs could be found on which the terminal buds had not yet formed, and the leaves were still green and active on the ungirdled branches, while on the girdled branches the terminal buds had all long been formed, and the leaves were yellow and beginning to fall. The main leaf fall had occurred on these branches before October 15, while on the ungirdled branches the main leaf fall was not until Nov. 15, and then after heavy frost. As would be expected, the wood growth is shorter, but on the other hand it is thicker and stiffer, showing that it is better stored with plant food.

The most evident effect on the fruit buds was, probably the number of buds. I counted the fruit buds on a number of branches, for every girdled branch counting on the same tree also those on an ungirdled branch of about the same length, and with the same number of side branches. The results are as follows:

Variety	Buds per 100 Feet of Wood Ungirdled	Girdled	Per Ct. of gain due to Girdling
Hills Chili	921	1081	17.3
Briggs Red	600	974	62.3
Garry Holden..	286	430	49.8
Elberta	653	912	39.6
Yellow St. John.	430	970	125.5
Salway	900	1105	22.7
Shipley Red ...	656	723	23.9
Average	635	899	41.5

Thus the number of fruit buds is considerably increased by girdling, and as would be expected, the increase due to girdling is much greater on the trees that have set the smaller number of fruit buds. Such varieties as Hills Chili and Salway have set anyway as many fruit buds as they have room for.

Not only are there more fruit buds on the girdled branches, but those that are there are in better condition to stand the winter. We have said before that the vegetative activity of the branch is diminished. The sap pressure will probably be a good deal less, so the buds are less likely to begin to grow on a warm period in winter and will start later in spring, and for this reason would not be so likely to be killed by freezing in winter or by spring frosts. Besides this, the protection which the buds themselves have from winter is better on the girdled branches. The buds are much larger, having better development of bud scales, and the downy covering of the buds is very much better developed. In many trees you can find the girdled branches by the whitish appearance that the buds have due to this covering. Many of the buds on the ungirdled branches being smaller and poorly protected, would be killed in an ordinary winter. Then as a result of girdling we would expect a much larger number of buds, in fact too many; to go through an ordinary winter, and that buds would be more likely to live through a severe winter.

Another worthy of notice affects both wood growth and fruit buds. Little or none of the plant food in the branch can get back of the girdle. As a result of this the part of the branch back of the girdle makes little or no growth, and is in a poorly nourished condition. This will weaken the whole branch, so, while there is a large number of fruit buds set the year of the girdling, we would expect a small number the next year.

In conclusion, then the results of girdling are, a longer dormant period, diminished wood growth, better ripened wood, a larger number of fruit buds, fruit buds better able to stand the winter, and a weakened condition of the branches for the next year.

Old vs. New Varieties.

Why are our fruit-growers so ready to discard old and tried varieties for the new and unknown, or at least uncertain ones?

Here there has just been made a delivery of several thousand apple, peach, pear and other orchard trees, accompanied by the usual proportion of small fruits, largely new and untried sorts, which leads to the question above.

Among apples the Baldwin is discarded because "it is not a keeper." But, it is large, fine form, good color and bearer, superior quality and keeps as long as Jonathan, even much later. I have kept them barreled in an ordinary cellar to the 12th of June.

Hubbardston. Who ever sees one now? Having all the desirable qualities of a money maker, large size, fine flavor, good color, yields well and is equal in every respect to Huntsman and more productive.

Golden Pippin; vanished, unknown in our markets. A splendid bearer, excellent quality; fine early winter variety, not excelled by Grimes Golden in any point.

Rawles Janet. One of the most prolific bearers and longest keepers, fine flavor, cooks well, but does not pulp by it. For cider cannot be beat and from March none better to chew by the fireside.

Rambo. The best of all October apples, good color, superior flavor, all right in the kitchen and delightful in the parlor; bears abundantly.

And old Ben Davis; yes, Ben, you have many kickers, but just hold your grip until we chew one or two; you're not as richly endowed with flavor as some, but you don't cloy the taste as you do, or when on the table for months, or in cobblers and dumplings.

Milam. Poor little fellow; pity you are so small, but what you lack in size is made up in quantity, quality and keeping.

I'm not saying a word against the newer varieties, but why discard the old unless we get better varieties?

Can we say we have them?

For all purposes, yield, quality, cooking, eating, selling and dollars per acre do the late introductions excel these older ones?

Peaches. New ones by the—I don't know how many. But are these lately sprung sorts any better, are they as good as many of the old ones that have been turned out, like a faithful old horse, to die? It is true some are a little earlier and some a little later, but are any better money or cobbler makers than Stump, Smock, Heath, Susquehanna, and a host of old fellows?

Each kind of fruit has its season to meet the demands of human appetite and relish. How we enjoy strawberries, raspberries, blackberries, cherries, grapes in their season, usually for a few weeks each and then desire a change. Melons are luscious in their season, but how do they fit our taste in cold weather?

But apples fit us in every way the whole year round, from the "June" until the "June" comes again and old Ben stays with us as long as the longest.

Pears come along with the rest. Dollars only seem to be the wish of propagators. Quality is totally overlooked, and "blight proof" is the unattainable desire, without reference to richness or quality.

DAN CARPENTER.

Gashland, Mo.

Top-Working Trees.

Mention has been made in the columns of the Fruit-Grower a number of time of the work which Theodore Williams of Benson, Neb., is doing in the way of crossing varieties of fruits. There is no question that Mr. Williams is doing a great work, and the only reason we do not hear more from him is because of his extreme modesty. He does not like to talk about his work. Mr. Williams has, however, told how he top-works his trees. He does a great deal of this work, in order to bring scions into bearing earlier, and also to secure several varieties of fruit in one tree, so that there will be a mixing of pollen, thus securing the crosses he desires. Mr. Williams says:

Our method of top working large trees is by summer bud-grafting between June and October or as soon as we can find well-ripened terminal buds. For most work we prefer a plump shoot about three inches long, but we use scions from one inch to six inches long. We make a long, sloping cut according to the size of the scion and push it under the bark of the stock. We use little scions at the top end of the limb where the bark is thin, using longer and thicker shoots as we work downward into thicker bark, until at the ground, if we wish to replace a tender or injured tree with one on hardy roots, we use a growth from three to six feet and push the scion into the bark several inches below ground where it takes root. Some of these shoots are three-fourths of an inch thick at the base, have side branches and wood two or three years old. The large scions are not so apt to be bitten off by rabbits or smothered by weeds and we gain a year or so by their use.

If we are top-working in sorts slow in coming into bearing or naturally unproductive, we invert the scions upside down, pushing it upward under the bark with the terminal bud hanging downward. In exceedingly wet weather it is best to set all the scions reversed, as too much water in the cut will rot the scions. July and August if not too hot and dry is the most favorable time when the trees are making rapid growth and the descending sap is full of food. This manner of bud-grafting without string or wax proves a success upon everything I have tried. Apples, pears, peaches, nut and forest-trees, apricots, cherries and plums must be worked earlier in the season. The most profitable cherry orchard I have is all worked on plums. Our children have begun grafting as soon as allowed to carry a knife, and now at the ages of 7, 8, 11, and 12, have a good idea of natural affinities in grafting and are capable of directing unskilled labor.

In our orchard there are now living probably more than 6,000 grafts set by them last summer. In their regular work if they are asked to put Jonathan on crab, they go to the most profitable Jonathan tree for scions. One of them cuts the ripest twigs, allowing them to drop to the ground; another one picks them up and takes them to the others, who sit in the shade and strip off the leaves by taking the shoot by the terminal bud between the thumb and finger of one hand and drawing it between the thumb and finger of the other hand. Enough are taken for a few hours' work, laid in a basket and covered with a damp cloth. The smaller child carries the basket and whetstone and hands the scions to the others, who, each with a tree to himself, takes a keen cutting knife and a handful of scions and begins work at the top of the tree.

One long, sloping cut is made on the scion and two cuts on the bark of the stock, the last one raising the bark enough to admit the scion, which is pushed in with one hand, while the thumb of the other rests on the bark to steady the progress of the scion downward, until all the cut surface of the scion is below the bark and resting on the sap wood. Without wax or tying a boy can set two scions a minute and have 95 per cent live. Setting 500 scions is a good day's work for a boy. After the scions are growing the trees are pruned enough to allow the grafts light and air. No severe pruning is done until the grafts have grown enough to absorb the sap and prevent light and air. No severe pruning is done until the grafts have grown enough to absorb the sap and prevent light. Where there are two sorts of apples grown on one tree, they cross pollinate, bear and hold fruit better, but to avoid mixture in picking they should be very distinct sorts, as Northwestern Greening and Winesap, Ben Davis and Patten, Missouri Pippin and Jeffries.

F. H. Faatz, Maramec, Okla., writes: "I send herewith club of five subscribers. Every farmer and fruit grower ought to read the Western Fruit-Grower, but it is hard to make some of them believe it. Peaches were nearly all killed here by the hard freeze on the night of March 26; also apricots, pears, quinces, crab apples, all early blooming plums and the geater part of the cherry crop."

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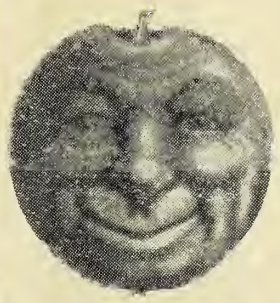

Fruit-Grower readers will have money coming in now, with the marketing of the fruit crops. When you receive any returns from fruit shipments or from direct sales, use part of the money to renew your subscription, if the date on your paper shows your subscription to have expired. Will you not do this? Let The Fruit-Grower participate in your harvest. Brother Jonathan will smile even more than he does now if you will but do this.

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The Fruit-Grower Co., St. Joseph, Mo.

Packages for Apples.

With a heavy crop of apples this season, the question of packages is going to be an important one, and the growers will have to decide early what packages will be used. In New York and other sections where the crop was heavy last season, the matter of securing barrels was very troublesome, and even when barrels could be secured prices were exorbitant. There is an increasing interest in the use of the bushel box as an apple package, and before the late meeting of the Western Horticultural Society this matter was discussed at some length. The following extract from the discussion is from the Country Gentleman, and shows the interest which is being taken in the use of the box, and the arguments for and against it:

"Mr. Hammond told how he handled, stored and sold apples in 40-lb. boxes. These boxes were taken to the storehouse before night, and when sold, sorted and packed in the same boxes. The boxes were not exposed to the weather more than a few hours, and left the storage house bright and in good shape.

"Mr. Powell had at the present time 1,000 boxes of apples, Jonathans and Greenings, in storage, part being in bushel packages and some of 40 lb. He was hunting a market for them, but had no doubt of finding a profitable one. New York commission men were opposed to bushel packages or anything smaller than a barrel. Retail grocers sold almost entirely by the quart in two or four-quart packages, the contracted quarters of people in the city compelling them to buy in small quantities. Probably less than three per cent. of the consumers would at present buy as much as 40 lb. at once. For this reason the retailers prefer to buy by the barrel; they do not have so many packages standing around, and they measure out better, especially if the bushel is scant. The empty barrel also has some commercial value, and the box has not. The price of apples in boxes varied with the quality and care in sorting and packing. He knew of two carloads of bushels selling at 70 cents per box. These were sold on commission. He has sold fancy apples at private sale (bushel packages) at the rate of $7.00 per barrel, and the customers wanted more.

"Mr. Van Deman said all Pacific coast apples were boxed, and they were all sold without dificulty. However, they did not box such grades of fruit as were often found in the middle of barrels packed in the East. Such apples were fed to the hogs or made into cider. There was little chance to work in culls into a box which contained but three or four layers of fruit, and the fruit-grower who packed in boxes would find that he was, from force of conditions alone, marketing a better and more even grade of fruit than he had done in barrels, and this superiority will naturally command a better price than the former. This point should be given due credit. Another important point was that it took skilled labor and a barrel factory to produce barrels, and the empty ones have often to pay quite a freight tariff to the station where filled. They are bulky to get from the station to the orchard, and about the only advantage a barrel has anyway is that one can roll it instead of lifting and it can be packed quicker. Anybody can make a box. The lumber can be obtained in winter in shooks, and the boxes made in stormy weather, without any expense piled up on account of barrel trusts or skilled workmanship.

"Prof. Craig said he saw Spitzenburg apples sold from a box in a New York store 'two for a quarter,' and the bushel boxes were retailed at $5 each. A whole carload was as near alike as peas in a pod, and a box taken at random could be guaranteed to be as good as any other. It is such uniformity and conscientiousness in packing which give a brand a reputation and a selling price far above what it costs to produce and pack. He would not pack seconds in boxes, or mixed or inferior fruit, expecting to get fancy prices. The size of the box used in Canada was 11 by 20 inches, holding a bushel. He spoke of western competition and the rapidity with which some states were coming to the front in apple production; 667,000 boxes of apples were grown in Colorado last year; yet there are growers in New York who imagine that Colorado is and always will be wholly a consumer of fruit grown in other states. New Yorkers have a very short haul to the seaboard, and if they will adopt uniform packages and the carefulness of the far West in packing, they can hold the export business and make money just on the difference in freight.

"Mr. Powell had spent a good deal of time investigating the big eastern markets and interviewing dealers. One dealer thought that perhaps a family trade might be built up in bushel boxes of fancy apples carefully wrapped in fancy wrappers, but there had not been enough of that sort of goods handled yet to demonstrate its practicability.

"Mr. Smith was somewhat pessimistic in his views of the new ways. The barrel was good enough for him. It could be rolled and could be quickly packed at a time when help was scarce and the season was crowding. It would cost all the extra price to wrap each apple, put a man way behind with his orchard work, and in many cases be simply impracticable.

"Mr. Hammond reiterated his previous statements, urging Mr. Smith's attention to the fact that the boxing method distributed labor through storm weather and did not delay outdoor work. The boxes were filled with the fruit from the picking baskets and taken at once, or before night, to cellar or barn or storage room and piled up, to stand until stormy weather or the end of the picking gave time to sort and pack. There was less handling, less waste and less anxiety from weather changes than when apples were put in heaps on the barn floor or in the orchard.

"As regards boxes, Mr. Van Deman said that the Oregon growers made one size of box, but of two forms, one being wider and narrower than the other, so as to accommodate an extra and a first size, or grade. They are all packed in regular tiers and fit the boxes as nicely as oranges. The western apples do not grow to a uniform size. They grow more large apples in proportion to the waste than eastern growers, but they still have undersized and imperfect fruit, which is left in the orchard, where much of the same grade in New York should be left. The barrel is an ideal package for concealing trash and stuff that never should be shipped."

In connection with this discussion, in which so much emphasis is laid on the subject of expert labor being necessary to make the barrels, attention should be called again to the fact that when the box is used as a package, while expert labor is not required to make the boxes, expert packers are needed to pack the fruit properly, and it is said the scarcity of this help is one thing which works against the use of the box in the Western and Northwestern states. There can be no question that it requires more careful packing to put up a box of apples, where the rows and tiers just fit the box, than it does to pack a barrel of fruit. And it also requires apples more nearly uniform in size. There is room for the box as a package, and its use will become more common, but those who have never tried to use it should investigate carefully and experiment somewhat before trying to use it altogether.

Last autumn and early winter great quantities of American fruit were shipped to European markets, and from that quarter comes a complaint against the use of the barrel, the boxed fruit being preferred. The London (England) Fruiterer, in speaking of the condidtion of fruit arriving there, says:

"We notice now that in sorting over a barrel for best trade work, there are a very large proportion that have to go on one side for cheap sale. It is not because these fruits are actually bad, but the barrel bruises have penetrated quite half through some of the fruits. It does seem a pity that packers in Canada and the United States should persist in putting this fine fruit into barrels at all. We regard them as being quite as worthy of a box as are the Albemarles. The same holds good of the best Blenheims. We have seen superb Nova Scotian packings of this fruit in barrels this season that have had quite half the fruit they contained spoiled, in so far as best dessert was concerned, by the barrel bruise. It would have been quite easy to have obtained double the money for the same bulk of fruit had it been in boxes."

In regard to this bruised condition of fruit, we want to call attention to the way apples are handled by the Artesian Ice and Cold Storage Co., of St. Joseph, Mo. This firm buys a quantity of apples every year, which keep in remarkably fine condition and bring the highest price. The apple buyer operates principally in Northwest Missouri and Northeastern Kansas, and has a fondness for buying Jonathans. This fruit is carefully picked, graded in the orchard, placed carefully in barrels, the head covered with burlap, which is held down by the upper hoop of the barrel, and the fruit is rushed into storage at once, without the barrels having been headed at all. The fruit is not pressed and is sound in every way. To show how careful is the handling it may be stated that several hundred barrels were bought from this firm for the Missouri exhibit at the World's Fair, and Mr. Gano, who had charge of the work, said the Jonathans were much better than some of the fruit which had been collected elsewhere, and which had been specially selected as "show fruit."

Mr. Hamilton, manager of the cold storage company, does not believe a Jonathan apple should be pressed. Of course, when the apples are sold out of storage and have to be shipped any great distance, it may be necessary to head them up and press them, but for local trade or for short-distance shipment, there is no need of it, he says. Handled by his plan, the Jonathan keeps as well in storage as any apple, and brings high prices. At present these choice Jonathans, without a bruise or blemish, and as crisp as can be, bring $7 a barrel—and they are worth it. They are much higher in price than oranges, and, to our taste, much better.

For local market, we doubt if this method of handling tender apples can be improved upon; for long-distance shipment, the box may offer a solution of the question.

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Apples, pears, peaches and Damson plums are all right; we will have carloads of Kieffer pears and Elberta peaches.—John W. Copp, Fisher's Hill, Va.

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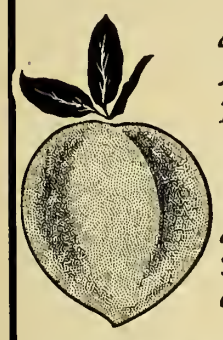

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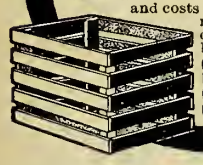

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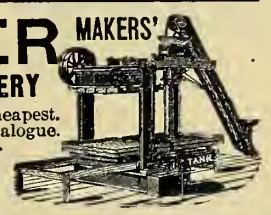

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Irrigating Strawberries.

Some time ago Mr. Charles Deckner of Atlanta, Ga., wrote an article for the Fruit-Grower on the subject of irrigating strawberries, telling how he has succeeded in producing good crops. Before the Georgia State Horticultural Society he explained his methods more fully, which will be interesting to fruit-growers everywhere who are contemplating applying water to their strawberry or other small fruit plantations. The article by Mr. Deckner is important, because he lays special emphasis upon the fact that where strawberry fields are irrigated they are apt to be seriously injured if an application of water is followed by a heavy rain. It may be well, therefore, for all persons who contemplate planting strawberry plantations to be irrigated, to put the plants on well-drained soil, or perhaps on hillsides, provided the slope is not too steep. Mr. Deckner said, in part:

"Irrigation is the artificial application of water to growing plants where moisture is insufficient. This may be done in various ways, but there are two principal methods generally implied by irrigation, by pump or the elevation of water by power, and the other by conducting water from its source by gravity, horizontally or nearly so, to the place where it is to be applied. The latter method is the cheaper, and thousands of acres in Georgia could be inexpensively irrigated by this method. In order to understand more clearly the importance of irrigation for small fruits, we must bear in mind that the latter contains in the neighborhood of ninety per cent of water, and if we have ten berries you must realize that nine are water while one is solid, and this 90 per cent water must be supplied if not already furnished by the clouds. It is true that berries will ripen with much less water than ninety per cent, but here comes the point where we are producing inferior fruit. The quality of a berry is valued by the sugar it contains. Nature, when the life of a plant is in danger, hastens the maturity of its fruit and such fruit we call premature, and in this instance it does not allow sufficient time to turn starch into sugar, and as starch is insoluble and consequently tasteless, we say the berries are tasteless.

"We see here the importance of sufficient moisture during the ripening stages of the fruit. The question has been asked: 'Can this moisture he supplied by planting the berries on bottom land?' We say, Yes, both raspberries and blackberries will do well on good under-drained bottom land, but there is more danger to the crop, due first, to late frosts, which are invariably are heavier on bottom land than upland; then also there is danger of protracted wet spells, when the fruit is generally lost.

"Quite different is the effect of upland, where wet spells are congenial to the fruiting of small fruit and where during droughts, with the aid of irrigation, it is equally if not more productive. In our business above Atlanta, we are using the pump to elevate water for irrigation. The water is taken from a small stream of about thirty-five or forty gallons capacity per minute. This is collected in a pond dammed with rock and cement dam, and large enough to hold the inflow of twenty-four to thirty-six hours. Our pump has a capacity of sixty gallons per minute, elevating the water seventy-five feet high; the power employed is that of a gasoline engine of between three and four horse power. With this outfit we pump between thirty-six and forty thousand gallons of water per day. The oil consumed is five gallons per ten hours, and as gasoline engines run automatically, except for lubricating, this includes all the expense of running. When the land is thoroughly dry, it will take one and one-half days to so saturate one acre that walking over will mire. We have for last six years kept twenty acres under perfect irrigation. To irrigate by either power or gravity the constituency of the soil will first have to be considered; where the soil is light, loose and sandy, the water must be applied over the entire surface of the land. In this instance, the water is thrown on the land by hose and sprinklers, and an elevated tank is necessary, but where the soil is heavy and inclined to bake, the water should be applied in narrow furrows between the rows of the crop. There should be no overflow to bake the surface, but the water should run gently down the row at an incline, so as not to cause washing. In setting fields to small fruit to be irrigated we should bear in mind that the rows should be laid off at such an incline. On our farm when we find irrigation necessary we run a scooter plow between the rows of strawberries. In these rows we turn the water as it is delivered by the pump in a two-inch iron pipe, and divide it between ten or twelve rows at a time. Keep it running until thoroughly saturated. Then take another twelve rows and so on until the field is completed, find that the next morning the surface of the soil under the plants is perfectly damp, the water having penetrated all under the plants without baking the surface. After three or four days the land has sufficiently dried to run a small harrow or cultivator between the furrows in which the water has been running. This watering will last from ten to fifteen days according to the degree of moisture in the atmosphere. The effect is wonderful; all the fruit is well developed both in quality and size; so perfectly that nothing more could be desired. With ordinary care land cannot become hard and cloddy, but it should never be worked when it is wet. There is, however, one great drawback to be seriously considered, and that is if the land has been thoroughly irrigated just before the approach of a protracted rain storm, there are sure losses. The land being wet, a continued wet spell will cause fruit to rot, especially is this true with strawberries. There is, however, less danger where the soil is sandy, and well under-drained.

Handling the Strawberry Crop.

All through the "strawberry belt" of Missouri, Arkansas, Kansas and Illinois there has been much concern of late as to what would be done with the strawberry crop which was probable. From Arkansas points the cry came that berry pickers were wanted, thousands of them, and advertisements were placed in the city appers. Then came this same call from other sections, and the end is not yet.

Now, all this means that the strawberry crop will doubtless be an unusually heavy one. And this means that great care must be exercised, or someone will lose money on strawberries this year. It has been several years since the crop was heavy, and there may be some persons who have forgotten the lessons which were taught them that year, one of which was that there is great danger of glutting certain markets with berries and breaking the market to such an extent that the grower will be called upon to pay charges. Not only must the fruit be carefully distributed among the various markets, but the fruit must be carefully graded and packed, so that only good fruit will find its way to market. The freight or express charges are the same on a crate of poor berries that they are on a crate of good fruit, so that the top price is the place whence come the profits.

Growers everywhere will have to grade their fruit more carefully this season than they have for some years. For the past few seasons buyers have been willing to take almost any kind of fruit, because of the scarcity. But they will not do it this year, if the crop is as large as is now probable. The man who sends soft, knotty, half-ripe berries to market will be apt to pay the freight charges. This fact ought to be understood early, so that growers can look carefully after the packing of their fruit, and the shipping associations look carefully after the marketing of the same.

The Fruit-Grower representative recently attended a meeting of the growers and shippers at Wathena, Kan., where this matter was discussed. The shippers had asked for the appointment of inspectors, whose duty it shall be to look after the fruit which is offered for sale, and market it as to quality, grade, etc. Heretofore the buyers have looked after this work themselves, but the crop this season promises to be so large, it has been thought advisable to have the fruit inspected and marked, and then offered for sale, thus facilitating the handling of the same.

Some of the growers thought the expense of this inspection should be borne by the buyers, but others said it mattered little who actually paid the salaries of these men, it would have to come from the growers in the end, and they had as well pay it outright.

The Wathena growers agreed to contribute so much per acre, to defray the expenses of getting pickers to handle the crop, and an effort will be made to see that none but good fruit goes from that point this year.

Other associations are working along the same line, and it is evident that more attention will be paid to the grading and packing of strawberries this season than for some years past. And the grower who ships poorly packed, soft fruit will be the loser.

T. G. Henley, Spring Garden, Mo., writes that apples are all right there, but that other fruits have been injured somewhat.

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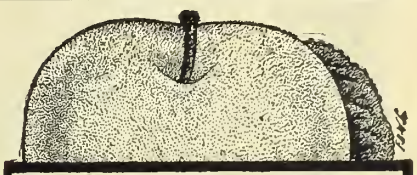

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is the best insecticide known for potato bugs and all leaf eating insects. It kills quickly, and unlike Paris Green, there is absolutely no danger of **burning** or **scorching** the leaves. It adheres to the foliage for a long time, thus doing away with repeated sprayings. It is highly recommended by all the leading entomologists. Made only by the

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Horticulture at the World's Fair.

A representative of The Fruit-Grower visited the Horticultural building at St. Louis World's Fair just before this issue goes to press, and found that the fruit-growers are more nearly up with their work than the exhibitors in any building on the grounds. In fact, on May 12, when the various buildings were inspected by the officials, the Horticultural building was found in best shape of any.

Missouri's exhibit was almost ready, and Superintendent Goodman says it will be in splendid shape long before the Missouri Society meets next month. The Missouri meeting, by the way, will be held in a room in the Agricultural or Horticultural building, instead of in the Missouri State building, as previously announced. Chief Taylor of the Horticultural Department said that the exposition would not consider any exhibits of fruit made in any building except the regular Horticultural Building, and therefore the exhibits will have to be made there, and the meetings of the society will be held in that building or in the Agricultural building near by. The Christian Endeavor Hotel, just outside the grounds, has been made headquarters for those who attend the meeting.

The installation of the Missouri exhibit is the most elaborate in the building, and at the time of our visit the fruit on the tables was the best in the room. Illinois was getting in shape and Kansas was practically all in order—and with a good exhibit, too. Nebraska, Arkansas and Colorado all have good exhibits, as do Oregon, California and the other Western states—some of the Oregon and California apples are wonderfully fine. Virginia has her exhibit almost ready, and it is a good one. It is said the state has plenty of fruit in storage, and will maintain an exhibit which will be most creditable.

Prof. Stinson, in charge of the Horticultural Department, said no strawberries had been exhibited, so that it will rest with Missouri to make the first exhibit of this kind. Colorado is preparing for exhibits of small fruits and peaches later, with refrigerators, with glass tops and sides, in which to exhibit the fruits.

There is a great scarcity of exhibits of horticultural machinery, Goulds Mfg. Co., Dust Sprayer Manufacturing Co., and one or two others being the only firms which have exhibits in place now. Every spray pump manufacturer in the country ought to have exhibits in this building, as well as manufacturers of cultivators especially adapted to orchard work, manufacturers of fruit packages, pickers, graders, etc.

The fruit exhibits are judged by one man who scores the fruit placed on the tables on score of points. Dr. J. C. Whitten of Missouri was the judge the first week, and Prof. L. R. Taft of Michigan was judge the week of our visit. This system of scoring and more extended notice of the exhibits will be given next month.

We wish to say, however, this early in the exposition, that the installation of the fruit exhibits is the best ever attempted before, and these exhibits will be maintained on a higher plane than ever before. The only criticism one could offer is that the Horticultural Building is so far from the main buildings that not over 10 per cent of those who visit the fair will visit this building. And the fruit exhibit alone is worth a long trip to see it.

Platte Purchase Horticultural Society.

At the May meeting of this society, which was held in St. Joseph, Mo., May 7, the members present reported unusually good prospects for fruits of all kinds. Peaches were reported to promise a better crop than last year, and other fruits were in better condition than for many years. Apples were reported blooming late, and the bloom is well distributed over the tree and is remarkably healthy. The opinion was also expressed that there is no canker worm this spring, even orchards which have been badly infested for many years having had no signs of the insect this spring.

The question of packages for apples was brought up for discussion. The members present were in favor of taking the matter up with barrel manufacturers early, so that in case of a crop there will be no trouble such as was experienced in New York last season. If the growers pack and handle their own fruit, they will have the barrels on hand, and if the fruit is sold on the tree, the buyer will be only too glad to get the barrels which have been stored.

The World's Fair committee, consisting of N. F. Murray, W. G. Gano and B. F. Stuart was urged to secure the attendance of strawberry growers at the next meeting, to be held Saturday, June 4, at the court house in St. Joseph. The society will make an exhibit of strawberries at the Missouri Society meeting, to be held in St. Louis, and the attendance of strawberry growers is desired at the next meeting.

A number of members reported in regard to their spraying operations. Few had sprayed before the blossoms fell, but most of them were prepared to spray as soon as the blooming time had past. Mr. W. D. Maxwell, who uses the dust process, had sprayed his orchard three times with lime dust and fungicides. Asked as to how he was preparing his lime dust this season, Mr. Maxwell said he has changed his method from that heretofore followed. This year he has used the following: Six pounds of concentrated lye, dissolved in twelve gallons of water; with this solution he slakes a barrel of good stone lime to a powder. To this is added twenty-five pounds of powdered copper sulphate and twenty-five pounds of powdered sulphur. At the first spraying after the blooms drop Mr. Maxwell will add five pounds of paris green to the barrel of lime, for the codling moth. The paris green will be used in all sprayings hereafter.

Mr. Maxwell said he had found that powdered copper sulphate, mixed with the lime dust, could be easily applied to the tree. When first applied it looks white on the foliage, but with a fall of dew, or even if the air is moist, the moisture will cause the dust to turn to a bluish color, making the trees look as though they had been sprayed with the liquid.

Asked as to what he did for the green apple louse, Mr. Maxwell said the concentrated lye with which the lime had been slaked will kill this pest. Mr. Maxwell will spray his orchard this year as late as August 1, and later if necessary to get the later broods of codling moth.

At the next meeting of the society the subject of apple barrels will be brought up, the secretary having been instructed to correspond with manufacturers of cooperage stock, as well as with the manufacturers of the finished barrels. The matter of sending berries to St. Louis will also come up, and the selection of delegates to the Missouri meeting.

South Water Street, Chicago

The acompanying illustration shows perhaps the busiest street in America, so far as the fruit and produce business is concerned. It is a scene on South Water street, Chicago, the produce center of that ciey. The cut shows the congested condition of the street, and will give one an idea of the great volume of business handled there daily. The cut was loaned to The Fruit-Grower by Coyne Bros., one of the best commission firms on the street, whose place of business is indicated by the cross mark shown in the illustration. This street is a most interesting spot during the summer season, and one can find all kinds of fruits and vegetables offered for sale. Next a crate of early apples from the South will appear a barrel of the crop of the year previous, just out of cold storage, so that the two crops will overlap; packed against a crate of early cabbage will be old cabbage from the North, or perhaps between the two will be pineapples from some other point in the far South.

Good Crop Promised in Colorado.

Mr. J. W. Work, Canon City, Colo., sends the following notes concerning prospects for fruit in that section, from which some of the bets fruit is shipped each year.

"Prospects for a large crop in Fremont County were never more promising than they are this season, except early-blooming pears, plums and very early apples. Mid-season, fall and winter apples promise 100 per cent crop. Orchardists are making their first spraying for codling moth. Spraying against this insect is absolutely necessary here if good fruit is to be secured. To the credit of apple growers it can be said they are up-to-date and adopt the best remedies proposed. To this end a large number of our growers are using arsenate of lead this year, which, from experiments made last year, was most effective in its work. It adhered to the foliage throughout the season, while other preparations washed off easily after rains. From reports received from the western counties—Mesa, Delta, Montrose, Garfield and Montezuma—an unusually heavy yield of all kinds of fruits is likely, the peach outlook being especially good."

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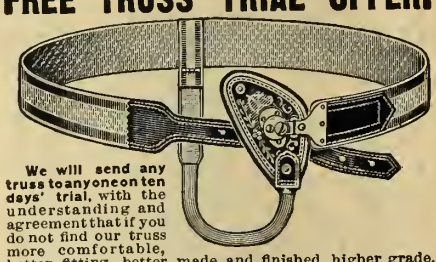

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Dealers in Berry Box Material, Grape Baskets, Egg Case Material. All kinds of Baskets in stock. Established 1864.

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Solicit Consignments of all Kinds of
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References: Mercantile Agencies; Corn Exchange National Bank, Chicago.

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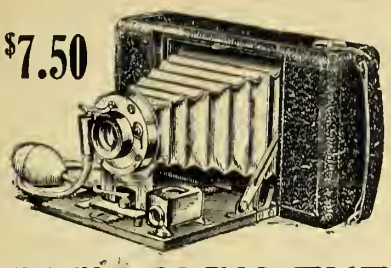

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PARTNER WANTED—In operating orchard-farm of 240 acres, well located, improved and unincumbered; 2,000 apple trees bearing and coming into bearing; 3,000 planted this spring and same number next. Competent means and good references necessary. Address "Partner," care Fruit-Grower Co., St. Joseph, Mo.

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When writing to advertisers always mention The Western Fruit-Grower.

More Light on Crown Gall.

In the last issue of The Fruit Grower I notice that a subscriber has made reference to the experiments we have been carrying on with the crown gall disease.

Regarding the first question asked, as to the effect of the galls upon the trees, will say that the tree so affected may or may not be able to produce profitable crops of fruit while so affected. All badly affected trees should be discarded in planting. Those with only a trace of the gall may live and be useful. This, however, will depend upon their vigor, which will depend largely upon the season and the character of the soil. If the soil is rich enough and the season favorable, they may make such vigorous growth in the beginning and continue to do so afterwards that they will in large measure overcome the gall. I do not mean to say that the disease will disappear but rather that the trees are able to withstand it. If on the other hand these affected trees were to become infested with borers, or a disastrous drouth appear, or the soil be so poor as to barely support growth, then the galls might quickly surround the trees at the crown and cause them to break off or die by reason of the abnormal growth on the bark and growing layers of the wood, which would prevent them from performing their proper functions.

The specific effects of the gall, then, are seen in the trees dwindling away because of their being girdled with the abnormal growth, or they may actually be broken off at the ground. We have several trees on the experimental grounds at the present time of different varieties that have actually broken off at the crown from their own weight this spring.

While the galls seem to form more readily where there is a wound on the roots, we have found in our experiments that seedling trees are also very readily attacked. I am not prepared at this time to state whether as many trees would be attacked where budded as where grafted, but I am inclined to believe that if the trees were budded the trouble would be in some degree avoided.

I wish to state emphatically that this apple gall is no new disease. It is, however, apparently on the increase, due to several causes, prominent among which are the increase in the number of trees being propagated and the consequent increase of the disease in the soils of the country. Moreover, I am led to believe they strongly that much of this gall has its beginning in seedling stock and that the nurseryman, no matter how free his soil may be from the trouble, may have a great deal of it among his trees. If this state of affairs is found to be true, to get at the bottom of the trouble, it will be necessary for the growers of apple stock to take the matter in hand and exercise every care to prevent their seedlings from becoming infected.

All enlargements at or near the crown are by no means to be feared as crown gall. If the true gall is present it cannot be mistaken, as it will be apparent at a glance. These galls are very rough, much convoluted and in every respect are wart-like in appearance. The surface of these galls is never smooth any more than the surface of a black walnut is smooth like the surface of a hickory nut. Woolly aphis often forms smooth surfaced knots on the roots, but oftener, enlargements are formed at the crown by reason of the seedling stock having outgrown the scion or part above ground.

Since there is no reliable remedy for the disease known at present, the best that the nurserymen can do is to change their ground as often as possible and cull the gall trees closely from their stock when making shipments. No buyer of trees should be alarmed if he finds a few with little galls the size of the end of his finger, but if there are large ones as big as hickory nuts or walnuts, they should be rejected. No careful nurseryman, however, will send out such stock as this, but if he does, he would deserve to have it returned at his expense.

The remark by the editor of The Fruit-Grower, in the April number, with regard to our gall experiments were in part correct. We did find that from 14 to 87 per cent of the grafted stock was affected with the gall, but the large percentages were found only in soil that was known to be full of the gall, diseased trees having been grown in it for the past several years. This shows how dangerous it is to use the same ground over and over for nursery purposes, especially the apple. Some of our stock experimented with was inoculated with the disease and of course a large percentage of that was affected with galls. W. L. HOWARD.

Missouri Experiment Station.

Crown Gall Information Wanted.

A letter has been received by The Fruit-Grower from Prof. W. L. Howard of the Missouri Experiment Station, asking the co-operation of our readers in trying to ascertain the extent of occurrence of crown gall. This disease is so important that we know Fruit-Grower readers generally will be glad to render any assistance in their power in studying this pest. Prof. Howard says he hopes our readers will watch for this disease and correspond with him in regard to the matter, and he adds:

"We have recently had some old grape vines killed apparently from this trouble in our experimental vineyard. The galls formed just at the surface of the ground, very much as they are seen on the apple tree. I do not believe that it is inclined to spread very rapidly, even where circumstances would seem to favor its doing so, but it is possible that it may in the future become worse than it is now. I should further like to ask what fruits besides the apple, peach, plum and raspberry have been seen by ony one to have galls growing on them, whether the plants be wild or cultivated. I have heard that galls similar to those found upon the apple are common on some of the oaks in some sections of the state."

Homeseekers' Excursion.

The Chicago Great Western Railway will on the first and third Tuesday up to October 18, sell tickets to points in Alberta, Arizona, Assiniboia, Canadian Northwest, Colorado, Indian Territory, Iowa, Kansas, Minnesota, Missouri, Nebraska, New Mexico, North Dakota, Oklahoma, Saskatchawan, Texas, Utah and Wyoming. For further information apply to M. F. Montgomery, City Passenger & Ticket Agent, 414 Felix St., St. Joseph, Mo.

Prospects for Fruit.

No cards were sent to Fruit-Grower correspondents for fruit-crop reports this month, our general correspondence having indicated there is little if any, change from the situation of a month ago. Next month full reports will be published from all sections.

One correction is due the southeastern part of Nebraska, in which the peach crop was reported to have been injured considerably. O. D. Howe, Table Rock, Neb., writes that on May 2 every peach tree of any kind or size was a mass of bloom, and that all other fruits promised equally well.

COULD YOU USE ANY KIND OF A SEWING MACHINE AT ANY PRICE?

If there is any price so low, any offer so liberal that you would think of accepting on trial a new high grade, drop cabinet or upright Minnesota, Singer, Wheeler & Wilson, Standard, White or New Home Sewing Machine, on a postal card or in a letter, say: "Send me your latest Sewing Machine Catalogue," and you will receive by return mail, postpaid, free of cost, the handsomest sewing machine catalogue ever published. It will name you prices on the Minnesota, Singer, Wheeler & Wilson, White, Standard and New Home sewing machines that will surprise you, we will make you a new and attractive proposition, a sewing machine offer that will astonish you.

If you can make any use of any sewing machine at any price, if any kind of an offer would interest you, don't fail to write us at once and get our latest book, our latest offers, our new and most surprising proposition. Address,

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BERRY GROWERS Why not use our Pickers' Tally Tickets, with your name and address on them. Samples and prices for the asking. Address THOMPSON, "The Printer," R. F. D. No. 6, Oswego, N. Y.

Berry Boxes and Fruit Packages

St. Louis Basket & Box Co.

Write for Prices ST. LOUIS, MO.

Has YOUR Subscription Expired?

Please inspect the "DATE TAG" in connection with the address on wrapper in which The Fruit-Grower is mailed.

If your tag reads "May, '04," or a date farther back, we hope you will renew at once or WRITE US if you desire the paper stopped. We do not try to FORCE The Fruit-Grower upon anyone, but always continue 'till ordered stopped.

If you are not ready to remit, LET US KNOW and we will advance your subscription until such time as you ARE ready.

April 15th we sent out letters to all names in arrears on our list, and our subscription department has been "swamped" entering renewals. There are several hundred, however, yet to hear from, and we hope to receive renewals or a NOTICE TO STOP the paper by June 1st. Are YOU in arrears?

If you are receiving two papers containing regular stencil address and date tag, or if there is an error of any sort in your subscription account, write us, for we GUARANTEE satisfaction.

When writing always use same name or initials and give old postoffice if you have moved. We receive letters every day which contain neither the sender's name or address. Be careful, write plainly and thus avoid errors.

Remember, you may send your renewal for one year and the names of four new subscribers for one dollar.

The Fruit-Grower Co., St. Joseph, Mo.

THE WESTERN
FRUIT-GROWER
ST. JOSEPH MISSOURI

Address all Communications and make Remittances Payable to "The Fruit-Grower Company," Seventh and Charles Streets, St. Joseph, Mo.

W. G. Campbell, Jr., General Manager. James M. Irvine, Managing Editor

Advertising Rate—Per Agate Line, 15 Cents. Fourteen Lines to the Inch.

No advertisement in class generally termed "objectionable" received under any conditions. Editions mailed on 15th; Forms close on 10th; i. e., January forms close January 10th, etc.

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Unless otherwise ordered, subscriptions will commence with month following date of remittauce, and coutinue until ordered stopped and arrearages paid. If you desire paper to stop when time is up, notify us. The letter "S" after date on your address tag siguifies that paper will stop on that date. The address tag stands as a receipt for your remittance.

In compiling a list of over Thirty Thousand subscribers it is an easy matter to make mistakes, but we guarantee fair treatment to everyone. If you find an error in your address tag, or do not receive paper promptly, write us and we will trace matter up at once.

Entered as Second-Class Matter in the Postoffice at Saint Joseph, Missouri

Volume 15 ST. JOSEPH, MO., MAY 15, 1904 Number 5

The Fruit-Grower recently published a letter from an Illinois reader in regard to a man from Michigan who is "treating" fruit trees in Illinois by boring a hole in the trunk and injecting a preparation which will render the trees immune from attacks by insects, fungi, etc. This man claimed his method was indorsed by the Michigan Agricultural College. This is what Prof. Taft of the College says of the fellow and his plan: "The representatives of a patent process for rendering fruit and shade trees immune against insects and fungous diseases by inserting powder in a hole bored into the tree, have canvassed several counties in western Michigan, and are now endeavoring to introduce it in some of the eastern states. In their circulars, they state that it has been used by the Michigan Agricultural College. The facts are that letters of inquiry regarding this treatment were received from many fruit-growers, and while it was very evident from the nature of the treatment that it could not satisfy the claims made for it, the writer did not feel like pronouncing it a fraud without further knowledge. Our fruit-growers were cautioned against investing in the treatment until its value had been determined. That we might have accurate knowledge regarding it, arrangements were made with the agent to treat a number of trees in the orchards of the Experiment Station during the past winter, but of course we are not in a position to give any results. However, as the material is composed of charcoal, sulphur and soda, we have no reason to expect that it will be of value, and would caution every one against representations made by the agents to the contrary."

Spray pump manufacturers report the demand for pumps is greater this year than ever before, and it is especially noted by a number of them that a great many orchardists are using pumps of greater power. This is an indication of progress along the line of spraying, and it is to be hoped that the experience of the present year will encourage growers everywhere to make a still harder fight against insect and fungous pests. The Fruit-Grower hopes that all its readers who spray their orchards this year will keep a record of their work—if you succeed, then prepare to tell us next winter what brought your success. If you fail—as there will be failures—report just what you did, and perhaps the cause of your failure can be pointed out. There is a selfish reason why every grower should try to help all other growers to be successful in their spraying operations—the success of one helps the fruit of the entire neighborhood. One should not care so much who kills the canker worms or the codling moth—just so the insects are destroyed. Let us keep a record of the experience of this year, so that next year's spraying will be still more effective.

A measure was introduced in the New York legislature regulating the branding and sale of closed fruit packages. The bill was modeled somewhat after the law in force in Canada, which was explained in The Fruit-Grower some months ago. It requires that every package shall be marked with the address of the grower, name of variety, place where grown, and designation of quality, as first, second or third. If marked first, it must be "well-grown specimens of one variety, sound, of nearly uniform size, of good color for the variety, of normal shape ,and not less than 90 per cent free from scab, worm holes, bruises, and other defects, and be properly packed. The proposed law was opposed by the Western New York Horticultural Society, and one can readily understand why they should be opposed to it, as the law would affect the New York growers, but could hardly be made to apply to fruit grown in another state and shipped into New York. The interstate commerce law would interfere. The objects sought to be attained are all right, but can be best secured by national legislation, which will apply to fruit grown everywhere in the country. The packing, packages and grading will then be uniform.

The Ozark Fruit Company is the name of a company which has been incorporated under the laws of Missouri, by New York men, the object of which, as set forth in the incorporation papers, is to grow fruits of all kinds and can and preserve the same. We do not know whether this company is going to undertake all this work at the start, although its capitalization of $1,000,000 will permit this, if desirable. But certain it is there is a field for canning and preserving companies which will put up a first-class article. At present preserving companies in the Eastern states and in California furnish most of the high-grade canned fruits and preserves, but there is no question that such companies can find an excellent field in Missouri and some of the states of the Middle West. Establishments of this kind can utilize much fruit which is too ripe to ship, and will be of incalculable benefit to the growers. Another industry which can be developed throughout the West is the establishment of factories which shall make unfermented grape juice. In Western New York thousands of tons of grapes are used to make this grape juice every year, and the product sells at high prices. These methods of utilizing the surplus fruits will come in time, and growers should encourage every effort to provide them.

It has been especially noted during the past years that in Missouri, Illinois, Kansas and some of the other Western states a great many business men of the cities are engaging in fruit-growing on a commercial scale. In Northwest Missouri, for instance, there are many orchards which have been planted, or are being planted by city men. Many of these orchards are neglected, depending wholly on hired help to care for the young trees, and these orchards will scarcely become profitable. Others, however, are well cared for, and will make money for their owners. This investment of money in apple orchards on the part of city men has made a demand for competent men to look after these orchards. There is a demand for graduates of the agricultural colleges for this work, and the supply of these men is extremely limited. There is a great field here for graduates, and most of the agricultural colleges report that they have calls for more men than can be furnished.

The summer meeting of the Missouri State Horticultural Society will be held in the Missouri building on the World's Fair grounds, at St. Louis, June 7 to 10. A feature of the meeting will be an exhibit of strawberries, which is expected to be one of the best ever made in the state. Growers should read the instructions published elsewhere in this issue, which have been sent out by Superintendent Goodman, and send some of their choice fruit to this show, and every grower who can possibly attnd the meeting should do so. Visitors will be present from other states, and Missourians should be on hand to welcome them.

No fruit crop reports are published this month, as the general situation is unchanged from that of a month ago. Prospects are unusually good, better than for years. Peaches promise a better crop throughout Missouri, Kansas and Illinois than was at first predicted, and the crop in Southern Iowa and Nebraska came out in good shape. But in Oklahoma and Indian Territory the peaches were badly hurt by late frosts, and the crop will be short down there. Next month The Fruit-Grower will have other reports, and by that time the information which is secured will be more satisfactory, owing to the blooming period of all fruits having passed.

Reliable advertisers ought to keep their ads in the columns of The Fruit-Grower, for our readers are learning to know that all good advertisers who are interested in securing the business of fruit farmers ought to advertise with us. A subscriber at Coleman's Falls, Va., recently wrote us saying: "I was about to send to the ———— Company for one of their machines, but fail to see the firm's ad in The Fruit-Grower's columns any longer. Please adv'se me if the firm is in good standing." The firm was all right, but had simply thought to shut off advertising for the one month. But its ad appeared the next month all right.

A subscriber wrote us recently in regard to a matter which deserves attention. He bought a spray pump which was mounted on a barrel, said to contain fifty gallons. Thinking the measurements were correct, the subscriber prepared his copper sulphate, paris green and lime for fifty gallons of water, and began work. In a few days he found that the foliage of his trees was somewhat burned, as a result of the mixture having been too strong. He began an investigation, and found that the barrel which he had thought contained fifty gallons, as a matter of fact held only thirty-eight gallons, and he had not used enough water in his spray mixture. Manufacturers may be unable to gauge the capacity of a barrel exactly, but knowing that the barrel is likely to be used as a measure, they should ascertain the contents and mark on the barrel before leaving the factory. Even then, growers should prove the capacity of the barrels, for it may often happen, as in this case, that where the mixture is already strong enough, a few gallons of water less than is required will mean the burning of the foliage.

There is much interest among fruit-growers everywhere in the question of packages for the various kinds of fruits. There seems to be a general shortage, and many persons are fearful the supply will be inadequate. Prices generally rule high, with prospects of going higher. With this condition staring the grower, and with the prospects of large crops of fruit throughout the country, and consequent lowering of price, every effort should be taken to see that only first-class fruit is sent to market. If you can use the second grade fruit at home, use it, but whether you can or not, don't ship it. If prices for packages are high and the supply of fruit is large, there will be surely a loss. Recently we attended a meeting of berry growers, at which the subject of inspection of berries was discussed. It was the general opinion that the berries should be inspected and marked, before being offered for sale. And the grower could not be held for any fruit which passed the inspection and was approved. The question was asked of the shippers as to what would be done with the fruit which was not good enough to receive the approval of the inspectors. The shipper replied that he would handle it for the grower, if desired, and would send it out on consignment, and get out of the fruit all that could be obtained. Now, this seems to us to be a great mistake. Fruit that is not good enough to be bought outright, at the place of shipment, is certainly not good enough to ship on consignment. It is sure to arrive in poor condition, and will have a tendency to break the market for the better fruit. Inspection is all right, if it will mean that no poor fruit is to be shipped; but the whole plan will fail if the rejected fruit is shipped to perhaps the same market, on consignment. Keep the poor fruit at home, can it, feed it to hogs, or do whatever you please—but don't ship it. Strawberry growers in Southern Missouri will remember the disastrous season of several years ago, when this lesson was learned.

Lime, Sulphur and Salt Mixture Without Boiling.

I am in the midst of my spraying work, as we have March weather yet. Thermometer about 32 to 40 each morning; 17 miles from Philadelphia. We use the lime, sulphur and salt this year without boiling, except to mix the sulphur and slack the lime, and we have no trouble to spray it on. We use 40 pounds lime, 20 pounds sulphur, 15 pounds of salt. Then as we are having so much rain I use 10 to 20 pounds of caustic soda and add water enough to make 100 gallons. Have tried caustic soda alone and found it took three applications to kill the scale. I have made several tests with different strengths. And also have been testing some creosote oil, from a firm in Florida, which they claimed had killed the scale on peach and orange trees in Florida. They use one part oil to 100 parts water. They sent me one-half gallon to test here, which I have done. It works nicely, but I have to await results, and if satisfactory will report to you later, as it is so little trouble to apply. The cost is $1.00 per gallon. Making a spray as I use it, one part to 50 of water. I made 25 gallons. Sprayed 25 trees the 15th, also on Feb. 21, with a brush tested it on 5 trees with caustic soda alongside; found it took two applications of the oil and three of the soda to kill the scale.

Have you any knowledge of this oil? Our state and the government station at Washington were not acquainted with it. DAVID M. ELLIS.

Bridgeport, Pa.

Who has tried this oil? Perhaps this is the same thing which P. W. H., Clarksville, Tenn., asked about in our April number. This preparation was unknown to Prof. Stedman, of the Missouri Experiment Station.

Soot as a Fertilizer.

Chimney soot is one of the richest fertilizers known. That from coal is very rich in ammonia. When coal is burned, ammonia is set free, and during the various changes which take place during the process sulphite and carbonate of ammonia are both formed. Soot is a highly-compound substance, containing in its composition not only ammonia, but lime, sulphuric acid, nitric acid, phosphoric acid, magnesia, potash, acetic acid, chlorine and iron, nearly all of which are valuable, directly or indirectly. The value of soot is well known in England, where it sells for about 10 pounds sterling per ton, or about $48. It is often thrown away as worthless by those who do not know its value, but careful farmers should save every ounce for use. Sprinkled around some kinds of plants, it often prevents attacks from insects, and the rains then carry it down into the earth, where it does duty as a fertilizer. Soot from coal has been once thought to be a very worthless substance, but experience and science have taught us to know better.—American Fertilizer.

Notes by the Way

Our friend, J. H. Hale, is quoted by an Eastern paper as having said that the peach crop of Georgia this season bids fair to be double the bumper crop of 1808, when 2,500 carloads were shipped from that state to Northern and Eastern markets. This year, according to present prospects, the yield will run from 4,000 to 5,000 carloads.

This is a lot of peaches, particularly when a majority of these peaches from Georgia are of one variety—Elberta. Mr. Hale is among those who have contended for several years that the Elberta peach has been overplanted, and it may be that this season will demonstrate the truth of his prophecy. In sections where the peach crop is heavy, most of the trees are Elberta, so that the variety will suffer a setback there. And in some of our Western states Elberta peaches have been killed with such regularity, while other less popular sorts have survived the winter, that our growers are losing their enthusiasm for this variety.

Down in Georgia the growers have been planting fewer trees of Elberta, comparatively, than they have of other varieties—and other states are following, to some extent. But Elberta has been the leader in the Middle West for commercial orchards, and many orchards contain few trees of other varieties.

But has the time not come to change? Is there not some other good peach, a little earlier, or a little later, or a little more hardy, which has the shipping qualities of Elberta, which can be substituted? We submit that the time has come to consider this matter—if, indeed, the time to consider it did not come several years ago.

What shall be planted, if we cease planting the Elberta? For a commercial variety, of course. The variety which is to be selected will have to be one which is firm enough to carry to market, and open up in good shape. It will have to be a peach which will not show bruises too plainly—and this may mean that it will have to be yellow. And, for the northern portion of what is known as the peach country, it will have to be a variety somewhat more hardy than Elberta. What variety—or varieties—will be chosen?

This does not mean that Elberta is to be done away with, by any means. It has its place. But we have found, in talking with growers lately, that there is more interest in some other varieties which will take the place of Elberta. The most thoughtful growers are looking for this variety, and we daresay this subject will be discussed at horticultural meetings within the next year or so, for there is a growing impression everywhere that there is an overplanting of Elberta.

While we are on this question of varieties, we want to speak of an apple which has become more popular within the past two or three years, at least in the northern part of Missouri and Kansas, and in Southern Iowa and Nebraska. This apple is the Jonathan. Recently some of the daily newspapers have had articles on the subject of an imaginary battle among Missouri apple-growers between the Jonathan and Ben Davis—and, according to these same papers, old Ben came out winner. But there is no fight between them, nor need there be. Both have been grown for years, and both will continue to be grown. The point we wish to make is that in the territory referred to the Jonathan is increasing in popularity. Especially is this so along the Missouri River, where the hill lands grow the most perfect Jonathans produced anywhere.

Last year th eJonathan produced more and better fruit than perhaps any of the other winter varieties, and the same was true in the autumn of 1902. In collecting apples for the World's Fair exhibit, Missouri collectors found that a larger percentage of good Jonathans could be secured than of any other variety.

And where can a better apple be found than the Jonathan? Where this apple can be grown to perfection—as it can in the territory named—what variety is to be preferred to it? A year or so ago, at the meeting of the Illinois State Horticultural Society, Mr. Ben Newhall, the apple handler, of Chicago, made the statement that he would as soon invest his money in Jonathan apples grown along the Missouri River hills as to invest it in any other variety which can be grown.

The Jonathan has the right color; a rich, dark red; it is of good size, and of most excellent quality; it is a splendid eating apple, and one of the best cookers; the tree is a good one, long-lived and prolific. And the price paid for Jonathans is always near the top mark.

On the first of April the market papers reported that Baldwin and other apples in storage in the East were moving rather slowly, with prices about $3.50 per barrel. But in St. Joseph Jonathans were being moved at from $6.00 to $7.00 per barrel—and one dealer was reported to have something over 2,000 barrels in storage at that time, and they were in perfect condition.

Formerly the objection was made that the Jonathan is not a good keeper, but with the use of cold storage this claim can no longer be made. No apple keeps better in storage than Jonathan—and few keep so well. Its dark color shows no sign of scald, and the fruit opens up crisp and firm. In the southern section of the apple belt the Jonathan ripens too soon, perhaps, and has a tendency to drop prematurely, but in the country north of the central part of Missouri this fault is not so marked. It often occurs that an orchard waits too long to pick his Jonathans, preferring to start on them and work on to the Ben Davis as soon as they are picked, and this is a mistake, for by the time the Ben Davis are ready, most of the Jonathans will have fallen.

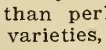
But if the fruit is allowed to color well, picked carefully, and rushed to cold storage, no apple will show up better when taken out of storage than will the Jonathan, and we know of no apple which will bring better prices. We venture to say that when the Missouri Jonathans are displayed at St. Louis, and when samples are distributed among those who visit the Missouri exhibit, Jonathan stock will begin to rise and this variety will increase in popularity.

Now, we suspect that someone will suggest that one who speaks so kindly of the Jonathan is untrue to Ben Davis—but not so. This varelty will still be a great money-maker. We are only referring to the increasing popularity of the Jonathan in a section where it can be grown to such perfection, and this increasing popularity is not at the expense of Ben Davis at all. The latter will stand more abuse than Jonathan, for the latter must be handled carefully, and old Ben will still be grown. Our suggestion would be, not fewer Ben Davis, but more Jonathans, for the newer orchards which are to be planted along the Missouri River hills.

Thinning Peaches Pays.

Not every grower appreciates the importance of thinning peaches, but there can be no question of the necessity of the practice, if best results are to be secured. The Michigan Experiment Station reports the following concerning this matter.

"A thinning test was started in 1903, to last over a period of three years. Of one lot, one tree was thinned to eight inches; one was thinned to four or five inches, and one tree was left unthinned. Of the other varieties, one tree was thinned to eight inches and one tree left unthinned. It was noted at the end of the first season's test that all trees severely thinned were much thriftier, and their foliage much healthier, and did not fall from the trees as early in the season as on unthinned trees; that peaches from the thinned trees sold for nearly double as much as those from unthinned trees. The varieties chosen for the test happened to ripen at a time when there was a good demand, otherwise peaches from unthinned trees would have been unsalable. From a commercial standpoint, the benefit from heavy thinning was very apparent."



Commercial fertilizer has two very great advantages. It is portable and the supply adequate; one wagon load of it will contain as many pounds of potash and nitrate as ten loads of manure. Its application is simple; sow broadcast and work in with a cutaway harrow. I have a pear orchard coming into bearing that I treat every alternate year with a feed of commercial fertilizer. This is composed of nitrogen, 2½ per cent; phosphoric acid, 12 per cent; potash, 15 per cent, and whose filling is largely composed of bone meal.—T. E. Goodrich, Cobden, Ill.

The Family Circle

Our Brother Jonathan seems to have made a hit with the members of "The Family." Many of our readers have written about our new trade-mark, showing that his smile has been noticed. W. A. Irvin, Springfield, Mo., approves of Brother Jonathan in the following letter:

"Allow me to congratulate you on the Brother Jonathan 'phiz.' This is just the beginning of Brother Jonathan's smile at the waning prestige of Brother Ben Davis, and in a few years his smile will be all over the page. For he will soon be on top. The display of this year's crop at the

World's Fair will settle the matter with Brother Jonathan as to which is the best commercial apple of the future. In planting my orchard eight years ago everyone of whom I asked advice said, 'Plant Ben Davis and Ingram,' but I had a suspicion that consumers would discriminate in the event of a full crop, and I planted more than one-third Jonathans, and now wish I had made it all Jonathans. Jonathan trees are as healthy as Ben Davis, and this year's bloom double discounts the bloom on Ben Davis. Mulching with ashes stops the premature drooping, and with cold storage I have kept Jonathans until April."

What Mr. Irvin says about Brother Jonathan is true—and yet, look at the pleasant countenance of the latter, and then ask if one ought to stir up strife between him and Brother Ben. No, no; our Brother Jonathan is a peaceful fellow and will not fight—but there can be no question that he is "up and a-coming"—he couldn't belong to The Fruit-Grower Family if he were not.

Brother Jonathan's smile is as broad as ever this month—in fact, it is, if anything, "just a leetle" broader than last month. And all because of the reports from the subscription department for April. Usually, as farm work becomes more pressing in spring, and there is less time for reading, our subscription department experiences a lull. But April showed no let-up from the good record of March, and subscription receipts were almost double the receipts in April, 1903.

All this indicates that the members of The Family are going to help us reach the 50,000 mark within a year or so. And do you know that, from present indications, The Fruit-Grower will have 40,000 circulation by September 1? Fact. Ten thousand new members of The Family within a year will be pretty good work, don't you think? And yet this result cannot be attained unless we have the help of all our readers. Get up a club of new subscribers, and send with your renewal—remember you can send four new subscribers and your own renewal, all for $1. Don't put this off, but do it now. The prospects for a good fruit crop will stimulate interest in a fruit paper, and you can get the subscriptions of your neighbors for the asking. Our readers say all they have to do is to show copies of The Fruit-Grower to those who are interested in fruit culture, and subscriptions are forthcoming.

And if your own time is out, renew it at once. Lots of subscribers simply neglect the matter, thinking the amount is small—and it is; but the total of these small amounts is large, and it is an important item to The Fruit-Grower. None of our readers want to cause the management any inconvenience, we are sure, and we trust they will not overlook their renewals.

You have heard the story of the man who was dying, and who was several years in arrears to his county paper. The editor visited the death-bed, and asked:

"How do you feel?"

"All looks bright before me," gasped the subscriber.

"I thought so," said the editor, "you'll see the blaze in about ten minutes."

Now, we do not want anything like this to happen to any of the members of The Family, although we wish a bright future for all of them.

But, seriously, attend to this at once, if the address tag shows your subscription to have expired. If for any reason you wish the visits of The Fruit-Grower discontinued, that's all right, too; simply drop us a card to this effect, and your name will be taken from the list. Is this not fair? We want all our friends to receive The Fruit-Grower, if they desire it; if they do not want it, then advise us to this effect.

Now, you may ask, What is The Fruit-Grower going to do to show its appreciation of all this help on the part of its readers?

Well, we are going to make the paper better than ever before. Of course, during the summer season, when advertising patronage is light, the paper will be somewhat reduced in size, but it will still be full of good horticultural matter every month. At the present time we are preparing for some splendid issues for next fall and winter. What would you think if we were to say that we are at work on plans for the issue for January, 1905? Well, we are at this work, and not only for January, but February and March as well. It is now our intention to have five or six special issues next fall and winter, with two-colored cover design each month. We will do our part all right.

You know we publish extracts from a few of the letters we receive, telling what some of our readers think of The Fruit-Grower. Not all of the letters are from persons who renew their subscriptions, for some persons stop the paper for one reason or another. Here are three instances which we think are really funny:

An Ohio man stops his paper, and says: "We cannot grow the Ben Davis apple here, and cannot sell it if we had it; so stop the paper. It is all right in every way, but I cannot grow Ben Davis apples."

A lady in Oregon says she doesn't want The Fruit-Grower because Major Holsinger "defended the abominable mole"—that's just the way she put it. Now, we had thought that the enemies of the mole had all the best of the argument—and all the best of the Major. But this woman evidently wanted the last word—and she had it.

But here is the best of the lot—from another Ohio man: "Sir—I want you to stop The Fruit-Grower, and the fruit is killed hear and the paper wont save it and oblige your truly." That is just the way it was written.

And all these names were taken from our list, their places being more than taken by new subscribers—the two Ohio men, for instance, giving way to a list of 100 new names sent by a member of The Family in the Buckeye state.

Do these letters make us feel bad? Yes, somewhat. They make us feel bad, to think there are some persons who cannot appreciate the position which a paper has to occupy. But all these letters are forgotten and we feel encouraged and strengthened when we receive a letter like this—and this is but a type of hundreds which reach our office:

"Inclosed find $1, for which please send me The Fruit-Grower for three years. I want to take the paper as long as you keep it up to its present high standard in its reading matter, as well as its advertisements. I quit taking one fruit paper because of its whisky advertisements. With three boys growing up, I cannot afford to allow any paper which advertises whisky on the reading table of my home."

And that letter is one of those which encourage us, and we forget those which may have troubled us for the moment. Isn't it worth more than the three quoted above?

Questions and Answers

Black-Hearted Trees. — Regarding C. N. M.'s trouble with apple trees, as described on page 170, April number, I would suggest that the trouble may have been caused by the trees being dug before maturity. Some nurserymen are in such a hurry in the fall to ship that they pull off the leaves by hand. If done too soon, injury results as described by the correspondent.—E. A. Riehl. Alton, Ill.

Seeds Wanted for Testing.—I beg the honor to write and ask if you will grant me a favor through the question column of your paper, of which I am proud to be a subscriber. I must say it is the very best fruit paper that I read, and during the last six years I have taken five different American papers, and The Fruit-Grower suits my requirements best. Now, sir, what I would like to ask you is this: As I am going in for planting a few acres of fruit and will also follow vegetable gardening, I would like to ask your nurserymen who advertise in The Fruit-Grower if any of them will generously send me a few good fruit, farm and garden seeds, including dewberry seed and such other kinds as they think will do well in this climate. Our climate is semi-tropical. I would like a few good strawberry seeds. Trusting, sir, that you will excuse me if I am asking too much, and hoping you will assist me in this as regards inserting a note in the paper, if you can do this for me, I shall be very thankful to you and if I get a few seeds from anyone I shall write and record my many thanks.—George Warnes, Mooloolah, Queensland, Australia.

W. A., Missouri.—When should I prune my peach trees? Some say in the fall, others in spring, and with this conflicting testimony my trees have not been pruned at all.

Most growers prefer to prune their peaches late in spring, just before sap starts or about the time of starting. By that time danger from winter-killing is usually past, and one can tell what fruit buds remain alive, as the number and distribution of fruit buds will have a bearing on the extent of the pruning. In the fall of 1900 the Michigan Experiment Station undertook some experiments to determine if there would be any injurious effects following pruning peach trees in the fall. There was no injury apparent in 1901, and yet when the trees were cut back in 1902 it was found that the wounds, from cutting back and thinning out branches, had dried out, and in some instances killed back insated of healing over, as they do if pruned in the spring, when the sap is flowing. The conclusion reached was that the best time to prune the peach is in the spring, just about the time the sap starts.

T. K. B., Des Moines, Iowa.—I am troubled with gophers in my orchard. How can I get rid of them?

A correspondent recently said that to get rid of gophers he takes small potatoes, and with a sharp, thin-bladed knife he cuts nearly through the center. This cut is opened and a pinch of strychnine inserted. Dig into the gophers' run and drop one or two potatoes in the hole, replacing the dirt to exclude air and light.

H. P. G., Hutchinson, Kan.—I have some large Ben Davis apple trees, planted in 1887, which do not bear. Last year they bloomed freely, but the freeze killed part of the blossims and most of the remainder dropped off. This year they are not blossoming as they should, few blooms appearing. I have never secured enough fruit from the trees to pay the taxes on the land. What can I do to induce fruitfulness? Will peeling some of the bark from the trees benefit them? If so, at what season should this be done? The trees are growing well, have been cultivated some, but very thoroughly; have been trimmed moderately, and were sprayed several times last year.

Perhaps the trees have been making so much wood growth, due to good soil and cultivation, they have not formed fruit buds. Try girdling the trees, removing a strip of bark, say two inches wide from around the trunk of the trees. Do this in June, taking care to not scrape off the gummy substance which will be found beneath the bark. This girdling will check the downward flow of sap and the excess of plant food will remain in the tops of the trees, and hasten the formation of fruit buds. Done at the season named, the wound will entirely heal over before fall.

J. S. E., Ft. Madison, Iowa.—How shall I destroy bugs and lice on my cucumber vines? I have trouble with them every year.

This is a hard proposition, but if the plants can be carried through until they are good size, they will withstand the attacks of these insects. Tobacco dust, air-slaked lime, land plaster, etc., are used to dust over the plants to repel the insects. Canteloupe growers watch carefully for the first appearance of the melon aphids, or plant lice, and pull up and burn infested plants. Spraying with Bordeaux mixture will keep some of the insects away. Once a plant has become infested, it is perhaps best to destroy it, and thus get rid of as many of the insects as possible, and remove the source of infection. Kerosene emulsion will surely kill the insects, but it is a hard matter to reach the insects on the under side of the leaf with this spray.

J. M. H., Durham, N. C.—I have planted quite a patch of blackberries and red and black raspberries, and will increase my planting as fast as I can propagate plants. I think I understand this process, as far as the blackberry and the red raspberry are concerned, but I lack information on the subject of the black raspberry. I know this plant is rooted from the tips, but I would like information on the following points: (1) In what month should the tips be turned down and buried? (2) Should the canes from which I make rootings be young ones or the older ones which have fruited, or will either do? (3) Can you make rootings from the tips of canes that have been previously pinched or cut back to prevent too long growth? (4) After a root is established, how long will it continue to send up shoots and bear fruit?

(1) The tips should be covered slightly with soil when the young canes begin to assume a leafless appearance near the end, this occurring about the middle of August in this climate. (2) The canes which tip are the young ones which have grown during the present season; these canes will make a vigorous growth, and when they reach a height of eighteen inches to two feet the tops should be pinched out, thus inducing a lateral growth at this height; these laterals will bend over to the ground and strike root, even without any help, but if a little soil is placed on the tip it will prevent blowing about by the

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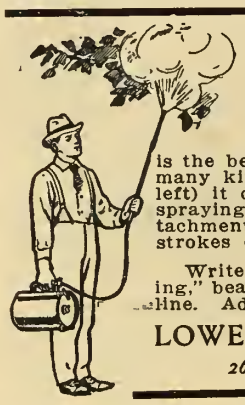

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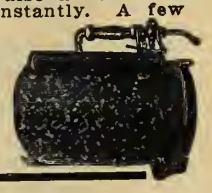

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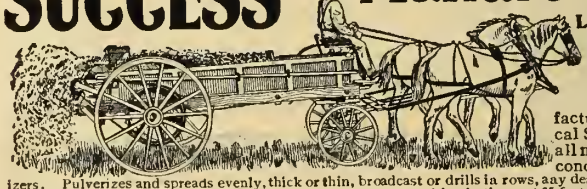

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wind. (3) This is answered in the foregoing; from canes which have been pinched back. (4) After fruiting season has passed, go over the plantation and cut out the old canes and burn them, leaving the new canes to furnish the bearing wood for next season.

C. E. H., Greencastle, Ind.—Give description of McIntosh and Ingram apples, as to hardiness, age of bearing and suitability for commercial orchards in Central Indiana.

McIntosh Red is a Canadian apple, hardy, of good size, red on yellow skin. Ingram is much like the old Janet, of which it is a seedling; redder, and at one time thought to be larger, but if trees are allowed to overbear, especially as they become older, the Ingram will run down in size like its parent. It is hardy wherever tested. As to the advisability of planting these varieties commercially, it will be best to consult the Indiana Experiment Station or the Indiana Horticultural Society, where information can be secured from those who have planted at least the McIntosh. The Ingram has done well in Southern Missouri, but has not been extensively tested.

J. A. C., Putnamville, Ind.—I have about sixty-five apple trees twelve years planted, which have borne fruit for several years, but we have never been able to save any of the apples. They rot on the tree, and they rot in the cellar. Well, they just rot anyway. Can nothing be done to stop this?

If is not possible to say just which of the rots attack your apples, but to spray with Bordeaux mixture is the remedy recommended. This spraying should be done early, and the young apples should be kept coated with the solution, to prevent the rot spores from getting a foothold. If the disease is bitter rot, then you should look for the cankered spots on the limbs, which have been found to be a source of infection in Illinois. Spraying for bitter rot need not begin so early in the season. We would recommend that a specimen of the decaying fruit be sent to the Experiment Station, Lafayette, Ind., and then the rot can be identified.

W. H. B., Socorro, N. M.—Will some one tell me how to kill out sweet clover? It is simply taking my orchard. It grows tremendous; has a very large root. Will salt injure fruit trees?

Answer by Prof. Whitten: Sweet clover may be killed out of an orchard by plowing it under and keeping the orchard in clean cultivation. If it is desired, however, to leave the orchard in sod, the sweet clover will not be especially injurious as an orchard sod crop, provided it is mowed frequently through the year and allowed to rot on the ground. In fact, there is perhaps no other crop, except red clover, with which the orchard could be seeded down that would be less injurious to the trees than will the sweet clover, provided it is mowed frequently.

A. H., Choctaw, O. T.—Please send me some sample copies of your paper. I want to get up a club. Please tell me something about the black currant with yellow bloom. What is the correct name of a vine which we locally call "balsam." Rich green foliage, yellow bloom, followed by round but pointed apples which pass them all shades of green, yellow and red, containing a large number of seeds about the size and shape of a watermelon seed.

Answer by Prof. Whitten: The black currant with the yellow flowers is probably the wild Missouri currant, which has some value on account of its fruit, but which is more largely planted as an ornamental shrub on account of the beauty of its yellow flowers as well as for their exquisite fragrance. If it is desired to grow it for fruits, it can be handled like any other currant. As an ornamental shrub, it is perfectly hardy and will grow as well as the lilac or any other ornamental shrub if planted out about the grounds. I do not know what vine is meant by the Balsam, but if the correspondent will send us a sample of its bloom and a twig of the vine by mail, we can no doubt tell him what it is.

C. T. P., Clair, Mo.—Will it change the firmness, time of ripening, size, shape or color of a pistilate strawberry to change the staminate berry which fertilizes it?

Answer by Prof. Whitten: The kind of strawberry used as a pollinator does not change the character of the pollinated variety which it fertilizes with respect to firmness, time of ripening or color. The pistilate variety fertilized will be the same regardless of variety used to pollinate it except that if a poor pollinator be used, so the pistilate sort is not perfectly pollinated, the latter will not be so finely developed, of course, as it would be provided a potent pollen bearer is used which will furnish an abundance of pollen.

C. P., Jefferson City, Mo.—On yearling apple grafts should one rub off the buds that appear? Which ones are removed, and how many should be left to grow when the trees have not reached the height at which I desire the heads to form, say three to three and a half feet high?

Answer by Prof. Whitten: In regard to yearling grafts, the buds should be rubbed off from the ground up, say two-thirds of the length of the stem. The under buds should be allowed to grow. The terminal will usually grow upward rapidly as a leader. When it reaches sufficient new growth to bear a good crop of leaves, the lateral buds, making side branches too low, should be kept back and kept short throughout the year so that they will not make big branches. In that way the leader will reach sufficient height so a new branch system can be formed at the correct height the succeeding season.

A. J. M., Lumberton, N. J.—I herewith submit a few questions to be answered by some practical fruit-grower through your columns: (1) Why does a peach tree require more pruning than an apple, both having same treatment otherwise? (2) Is not an apple tree just as susceptible to overbear as a peach? (3) What causes yellows in the peach trees? What causes propagation of yellows; is it not through bud pollen? (4) Is it not a fact if fruit trees were planted farther apart than generally would be less liable to fungus growth? (5) Please describe Waddel peach and time of ripening.

Answers by Prof. Whitten: (1) The peach tree requires more pruning than the apple tree because of its different habit of growth and in respect to the location where most of the fruit buds are formed. On the apple tree the fruit buds form on the old short growing spurs attached to the main limbs on the body of the tree. While the apple tree, the long whips of new growth which lengthen through the year do not contain fruit buds, on the peach tree the long whips of new growth contain most of the fruit buds and but very little fruit occurs on the short spur-like branches on the body of the tree. Therefore cutting back the apple too severely in the winter induces long whips of new growth, which will not produce fruit buds. Cutting back the peach trees in winter produces long whips which in the case of the peach produces fruit buds. (2) Apple trees are susceptible to over-bearing, but they are less liable to be injured by over-bearing, perhaps, than is the peach. In a very favorable season nearly all the buds on the peach may set fruit; on the apple tree only one flower in the center of the cluster sets fruit and probably on an average nine-tenths of the apple flowers fail to set fruit. The peach tree probably makes as many or more blossoms in proportion to its size than does the apple tree. Since very few of the peach flowers fail, unless the weather is unfavorable, and since most of the apple flowers fail to set fruit, the apple is less liable to be injured by over-bearing. (3) The cause of yellows on peach trees is not know. It is not known positively how yellows spreads from tree to tree. It is not supposed, however, to be disseminated by means of the pollen which is being carried from tree to tree in the spring. Artificial infection with yellows may be secured by budding or grafting with a bud or scion from an infected tree whether the branch from which the scion was taken show the yellows or not at the time. The tree which is budded or grafted will soon take yellows provided the bud or scion takes a growth. (4) If trees stand so close together as to entirely shade the ground, keeping out the sunlight and preventing the proper circulation of the air and proper drying out of the soil under the trees, the density of growth may favor fungous diseases. Close planting probably does not favor fungous growth, provided the surplus trees are cut out as soon as the permanent ones need the space.

M. M. R., Ray's Hill, Pa.—(1) Have heard that whitewashing will retard blooming in fruit trees. How is the mixture prepared, when and how applied? Please tell something of the results. (2) Would like to know something about the color, size, quality, season and productiveness of the "Missing Link" and the "Champion" apples and would they prove profitable in Pennsylvania? Where can I get "Dorset" pear trees? What pear is the longest keeper and please describe it.

Answers by Prof. Whitten: (1) Whitening peach trees in winter with lime whitewash tends to retard the blossoming of the trees provided the lime wash is put on thick and the trees are kept covered throughout the last half of the winter and early

(Continued on Page 15)

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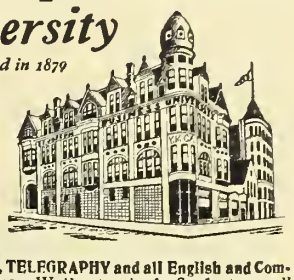

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Holsinger's Department

Fruit Prospects.

There seldom has been a better prospect for a fruit crop than that before us at this date, May 1. A stroli to the farm today has been very gratifying. Peaches of nearly ali varieties promise a good crop. The lightest blooming is upon the Elberta and Salway. Cherries, plums, pears, apples of nearly all varieties, are a mass of bloom. The season is so far advanced that we are almost sure of a crop. The small fruits, too, are generally in fine form. A phenomenal fruit crop seems assured. The growers should not only feel thankful, but he alert in caring for the crop. It will not do to neglect their opportunity; but be vigilant and use every means to secure the best results.

—

Propagating Roses.

My attention was called this morning to a new method of propagating roses that is not only simple, but very successfully accomplished in the open. The lady last fall took clippings of such roses as she wished to propagate and stuck them in the ground, over which she placed some half gallon glass jars, such as are used for canning fruit. Around these she packed the dirt about one-half the length of the jar. A board was placed on the north side of the jars, they being in a row. These roses are now in full leaf, good strong plants, and ready for transplanting. It struck me as novel, and as old jars can be used for the purpose, I think it so simple that it is worth a trial. Of those tested were teas, hybrids and climbers. I surely will try this method for propagating them, saving the old and useless jars for this purpose.

—

Bulbs.

The botanical department at Washington sent me some American-grown hyacinths and tulips, grown in the state of Washington, for trial and requesting a report on the same. I prepared the ground last fail with considerable care and planted the bulbs about November 10th. Some two weeks later I secured my Dutch bulbs, which I planted in the same plat of ground. I covered the whole plat with a coating of well-rotted manure.

Now for results. The Dutch hyacinth bulbs came up strong, making a magnificent show and have been in bloom for fully a week, while the American are just opening. Some of the latter have not shown up as yet. The Dutch hyacinths are fully twice as large in their bloom as the American. As to the tulips, I can see little difference in either time or bloom, save the American are of a commoner sort. I selected both the hyacinth and tulips with a view to color variety. The American bulbs I had nothing to do with their selection, planting all that were sent me.

I shall be very glad to learn that any section of our country is adapted to compete with the Dutch in this particular of bulb growing. From my experiment I must say the advantage is decidedly Dutch.

While on this subject I will say my old beds of hyacinths did themselves proud in the quantity of bloom they furnished this spring. They were fully ten days ahead of the new plants of which I have been writing. Their bloom was very large, but varieties were not so grand as the new. It pays to plant the selected stock. My beds of hyacinths have been much admired and I feel repaid for the outlay of expense and labor necessary to their development.

—

Necrology.

Dr. Ivan D. Heath, long a member of the Missouri Valley Horticultural Society, departed this life on the 13th day of April. It was a real pleasure to meet this genial gentleman at our monthly meetings. His was a most sunny disposition and while not extensively engaged in horticulture, yet he was always interested. Usually he came with seeds or bulbs which he delighted in bestowing to such as cared to receive them. In this he was a modern Johnny Appleseed.

The Doctor was a gentleman of fine education. His travels were extensive; mostly confined to Central and South America. He possessed a fund of information which was intensely interesting when he could be drawn out. His explorations of the Amazon from its source to its mouth was one of thrilling importance and if written would make a volume as interesting as any which has been written.

I have enjoyed his recitals of dangers encountered from the savages, the wild beasts and dangerous cataracts, which abound along or in the Bern and Amazon rivers. Many pleasant evening have been mine in hearing of his expeditions.

The Doctor too, had served his country during the late civil war; this was another bond of union between us. There possibly was no man for whom I had a higher regard than I had for Dr. Heath. As I passed through the cemetery his brother, Dr. Edwin Heath, pointed out to me the broken shaft of Dr. Root, who had been minister to Peru, and whom the Doctor accompanied as an attache. There is another "broken shaft." And while Dr. Health had no family save his brother, yet there remains a host of loving friends who miss and honor his loss. A few years and so it will be with us. May we leave as pure a record.

—

Plum Curculio.

A letter received from A. D. B., of Raymore, Mo., treats of his method to catch the curculio. His method would be all right, but is attended by too much labor. It is to bore a hole in the trunk and insert a bolt upon which to strike with a mallet, the curculio falling upon a cloth spread beneath the plum tree. He recommends cheese cloth as inexpensive.

Now, I simplify things by using the ball of my foot, striking two or three vigorous strokes upon the tree. This will not injure the tree in the least, and does away with bolts, maul, etc.

The plums promise a great crop and a little care will repay for looking after the "little Turk." All the injury is accomplished in about three weeks' time. The jarring of trees should be in the morning or evening. The insects take wing readily during the heat of the day.

FRANK HOLSINGER.

The Missouri Valley Meeting.

The April meeting of the society was fairly well attended, and besides the members there were a number of visitors present. Dr. J. C. Whitten and D. A. Robnett of Columbia, Mo., and Prof. C. H. Dutcher of Warrensburg, Mo., were present and took part in the discussion. The latter read a paper on his experience with dust spraying, which is presented herewith. The paper was discussed by the members present, and Dr. Whitten called attention to the bulletin which had been issued by the Missouri Experiment Station, on the subject of dry Bordeaux mixture, which was recently published in the Fruit-Grower. Dr. Whitten said that when Dr. Bird, author of the bulletin, began work on the subject, he had in view the securing of a powder or dust which would have the same chemical properties as the liquid Bordeaux. It had been found that the so-called dry Bordeaux mixture which had been made by slaking lime with a copper sulphate solution, was not in reality Bordeaux mixture at all, and had not the fungicidal value which the liquid preparation has. Therefore Dr. Bird's work was to get the dry powder so that this same chemical condition would be present. This was secured, as has been published in bulletin form, and which was reproduced in the Fruit-Grower.

But Dr. Whitten said that in actual practice it had been found that the method of preparing this dust was too slow. At the Missouri Experiment Station they had adopted the plan of making the dust just as is recommended by Dr. Bird, up to the time that the dust is to be sifted. Too long time was required for this sifting, and accordingly the mixture is spread out on a smooth floor, mixed with the air-slacked or ground lime, using a garden rake for this purpose, and then a garden roller is rolled over the mass, reducing the lumps to a powder. This avoids the sifting, which is too slow work, and results are just as good. With this change, the bulletin of Dr. Bird is all right.

Mrs. Asa Chandler, Mr. J. S. Butterfield, Major Holsinger and others discussed the question of what literature a horticulturist should read, and each recommended that a fruit-grower subscribe for the Western Fruit-Grower first, and then their selections varied. James M. Irvine of the Fruit-Grower was called upon, and told of his first visit to the Missouri Valley Society, seven years ago, at the April meeting. At that time he was asked to state the purposes of The Fruit-Grower, and now, after a lapse of seven years, he said the success of the paper is due to the fact that the publication has adhered to the policy of trying to print the best horticultural matter which can be obtained. The members of the Missouri Valley were among the first to show an appreciation of the paper, and have been helpful through the years.

The matter of packages for grapes, tomatoes, peaches, etc., was brought up ,and a resolution adopted, urging

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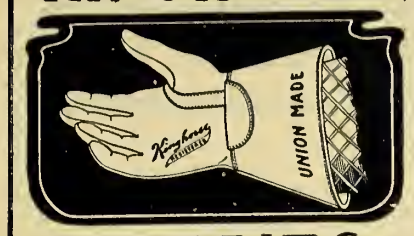

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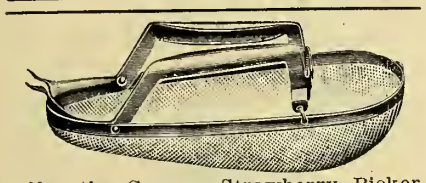

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growers to use the Climax basket, in preference to the split Diamond market basket, which has been used for so long on the Kansas City market.

Prospects for fruit were reported good, even peaches showing up remarkably well. All other fruits promise heavy crops.

L. A. Goodman called attention to the fact that the May meeting will be held at his home, 4000 Warwick boulevard, this being the first of the outdoor meetings. He urged the members to be on hand. J. M. I.

Spraying.

The importance of spraying can not be overestimated. A few fully realize this, and have agitated the subject much in the last ten years; yet many fruit-growers are not properly aroused to its importance. Why? Ever since the days of Patrick Henry—how much longer I know not—it has been natural for man to indulge in the illusions of hope. Indeed after so many years of agitation on this subject, the printing of so many papers in our reports, the publishing of so many articles in our journals, we are impressed with the fact that many of us are apt to shut our eyes against a painful truth, and listen to the song of some siren that tells us not this year—the bugs may all be gone next—not this time—you have seen as good apples and as good orchards that were never sprayed as those produced by your neighbors who have sprayed, and sprayed again, almost from the time the trees were set out.

Is this the part of wise men? Do you not know that that very spraying, that expenditure of some money and much muscle, if they used the liquid spray pump, fully accounts for your good orchard, and apples? Such men are simply parasites upon those engaged in a great and arduous struggle that every family in the land may have a reasonable supply of good and wholesome fruit upon their tables. You are disposed to be of the number of those who having eyes see not, and having ears hear not the things which so nearly concern our debilitated digestive organs, and a deranged and gorged condition of the liver,—much of which can be and should be prevented by a sufficient supply of well matured and properly cared for fruit.

Do you hope each year that this will be the last of the bugs? This is surely "indulging in illusions of hope." The enemy is upon us. In great numbers they are swarming round about us. We have fungi here and fungi there—and then more fungi. On this limb and upon that—a few here and more there; and this will continue as long as heat and moisture prevail upon the earth. Today the tree is smooth and bright and healthy, and the buds are swelling—but tomorrow, behold! the apple bud louse is sucking the very life out of the buds. And this he will continue to do unless you give him a liberal supply of kerosene emulsion, or dust him with ground lime and concentrated lye. Then there are other insects of the same nature. They come into the world a sucking—never get strong enough or dignified enough to eat or bite, but continue to suck their miserable lives away, as well as the life of the bud, leaf and limb upon which they feed.

But this is only the beginning. Budmoth, canker worm, codling moth and gouger are lurking in every secret place waiting their appointed time. It will soon be here, and if we do not fight, 'the next gale that sweeps from the north," and from the south, east and west as well, will bring to our ears at least an imaginary chirrup, hum and whir of millions of these pestiferous enemies, besides many that come in the night as quietly and stealthily as a Japanese army or Togo's gunboat flotilla.

"We must spray! I repeat it, sir, we must spray! We have no election. If we were base enough to desire it, it is now too late to retire from the contest. The war is actually begun, and it is vain to extenuate the matter. We may cry ease, ease; but there is no ease; and if we stand here idle, our fruit will be ruined, and we shall be swept from the woods, for such and such only will our orchards soon become."

Gentlemen, if a bird law is a good thing, why not a spray law that would compel every raiser of fruit to spray his trees? Many would object, of course, but laws should be made to secure the greatest good to the greatest number. The objectors know they do fight insects on their hogs and chickens, calves, colts and kids, and if their neighbors do not help at least in this last case they get mad, and take their children out of school.

But upon this enough for the present. We naturally ask how, with what, and when shall we spray? The method and material used are so dependent they may be discussed together. There are two methods. The old or liquid spray, the new or dust spray. In method these are quite different; in material, much alike.

The old uses water as a conveyor, which has no value other than to make a heavy load, and on a warm, dry day facilitate fungous growth. The new uses lime for a conveyor, which is light, a well known fertilizer, very useful on all sandy land, and to no mean degree both a fungicide and an insecticide.

For a fungicide the old uses copper sulphate, either in solution or as a liquid bordeaux. Only in a simple solution in water can they get copper sulphate on their trees, for the moment they add lime to neutralize the free acid of the sulphate they form several inert compounds, and only one that has any fungicidal or insecticidal property. This is also true of the new method, if they dry slack their lime with the sulphate solution, or if they use the dry dust bordeaux prepared by Dr. Bird. I do not know how this is with Leggett's Bordeaux, for I do not know how it is made. When last December I said: "Only when we can grind dry lime and bluestone together can we get a good bordeaux, that is apply blue-stone, sulphate or copper, to our trees," I was wrong on two counts. I have stated above that in a simple aqueous solution, the liquid spray men do put sulphate of copper on their trees, and in the second place, later experiments show that in the grinding of lime and copper sulphate together, the water of crystallization is set free and the same inert compounds are made. The latest method is to grind the lime and sulphate separately and mix them by sifting through a very fine seive. When this mixture is blown upon the trees, powdered copper sulphate is placed directly upon the fungus, there to slowly but surely do its work. If this proves to be as effective as is hoped it will be better than the water solution, for it is not at all limited in its application, while copper sulphate solution can be used only before the buds open.

As an insecticide for all eating insects both schools use paris green or some other arsenical poison. The one adds it to their liquid bordeaux, the other to their powdered lime and sulphate. Each can add concentrated lye if deemed advantageous, while only the new school can add sulphate. Both agree in spraying for fungi throughout the season, and this is undoubtedly right.

As an insecticide for sucking insects the old school uses kerosene emulsion; the new, lime and a double strength of concentrated lye. Both have a caustic—the one, soap—the other, lime and lye. But the kerosene in the emulsion, a most valuable ingredient for the destruction of sucking insects, can be used only by the old school. The greater ease, however, with which the lime and lye can be applied, and the cheapness of the dust, may fully compensate for the loss of the kerosene.

As a fungicide that will not stain the fruit, the old school uses ammoniacal copper carbonate solution, instead of bordeaux; the new, is not afraid of staining anything. Their formulae are simple, and the mixtures easily made. For fungous diseases they use ground lime, ground copper sulphate mixed with lime, called "Sal Bordeaux" or "Dry Bordeaux Mixture," sulphur and concentrated lye, if deemed necessary. The lye is hardly needed if the lime is the best, fresh and well burnt. And the sulphur is hardly worth the cost and trouble as a fungicide. For insects that eat or bite the leaf they simply add paris green to the fungicide. For plant lice and scale insects, they add a double portion of concentrated lye. In these formulae anybody's bordeaux can be substituted and any duster on the market may be used.

As to the when to spray, I need say but little. Remember that the battle is not to the strong alone; it is to the vigilant, the active. Watch your trees. Examine them early and often. As soon as an injurious insect appears apply the proper remedy thoroughly and well. Use fungicides all the time. If you use liquid, make a fine, yes, a very fine spray, and quit before the tree drips. If you use the dry spray, enough material to make sufficient dust to be readily seen should be used. More is useless and a waste. The younger the larvae the easier it is to kill them. Spray for canker worm as soon as the eggs are hatched. Give another dose the next day and another the third. Spray for codling moth just before the bloom opens, and again as soon as the petals have fallen, but not while in bloom. Repeat in ten days, and then every two weeks through July and August to catch the second crop that injures our winter varieties. In conclusion I commend you to Prof. Bailey's wise words: "The Trinity of Successful Orcharding is Cultivation, Fertilization and Spraying." C. H. DUTCHER.

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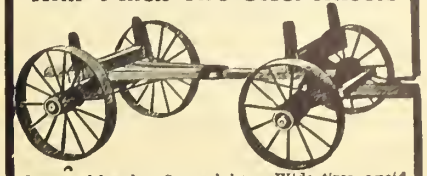

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Handling Strawberry Pickers.

The time for picking strawberries is at hand, hence it is a good plan to be prepared by having your boxes and crates made up, your packing houses in readiness and last but not least, your pickers engaged. The handling of pickers is one of the most important items, perhaps, and one which often causes serious trouble and especially if they are a minus quantity when your berries are ready to be picked.

I have found it pays to have an extra picker or two for one can never tell exactly how many pickers can handle a patch, the conditions varying so much. A combination of not enough sunlight and plenty of moisture and you will have to look for a few extra pickers, or it is well to have it understood with people who wish to pick to telephone every morning and you are then in a position to know better about how many you are going to want.

The Hoyt Plant and Seed Company grounds are located just between St. Paul and Minneapolis, Minnesota, also one and one-half miles from two suburbs which furnish a large share of our pickers. They come on street cars, on bicycles, in buggies and walked, but as a rule there is no scarcity only on rainy days, etc., except on the Fourth of July, which we always try to prepare for; also Sundays, but we try never to pick on Sundays. Being so near the markets we have an extra crew Saturday mornings and before the Fourth of July, so as to market the berries in the afternoon, but the berries are always engaged ahead by phone by the leading grocers, which we supply in the twin cities. The pickers work until from 2:30 to 3 p. m. Saturdays, when the berries are hurried to the stores and sold that evening as they are fresh from the vines and sell at sight at a high price, often retailing at 20 and 22 cents.

We use new boxes, which we make on our box machines, and label them so that people know whose berries they are eating and if they are good they will know where to get another box. There was a cut of a labeled crate of our berries in a previous issue of the Fruit-Grower, but it lacked the color of the berries to bring out the contrast, the labels bringing them out in fine shape. We use a fine paper label over box. Our pickers sort the berries as they are picked and when brought in the No. 2's are put in separate crates and not labeled, as we grade our berries as No. 1's and 2's so that the grocers know what to expect, the No. 2's being a lower grade and, of course, do not bring so high a price.

Our pickers are furnished with six quart carriers and each picker has a number and labels every box to correspond before he or she starts out to pick, so that in case there is any crooked work or poor picking it is very easy to trace it and will make the pickers more careful.

Pickers can and will do good work if they know they cannot cheat, but the majority will stand watching a little occasionally. We have pickers cards which has the picker's number on it and when filled they are credited up on our books and given a new card and held responsible for same.

There are two sides to the ticket, one for 6 quart punches and one for 1 quart, so that it does not require so much punching. The berries are inspected when they are brought up, labeled and put into a large cooling cellar until they are ready for market. It requires some one to see that the pickers do clean picking and careful work and a small fine is very effective to bring the small boys and girls to time if you have to have them, although we have had some very good ones who learned right and are on deck every year and make money picking. A prize in the way of berries will stimulate the pickers to do good work and will often pay as it gives them something to think about besides the whistle. We pay by the quart for picking at one cent per quart and 1¼ cents for steady pickers, and toward the end of the season we pay more according to the picking. One woman during the past summer picked as high as 130 quarts of strawberries per day, besides doing her own housework, but of course she ilved only a short distance and went home to prepare dinner at noon and at 5 p. m. to get supper ready.

There is a great difference in strawberries and to pick the large luscious berries is a pleasure and the pickers are always anxious and waiting for the season to open. It requires patience and tact to handle a crowd of pickers, because especially on hot days they enjoy sitting in the shade and eating berries in preference to picking them, but if the berries are to be picked you have to keep them at it and still keep them in good humor. It was harder for me at first to have a few pickers than it is now to have nearly a hundred as there was no one to look after the few and they all picked in their own crates, while now they simply fill their boxes full and we do the rest.

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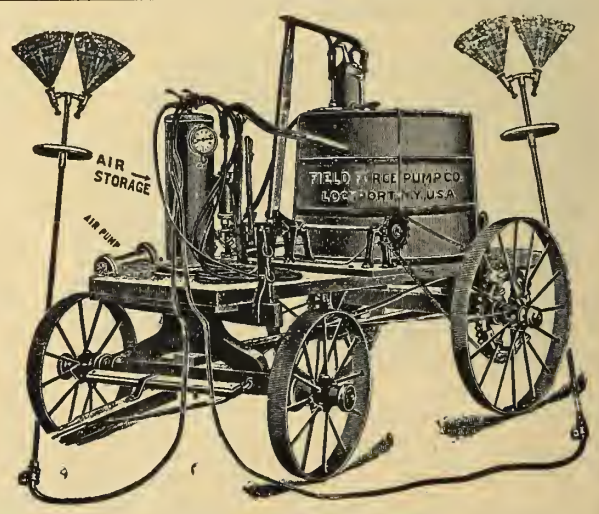

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Questions and Answers

(Continued from Page 11)

spring. We slack the lime with just water enough to keep it from burning dry and to leave it as a thick paste. Then when it is cold, thin it with water until it will pass through the nozzle of a spray pump. In order to make it stick better, we add one gallon of skimmed milk and a half pound of dissolved glue to each ten gallons. We apply it usually in January and repeat the application often enough to keep the trees thoroughly white until spring. In this section of the country the abundant winter rains are liable to take the wash off; it is, however, in some sections of the country where winter rains are not prevalent, proving efficacious. If one pound of copper sulphate to each ten gallons of the wash is used, this wash will prevent leaf curl of the peach. (2) I am not sufficiently acquainted with the "Missing Link" apple and the Dorset pear to answer the question concerning them. I have seen Champion apple and think highly of it, but have not seen it sufficiently grown in commercial orchards, especially in the east, to advise a man with regard to its commercial planting in that state. Unless you secure a better answer to this question, I would be willing to have published the statement that I consider the Champion one of our very promising comparatively new varieties of apple, but I have not seen it grown sufficiently in large commercial orchards in the east to predict how it will prove commercially in Pennsylvania, on account of the fact that large commercial plantings of the variety are of comparatively recent planting and are not, so far as I know, in full bearing yet.

—

T. S. R., Newry, S. C.—I want to plant some cherry seed of our common black variety; please state how to care for the seed and at what time to plant them. I planted some last June while the cherries were ripe, also saved some seed and planted in December, but not a one of either planting came up. The seed planted in December were very dry, which may account for them not germinating. I also have a nice lot of peach seedlings up that I want to bud with some good local kinds; please state the best method and time for this work.

Answer by Prof. Whitten: The best way to care for cherry seeds is to wash them out of the fruit when it is fully ripe, dry them slightly for an hour or so in the sun so that they will not mould, and then place them in a box of slightly moist sand, mixed throughout with the sand, with drainage holes in the bottom, so they will not get too wet. This box of sand should be set on the north side of a building and kept just sligtly moist throughout the autumn and succeeding winter and never allowed to get excessively wet. The freezing of the seeds in this sand will cause them to crack their shells so that they will be ready to grow. They should be planted out in early spring in the ground, sand and all, before they begin to sprout much. If the cherry seeds get excessively dry they sometimes lie out two winters and then come up the second spring. The best time to bud peaches is during the last half of August or the first half of September in this latitude. Bailey's Nursery Book gives more complete information for the work of doing budding than could be given in a letter.

—

J. A. A., Council Bluffs, Iowa.—Inclosed you will find a piece of grape cane. It has eleven pin hole perforations. I have found them with a small eggs in each pin hole, also have found hatched out in the form of a small white beetle. I also find what seems to be the full grown beetle, which is black, rather slender, about 1-16th of an inch long and I usually find them eating out the center of the early grape bud. This is all I know of its habits. What is it? Is it liable to become very destructive? What is its history, remedies and preventatives. (2) Has there been any remedy or preventative discovered for what is known in this section as the cherry leaf blight? If so, what is it?

Answer by Prof. Stedman: (1) The pin-hole punctures in the grape cane were made by the female of the Snowy Tree Cricket, in depositing her eggs in the same. These insects when hatched, feed upon plant lice and do no damage until the females come to deposit eggs, which they usually do in the canes of blackberries and raspberries. The only method of fighting this insect is to cut out the canes containing the eggs and burn them. These insects do not cause the trouble you mention in the bud. The eating into the bud must be caused by some other insect. (2) The remedy for the cherry-leaf spot is to spray with Bordeaux mixture. The Iowa Experiment Station has issued an excellent bulletin on this subject. Send to Director Agricultural Experiment Station, Ames, Iowa, for a copy.

Z. S. Greenwood, Ark.—Please tell me what is killing my peach trees. They die just below the top of the ground. The bark and wood turn black for a space of 3 or 4 inches and above and below seems to be all right. These trees were set last spring, made a very good growth, and the only way you can detect the dead ones is by the color of the leaves, which are turning yellow. These trees are set in the ground to the graft, on a hillside with a gentle slope to the west.

Answer by Prof. Stedman: It may be possible that the peach tree borers are girdling the trees just at the ground and killing them, but if this is the case, you should be able to detect the gummy exudations which always flow from borer wounds. If the trees are small ones, it may be possible that another borer known as Priones may be working in the tap root, but these insects do not kill large trees.

W. C., St. Joseph, Mo.—I have an asparagus bed which is in its third year. I am cutting the asparagus now, but find that some of the shoots which come up are too small and slender to be available. Now, should these slender shoots be allowed to grow, or should I cut them off and throw them away?

Answer by Major Holsinger: It is my custom to cut all the grass as long as I cut any. When grass is crowded or if not properly fertilized, they sometimes send up many shoots that are small; again, if too near the surface they are thus inclined. I usually bunch these separately; some like them and they sell about the same in our market, the Italians usually buying them. To ship would be different and might cause a loss. Sometimes the small shoots are from new plants that have taken root. Care should be taken that young plants are destroyed, otherwise they will cause your old plants to smother.

Strawberries in Kansas.

Mr. Justus A. Davis of Rome, Kan., send us an account of his method of growing strawberries in a section which is thought to be unfavorable for strawberries. Our readers will notice that Mr. Davis' plan contemplates fall preparation of soil, and he has found his method a success. We hope the article will help our readers, as we have no doubt it will. It will be noticed that he uses sulphate of potash in connection with barnyard manure. We would like to know how many Fruit-Grower readers follow the practice of using commercial fertilizers. We know an increasing number are doing this, and we would like to hear from them. Mr. Davis' article follows:

I am preparing three acres of ground for strawberries and thought it might be interesting to some of the readers of the Western Fruit-Grower to know how we in this part of Kansas have to do in order to grow good berries. My ground is upland, sandy loam. Last fall I spread a good coat of stable manure over the land to be planted and plowed it under; then in October I harrowed the ground smooth, then put on another coating of manure. I took a disk harrow and cut the manure in until it was thoroughly mixed with the soil. I go over it every few days with a five-tooth cultivator, and will continue to do so until planting time, unless prevented by weather, which here is from the 15th of March to the 15th of April. Then I smooth the ground as smooth as I can get it with a drag. Then I take a wheel marker, the wheels of which are on hinges so they drop down in low places and continue the mark unbroken; the wheels are 12 inches high and 1 inch wide and mark four rows at a time. I will plant the early kinds four feet apart each way; the late kinds four feet one way and two feet the other.

Now, I will tell you how I get what I consider the best plants. Every spring I send to R. M. Kellogg at Three Rivers, Mich., for a few plants of the kinds I think do best here, and set them in a plot of ground I have expressly prepared. It is situated in my vegetable garden where I have a pond. The pond is above the level of the ground in the garden, the land sloping both ways from the pond so when I think the plants need water I take a two-inch pipe bent so as to form a syphon and run the water between the rows of plants until the ground is thoroughly soaked, and in this way I have never failed to get good plants. The next is to dig the plants so as not to break the crown or roots. I am very careful to clean all the straw and old leaves off the row to be dug up, then take a six-tined fork and raise the plants carefully. Have a wide, shallow box or basket to covered with a wet cloth; don't let the wind strike the roots of the plants and we do not take up too many at a time.

We now have the ground and plants ready to set. Now I take a board 1x4 in. 4 feet long, sharpen one end in the shape of a paddle, press this in the ground where the plant is to be set. You will have to regulate the depth of hole by the length of the roots of plants; the hole will be 1 inch wide and 4 inches long; take the plant by the crown and give it a quick jerk or shake to separate the roots, insert the roots in hole, holding the crown between the thumb and finger so that when your hand is on the ground the crown will be just even with the surface of the ground; take your other hand and press the soil in on the roots. When you get to the end of the row turn and walk back, stepping on each side of every plant, making the ground very firm all around the plant, so that if you take hold of the plant it will pull apart before it will pull out of the ground, and if the crown or bud is even with the surface the plant is well set.

Now comes the most important part here in Kansas; that is, cultivation. I have a cultivator with shovels only 1 inch wide and just as soon as the plants are set I cultivate not to exceed two inches deep. I am particular to cultivate after every rain as soon as the ground will do. This is done to hold the moisture. When the plants begin to run I space them carefully, not allowing the rows to get over a foot wide and the plants to get closer than 6 or 8 inches. Keep the space between the plants loose with a sharp pointed hoe. I continue to cultivate until the ground is frozen, then mulch with clean wheat straw 2 or 3 inches deep.

I spray my propagating bed every two weeks in the summer to keep the rust off. Don't have to spray fruiting field after having set plants free from rust. The worst time on strawberry plants here is in July, August, and the first half of September; it is nearly always dry and hot here, and if the plants are thick or the ground gets parched, the plants will die.

By following the method described I have never failed to get a good paying crop in eight years. Last year I sold berries in Wellington, our county seat, the price ranging from $2.50 to $3.50 a crate, while the berries shipped in sold at $1.50 to $2.00 a crate. I don't know of a strawberry plant within eight miles of me. The people think it time and money thrown away to try to raise strawberries. I know it is up hill work and it takes nerve to put so much work and expense on so small a space of ground, but, as I said before, I have had paying crops every year since I began following in this way.

I use, in connection with the stable manure, 100 pounds of sulphate of potash to the acre, sown broadcast in the fall. One thing more; I am very careful not to stir the ground when it is too wet. Wait until it will crumble nicely, then keep a dust mulch of about two inches on top; this will keep the moisture right there.

I can say I think the January and February numbers of the Western Fruit-Grower are the best papers I ever read of its kind and the best kind I ever read. Will send in a list of subscribers soon.

Rome, Kan. JUSTUS A. DAVIS.

The peach crop in Southern Missouri is reported all right as far up the Memphis Railway as Olden, where the crop promises to be a good one. This is farther up than the crop of 1902 when Koshkonong was almost the northern limit of the crop.

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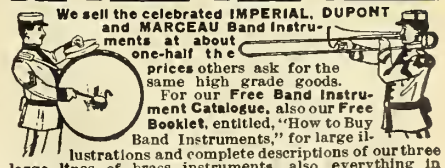

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Gardening Department

Melons.

Melons should have good rich soil, but not too low and wet. It must be what is known as "warm land." That is, it must be loose and well drained so it will warm up easily in the spring. Melons are a tropical plant and while they can stand any amount of heat and lots of drouth they can not stand wet, cold weather.

The rows should be marked off about six feet apart and the seed can be planted either in hills or drills. I prefer to drill it in thick and then later thin out to a vine every two feet.

The seed should not be planted till settled warm weather, which in this climate usually means the last half of May. While you may get melons up earlier, the chances are that the seed will rot in the ground and if they do come up, they will have a fight for life. If the ground is cold and wet before they come up, the seed will surely rot, no matter how good.

The striped bugs will appear as soon as the first plants are through the ground and should be driven away or they will kill the vines in a day or two. I use tobacco dust sprinkled on liberally.

Keep the ground stirred around the little plants and keep the middles clean with the cultivator. Keep up the cultivating and hoeing till the vines get across the rows, after which it is best to leave them alone.

If you want big melons, keep all but two or three on each vine picked off as fast as they appear.

If extra early melons are wanted, it is a good plan to make a lot of little boxes open at the bottom and with a pane of glass in the top. One of these can be placed over each hill and will force a rapid growth.

By the time the melons are big enough to touch the glass, the weather will be warm enough that the boxes can be taken off.

A melon vine can be fed by sinking a can, a tin one, with holes in the bottom, near the root of the vine and filling it every day with liquid manure. The holes in the bottom of the can let the liquid soak in around the roots where it is needed.

As to varieties of melons, I am like the Mormon, I "love 'em all." I think every year that I will cut out some of the varieties as the list gets so long, but every one has some redeeming feature that makes it hard to do without. The truth is that almost any variety of watermelon is good if it is well grown and you are good and hungry.

For early I grow mostly Ice Cream and Fordhook. For main crop Kleckly is said to be fine, but I have never grown it yet. Will have a patch of them this year.

Celery in the Corn Belt.

Celery can be grown here in the corn belt as easily as it can at Kalamazoo, if you take a little pains with it and give it the right soil. You can grow celery that for flavor, size and appearance will beat any that is shipped in.

The plants can be started in a box in the house, or in a hot bed. If you are in a hurry for them they can be started in a bed in the open ground. The best way is to have some in a hotbed and some coming on out doors, too, so that you can have two sizes of plants and a succession of plantings.

As the seed is very slow to sprout, the ground should be kept covered with a cloth or old carpet until the seeds sprout, or the ground will dry out too much. After the little plants appear, keep them well weeded and if too thick thin them out. It is well to transplant them when an inch high or so and give them more room. When they are three or four inches high, they can be set in a row where they are to stand. Pick the best ground you have, rich and moist, and work it up fine and mellow. Set the plants like you would any other small plant and tend thoroughly. Set about four inches apart in rows four feet apart. This gives plenty of room to get dirt for banking up.

Keep the soil well stirred around the plants and keep them growing lively. When they are about ten inches high, begin to bank up the dirt. Hold the leaves together with one hand and pull up the dirt around them with the other. As the plants grow up taller pull up more dirt, leaving the tops of the leaves exposed all the time. If the celery is strong growing, you can get a ridge nearly two feet high and the celery stalks will be long, white and tender.

If you do not care to bank with dirt you can set up a board each side of the row and drive stakes to hold them in place. A foot wide board will bleach the stalks that length and they will be easier got at than in the dirt. It is doubtful, however, if they are as tender. In the celery growing regions the boards are used almost entirely now, as they are handier than the dirt and the celery is easier cleaned.

Celery can be stored for winter by taking it up roots and all and bedding it in on the cellar floor in upright position with dirt around the roots.

There are several good varieties, but my choice would be the Golden Self Blanching. It is good size, easily bleached, and of finest quality. The White Plume is smaller and earlier and is very easily bleached. The Giant Pascal is the largest of all but is rather coarse and takes careful work in bleaching. It is, however, a good keeper and is on that account a good sort to put away for winter. It is too late now to start plants for this year's crop, but it is not too late to set the plants if you can get them somewhere. They can be set any time up to the first of July. Last year I lost all my plants by high water and I sent off for my plants. Although they were several days on the road, they did fine and all grew.

Notes From Seedsman's Trial Ground.

It seems like spring is really here at last. The plums and peaches are in bloom and even the strawberries show an occasional blossom. It is the latest spring we have had for a long time. We never missed before having asparagus to sell in April and we have lots of times had radishes, out door grown, to sell in April. This year we had the first mess of asparagus on May-day and radishes are just peeping through the ground in a scared sort of way. Alaska peas are just coming up. Well, we have the satisfaction of knowing that all are in the same fix and no one is getting ahead of us.

I have taken an old strawberry bed for the corn test again this year. It has been mulched with manure and is good and rich. It was plowed with three horses, good and deep. Then disked and harrowed. As the ground is so cold I will let it lay now till the middle of May and then work it over again good with the disk and harrow, then plant it. As I have plenty of seed and want to be sure of a stand, I will plant thick and then thin out later to two stalks in a hill. That is what makes the big ears and big yields. Two stalks will make as much corn as four. Try it if you don't believe it. The new test patch is right alongside of the last year's one and I will run the plats of corn right across both. That will give me a chance to see whether old ground is as good as new if handled the same way. I don't think it will be.

I will plant one extra good ear of each variety of corn, and I have about a hundred of them laid up ready to try. Some times it is the same variety from different localities to see if the climate affects them any. By fall I expect to know more about some points in corn growing than I do now. Some say that corn can't stand to be moved very far from its place of growth. That it has to be acclimated before it will do well. Now that is a mistake, I believe. I had corn last year from Long Island seed that was better than the sample ear it was grown from. Same way with corn from Northern Michigan and from Kansas. In every case the corn I grew was better than the ear I had for seed. This year I have secured corn from nearly every country in the world and some of it has traveled 10,000 miles. If there is anything in the theory of harm in moving it I will soon find it out.

Northern Iowa is not supposed to be a corn country and especially the last two years, but today I got a sample ear from a customer at Mason City, way up by the Minnesota line, that is equal to the best grown here in this corn paradise. The ear is about 11 inches long, welghs a good big 16 ounces, and is a beauty of an ear in every way. He says he has been growing this corn for eight years. Now, if he can grow that kind of corn there, why can't it be grown all over Northern Iowa the same way. Lots of men in that part of the state are content with corn about the size of popcorn, thinking they cannot grow big corn. Such corn as that would be worth a

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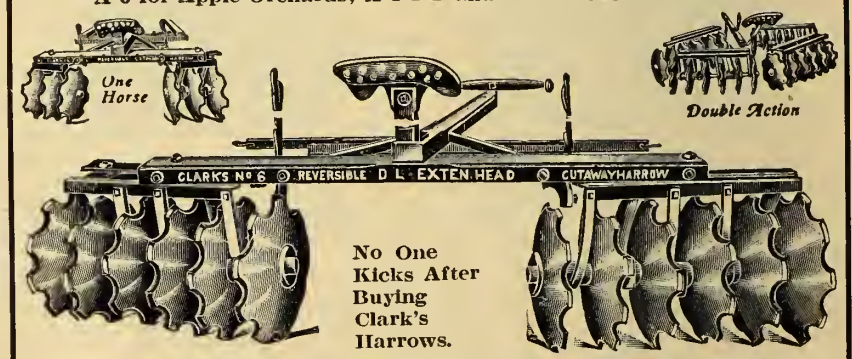

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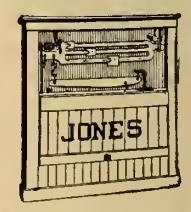

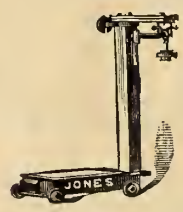

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million dollars a year to the north half of Iowa.

This matter of the study of corn is fascinating to me. I have found just one ear this winter (out of 20,000 of seed corn) that I consider perfect in every way. It is a beauty and I keep it under lock and key. I propose to make it the progenitor of a new strain of corn. Of course, it will mean a few years of waiting, but if by patient work I can get corn that will come half of it like that ear, I will feel repaid. I figure that with its 1,000 grains I can get about 10 bushel of seed. From this I will sort out about a bushel of the best ears and from that I can grow several hundred bushels of mighty fine seed. Worth trying, isn't it?

A customer of mine in the south writes that they plant the corn a grain in a place every three feet. Now, here it is 3 to 5 grains to every hill. I wonder what makes the difference? Would we be better to plant thinner? Would they be better to plant thicker? I twould be worth trying to see.

Every spring when the hyacinths are in bloom I resolve that in the fall I will set out more of them, but in the rush of getting ready for winter I generally forget to get the bulbs set out till it is too late to attend to it. The hyacinths and tulips have been a mass of bloom again this spring and some that have been out for five years and in bluegrass sod at that, are still coming up bravely and blooming happy as ever. You may rest assured that in October this fall I'll set about a bushel of them, if I don't neglect it again.

I can make partial amends, however, by setting some gladiolus now and plenty of them. I am going to put them in hit and miss in odd corners, for they will grow anywhere. They can be set out any time up to the first of June and will make a fine show till frost. Same way with dahlias. They can be set out any time and in any soil that you can plant potatoes. Plant them about the same way. It is not too late now to get some out and they will be a great source of happiness in September and October, after most other flowers are gone.

I have discovered one thing of importance about asparagus. This idea of planting it very deep as advised in the eastern books on gardening, is all bosh. My last patch was set out almost on top of the ground last spring. It is up fine this spring, earlier and bigger than any other I have. Another patch that is where it was overflowed and dirt washed on so it is deeper, has not shown a stalk yet. Set the plants shallow in good soil and you will have a good crop.

HENRY FIELD.

Shenandoah, Iowa.

Celery-Growing Made Easy.

In connection with the article on celery growing in Mr. Field's department, we present herewith a paper read by Mr. E. J. Holman of Leavenworth, Kan., before the last meeting of the Kansas State Horticultural Society. Mr. Holman's plan avoids some of the objections which have been raised against farmers growing their own celery, and it will interest everyone who appreciates this garden crop which is too often neglected. Mr. Holman's paper follows:

All rural and suburban people may and should have celery. The rich regard and require it as a part of their regular menu; but many who esteem it highly use it only as an occasional or expensive luxury. The object of this address is to try and show the latter class how they may grow it so easily and plentifully as to make it a common luxury.

The old method of trenching, hilling, watering, blanching, digging, washing, and cleaning may to a great extent, if not entirely, be overcome by the use of veneer tree-protectors. These cost from one to two-thirds of a cent, and cared for, will do service for many years. But let us go to the beginning, a tiny seed. The earlier varieties as White Plume and Golden Self Blanching may be sown out of doors in early spring, but the larger and later-growing varieties, like Giant Paschal, and Evans' Triumph, should be planted in March in a box or hot-bed and in all cases very lightly covered, the soil moistened and shaded until the seeds come up, requiring from fifteen to forty days for germination. Sown even thickly they may stand until they are transplanted in the row to grow until gathered for the table.

Celery, like any other vegetable, requires rich soil for its best development, is a great feeder and will fill the soil with its fine roots for several feet. If you have plenty of ground, set it in rows or double rows or triple rows, eight or ten inches apart. Cultivate with horse and hand and keep clean as you would anything else, But we will suppose you have a small piece of ground and can only devote, say, the space of one tree about ten or twelve feet square. It would be an easy matter to fertilize the soil on a twelve-foot square bed with old, fine compost from the cow-yard or stable, if needed. With this plot deeply worked, plant on each side, six rows eight inches apart, the plants eight inches apart in the row, leaving an alley of four feet between; here you will have fifteen dozen plants; and if well grown, two plants will suffice the ordinary family for a meal, and as you have one hundred and eighty, you have provided for ninety dinners, or celery for three months.

We said we could take the plants from the seed-bed though sown thickly, but we must say further that it is a great advantage to any of our annual vegetable plants, celery especially, to take the little plants an inch high and transplant an inch or so apart, thus producing a stronger and more uniform set of plants. However, whether raised or purchased, set out any time in May, June, or July, and as said, giving the proper hand or horse-cultivation, or both as required, by the middle of July or August the plants will be strong and making rapid growth, but a spreading over the ground growth. Ordinarily now commences the laborious task of hilling or banking, but we avoid it by taking our veneers, having dampened and rolled them, they form a closed hollow circle about three inches in diameter. This should be done some time before using that they may dry or set and retain their shape. We now take and open the veneer, encircle the plant nicely, the veneer springing closed, all light is excluded from the plant and the system of blanching is commenced.

We give a twist, pushing the circular box in the soil one-half inch or about that. Go to the next plant, repeat, and in speedy, light work, the celery plants are soon boxed. These boxes are eight to eleven inches high and the celery tops will be above the top of the boxes if it has made ordinary growth.

In further cultivation, the soil may be worked in and around these boxes as much as one desires. We believe two or three inches at least is an advantage as it is a cultivation that mulches and retains moisture without disturbing the roots that fill the ground to the surface. And now in August, September, October, long before the Thanksgiving dinner that gives so many their first taste of celery for the season, you may remove the box, cut from the root as easy as cutting a cabbage, and a prettier specimen of celery will delight the sight than usually is found in our markets. Whenever you want an eat of celery, it is easier than digging potatoes. This may continue until our earlier frosts when we get ice, which was near December this year. It will then be necessary to dig with a cluster of earth about the roots and remove to the cellar or trench or cover for protection against the colder weather. The later and larger varieties will now be at their best and may have grown a foot or more above the boxes.

One great faulty impression prevails that it is impossible to grow celery without an immense supply of artificial watering. There have been seasons so dry that celer ywould have failed without watering, and there is no question but that celery likes water and plenty of it. The last two years have furnished a plenty of rain and so may we hope that they will continue. But let us suppose that we will encounter a dry period in some season. Isn't it richly worth the labor of supplying water at such time if by it we provide ourselves months of luxury?

In conclusion, we say, try growing celery. We believe you will succeed in the future and class it with the essential foods.

Celery for Home Use.

The easiest celery raised and cared for is one of the dwarf and self-blanching varieties, but the Giant Pascal is much superior in quality. If you raise your own plants, sow the seed in drills in rich earth in a well protected place as early as you can pulverize the ground. A cold frame is good; a hot bed unnecessary. Shade

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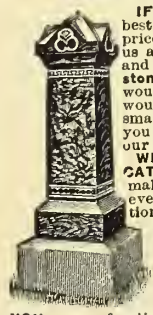

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the young plants, if sun is hot, for a week or more. Do not let the ground dry out.

When plants are well rooted transplant to a row or in a bed, setting plants two inches apart. Keep weeds out, but otherwise cultivate as little as possible. Water when necessary. If plants grow too rapidly and become spindling, cut the tops off once or twice. Here let the plants grow till first or second week of July. They will be stocky, have good roots, and are ready for the celery row. When garden is small you can untilize the space between your sweet corn rows. The corn will furnish the needed shade. You will have already somewhat of a ditch between the rows of corn, but the best earth is on the ridges supporting the corn. With spading fork dig the ditch 8 or 10 inches deeper, throwing the earth on the ridges between the hills of corn. Now wheel in enough well rotted manure to nearly fill the ditch, fork part of the earth back on the manure, mix well together, and firm by tramping. Clip surplus leaves and dangling roots from plants as you do strawberry plants, and set out about 8 inches apart. Keep plants growing but do not crowd them till the cool September nights come. Then remove the corn stalks, cultivate well, use the hoe vigorously, fork up the earth on each side of row, and apply plenty of water to the roots, but avoid pouring on the growing celery stalks.

Should the fall be dry and warm, do not take your celery up till the last of November, but watch our usual storm from the 5th to the 12th and protect from freeze. I have had a greater growth after this November storm than during the whole of the preceding fall. In putting away for winter use, dig the entire root, remove the suckers and all damaged leaves, and trim the roots as when set out in the row. Into a barrel or large goods box in the cellar, put enough rich earth and water to make a "lob-lolly." In this pack the celery closely with roots well covered. Exclude the light from barrels or box; water at least once a week, but be careful not to wet the stalks. Water causes them to rust and rot. With a short piece of old rubber hose and a funnel place the water between the plants directly on the roots. Here your celery will continue to grow and blanch, all winter. The growth under these conditions is superior to any growth in the garden. I have had Giant Pascal grow out at the top of a large barrel, the stalks being "broad, thick and crisp, of a nutty flavor." It will pay every family to grow a few rows of this excellent vegetable. It requires less work than to grow and care for cabbage. The heart of most varieties is golden yellow and being full and attractive in appearance, is an ornament on the table. Celery is more than a relish—no better nerve food can be produced in your garden. C. H. DUTCHER.

Warrensburg, Mo., May 6, 1904.

Cloudburst Near Kansas City.

The following from Major Holsinger came after his department had been printed. It tells of the flood which swept away many gardens west of Kansas City, including some of the best berry fields in that section.

Who of you has seen a cloudburst? I hope you may be spared the ordeal. Thursday, May 5th all was well with our valley. Rains were the order, mingled with hail; some of the hailstones were quite large, but, as there was no wind we were apprehensive of no danger to our fruit, which up to this time was of great promise. While the rainfall was heavy, yet we were not apprehensive of what was to follow. We settled in this, the Turkey Creek Valley, in 1868. With two exceptions the creek banks were sufficient to restrain the water fall—twice only has it failed, in these cases the damage was merely nominal. Last spring the backwater from the Missouri and Kansas rivers submerged a considerable portion of the north end of our city. The damage then was considerable. Today it is intensified 100 fold.

Standing by my window and looking out, wondering when the rain would cease, my eye met a raging torrent, a river where but a short few minutes before was a creek that normally one could cross with a jump. What is that? I looked and saw the bottom one turbulent flood, covered with buildings, lumber, trees, furniture, debris of all kinds. The water fully 300 feet in width, with a depth of 25 feet. To rush to the bank was the matter of a few minutes, or, as soon as I could throw on my overcoat. What a scene met my gaze. God grant I may not soon witness such another. Houses, stables, coops, were lifted from their foundations, some broken into kindling and with a "swish" they were carried down with the torrent.

"The water came as a wall," I am told. Many houses were in water to the second story. One grocery was struck in the front door and I am told $1,000 worth of goods were carried out of the back door and into the flood. To add to the trouble our people, who are largely employed in the shops and stores in Kansas City, were unable to communicate with friends and many tales of death and disaster were resultant. The street cars were soon out of service, as was the railroad, telephones, etc.

How was it in the country? A run up the valley yesterday shows a condition bad, as bad could be. The Turkey Creek bottoms are filled with gardens (I should have said were); all are swept way. The boys had acres of strawberries that were a wonderful promise, but today is a distressing sight. Where fields were recently planted, the soil is gone as deep as plowed. Acres of bearing berries are washed so that where plants remain the roots are so exposed that they cannot be recovered.

On orchard on the place of trees 4 to 5 years planted, that were in full bloom are a mass of ruin, while a considerable part is covered with rocks and boulders, showing the strength of the volume of water. Nearly all the bridges are out and roads in a lamentable condition.

We are engaged in trying to assist those who have lost all. Last year our city raised $1,000 to help those engulfed by the Kaw flood. Today many who themselves were among the most liberal are among the needy. Thus it is; we never know what the morrow has in store.

The Pear.

The pear is one of the favorite fruits. The pear of today is a different fruit from that of the past. Downing says of it: "In its wild state it is one of the most austere of all fruits; a choke pear of our fields, is really a great improvement on the wild type, which seizes one's throat with such an unmerciful gripe as to leave behind it no soothing remembrance of nectar and ambrosia."

Well, if they are akin to the choke pears of my youth I could not recognize them in the luscious Bartlett or divinely flavored Seckel.

The pear was cultivated in early times in Servia, Egypt and Greece, during the period of Roman glory. Pliny, who flourished about 2,000 years ago, wrote much of the pear. He spoke of the pear as "proud pears;" those which ripened early and which would not keep; "winter pears," or those possessing keeping qualities and used for baking, etc. I am led to doubt the juciness and lusciousness of those early years by what Pliny says of them: "All pears whatsoever, are but a heavy meat unless they are boiled or baked!"

The delicious qualities of the pear were not developed until the Seventeenth century. And only during the past century have the pears been produced through hybridization and crossing by experienced propagators, English, French and American, until perfection seems to have been attained in both beauty and flavor. While much has been done to develop the pear in the old country, their varieties running into the tens of thousands, in our country with our newer soil we too are adding constantly and have given to horticulture many of the better varieties.

Here we have produced that excellent variety the Seckel, unsurpassed by any in excellency of its flavor. By the production of this splendid pear we are taught the wonderful adaptability of our soil and climatic conditions to the pear's development. Through the propagation of many other sorts, that for size and color with freedom from disease surpasses our imported varieties. We have Kieffer, Garber, Va nDeman, Koonce, Rutter, Lincoln, Vermont, Bickett, etc.

The early French settlers brought with them seeds of the pear which they planted throughout this country, many of which are still standing and a number of the Bickett (Sudduth) type are still found which seem hardy, having stood the blasts of more than 100 years. Some of these trees are wonderful in fruit production. One such near Vincennes, Ind., is accredited with having produced 184 bushels in one year, enough, I take it, for the wants of an ordinary family.

The pear should be picked before fully ripened on the tree. They should be ripened in the house. Having been fully grown or as the seeds are coloring they should be picked carefully and placed in a cool, darkened room and used when in proper condition. I am often asked, "When is the proper time to pick my pears?" I usually answer as soon as seeds are colored or as soon as the pear will part easily from the branch.

The pears in ripening should be placed on shelves or in shallow boxes so they can be readily detected on ripening. In the ripening of Kieffer we have not been able, on account of the quantity, to prepare for them and find that by piling in fruit room a foot or more in depth does equally as well, going through them every few days and selecting out those ready for market.

A year ago Kansas made a show of pears in Washington, D. C. We had some very fine Kieffers. A friend of mine seeing them said, "What do you bring those worthless things for? I have several trees of them, but they aren't even an apology of a pear." Handing him a Kansas Kieffer which had been picked early and ripened properly, it was with difficulty that I could convince him that it was a Kieffer. On visiting him I found he had some five or six bushels of as fine Kieffers as you could wish to see, still hanging, that were of no value to him, but which he on my recommendation, picked and ripened, since which time Kieffer stock has advanced in his mind several hundred per cent.

Of the pears to plant, Kieffer is worth all the rest in dollars and cents. It is the Ben Davis of pears. It has size and beauty to commend it. Being blight-proof, or so nearly so one can plant it with some assurance of seeing it produce fruit. The second pear for profit is the Duchess, possessing freedom from blight, bearing young. There are many other good sorts that are worthy of trial. It is to be hoped that in the near future a pear possessing all the merits of both Kieffer and Seckel may be produced which will not only enrich the originator, but will be a joy and delight of the consumer.

Soil, elevation and cultivation have much to do with pear culture. The pear flourishes best on a good soil with porous subsoil. Never plant on gumbo or wet ground. Would recommend a small tree for planting because of root conditions. Pears are dwarfed by grafting or budding on quince. Such trees are used for small locations where handicapped for room. Seldom for commercial planting. Standards are grafted on pear stocks and are the best for commercial orcharding.

Blight, still unknown as to its origin, is the principal enemy to successful pear growing. How to remedy it is still a question unsolved.

When the pear comes into bearing cultivation should cease, as it is a well established fact that the pear does blight to a greater degree on trees of greater vigor than on trees of slower growth.—Major Frank Holsinger, before Missouri Valley Horticultural Society.

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Reports from Tyler, Texas, are to the effect that strawberry growers there had an excellent season. One bank paid out more than $5,000 a day for berries; one grower sold $500 worth of fruit from two acres.

From Arkansas points not only carloads, but trainloads of berries were moved. Prices for the Arkansas fruit opened well, the Little Rock Gazette being authority for the statement that one car of berries shipped from Van Buren to St. Paul, Minn., sold for $1,710. Twenty-six carloads from Tyler, Texas, brought the growers $40,000.

This is what the Kansas City Star says of the estimates made by the Frisco Railway of the fruit which will be handled by that company. Of course the figures were estimates, except for the strawberry crop, which was almost a reality when this notice was published:

"The strawberry rush along the line of the Frisco will start in May, when twenty-five carloads of the three-times-a-day fruit will come north. In this month 250 carloads—15 or 20 fast train-loads—will come hustling north from Arkansas, and 500 cars—try to imagine 500 freight cars full of fine, big strawberries—will come out of Missouri. That means 750 carloads of strawberries, on the Frisco out of Arkansas and Missouri in thirty-one days. In June the strawberry season dwindles to 150 cars, giving way to the peach in July. Arkansas will send 50 carloads of peaches, Missouri 25, and Indian Territory 10, in July. In August 500 cars will be Missouri's peach business for one railway; Arkansas will send 200, Oklahoma 50 and Indian Territory 10. In September Missouri and Oklahoma will wind up the peach season with 75 cars. The one road, the Frisco, will carry nearly 2,000 cars of strawberries and peaches in the season, and there are many other roads."

The estimate is likely too high, especially in regard to the peach crop, which was seriously damaged in Oklahoma and Indian Territory late in the season by frosts and hail storms. But even after shading this estimate considerably, it shows the fruit crop to be a most important part of the business of the railroads at this time.

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Arkansas to the Front.

About two months ago I saw in The Fruit-Grower a clubbing proposition, and I thought I would get up a club of five new subscribers. I started out after supper and was gone just an hour, and had my list of five. On the night of April 28 I spent just three-quarters of an hour and got five more subscribers. I wish everybody would take The Fruit-Grower. I am going to travel this summer and will surely canvass for The Fruit-Grower.

I came down here from Missouri last fall and was very much impressed with the country. It surely is the greatest place in the world for apples and peaches and all kinds of small fruits. The country is filling up very fast, but there is lots of cheap land here yet. Water is very fine and the country is remarkably healthful. The soil is not as rich as in some places, and in the mountains there is rock in the soil, but farm owners are hauling the stones off, as they are mostly on top of the ground.

Many farms have doubled in value, and some are worth three times what they were a short time ago. Strawberries are the great crop here now. Growers are getting $3 per 24-quart crate, and some have cleared as much as $200 from one-fifth of an acre of land. I am not in the real estate business, but would like to see everyone get a good home for little money. Mena is a fine little town, seven years old, with 6,000 inhabitants. We have electric lights, water works, etc.; lots of churches, good schools, etc.

Mena, Ark. J. W. LEEPER.

⚜ ⚜ ⚜

First and Third Tuesday of Each Month.

The Chicago Great Western Railway will sell Homeseekers' Tickets at one fare, plus $2.00, to points in Alabama, Arkansas, Colorado, Florida, Georgia, Kansas, Kentucky, Louisiana, Mexico, Mississippi, Missouri, Nebraska, New Mexico, North Carolina, Oklahoma, Tennessee, Texas, Utah, Virginia and Wyoming. For further information apply to M. F. Montgomery, City Passenger & Ticket Agent, 414 Felix St., St. Joseph, Mo.

Fruit Farms and Fruit Land for Sale

This department is for the benefit of Fruit-Grower readers who wish to buy, sell or lease farm lands. All advertisements of this nature will be inserted for a charge of 2 cents per word, each initial and number to count as a word. No display type will be used in ads which are accepted at this reduced rate, and all charges must be apid in advance. The rate of 2 cents per word is for each insertion. Count the words when sending your advertisement, and the cost can be easily ascertained.

THE FRUIT-GROWER CO., St. Joseph, Mo.

DO YOU WANT CASH
For Your Real Estate or Business?

I can get it for you. Send me full description and lowest cash price. My methods differ from all others. My office is headquarters for cash buyers. Makes no difference where you are located. Write today. Established 1881. Bank references.
Frank P. Cleveland, Real Estate Expt.
Adams Exp. Bldg., **Chicago**

We are the largest dealers in real estate in Grand Valley, the famous peach, apple and pear growing section of Western Colorado. Orchards here 8 years old net the grower from $500 to $700 per acre. The climate is the best in the world and is a specific for lung and throat troubles and asthma. Write us for information. The Home Loan & Investment Co., 357 Main Street, Grand Junction, Colorado.

Fruit Lands for Sale

Many choice fruit farms and tracts of fruit land in Doniphan County, Kan., near St. Joseph. Address, POOL GRINSTEAD, Wathena, Kan.

100,000 Acres of Missouri Ozark fruit, timber, grazing and farm lands for sale in small tracts. This is in the Missouri peach belt, as well as the home of the "Big Red Apple." For particulars write H. E. Kern, 758 West Main St., Valparaiso, Ind.

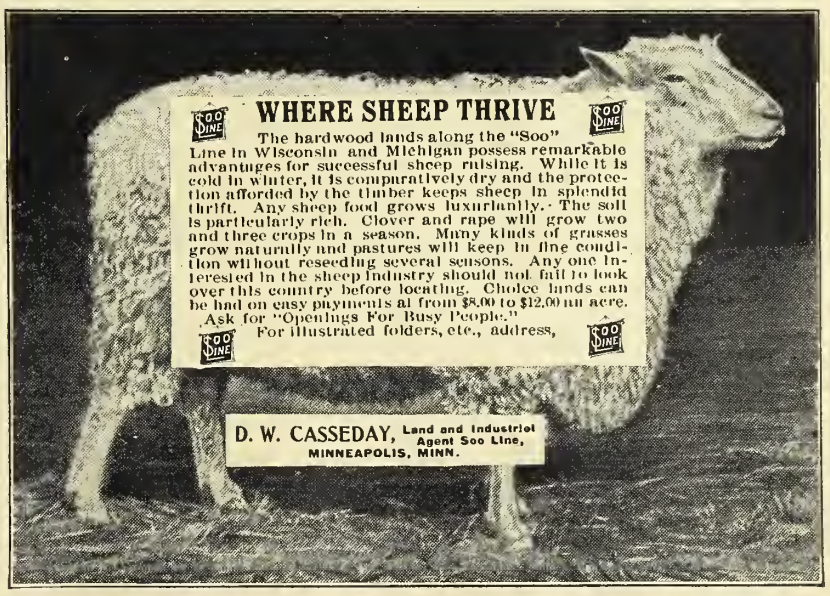
FINE MISSOURI FRUIT FARM.
200 acres, good residence; large bank barn, fruit evaporator, storage house and offices; joins town, three blocks from postoffice, school and bank; in the banner county of Western Missouri; land all level, black, rich soil; no rocks, hills, timber or waste land; all in cultivation and fruit; 100 acres (5,000 trees) in ten year apple orchard, best mercantile varieties; has netted $5.00 per tree per year. Good prospects big crop this year; bargain for quick sale; $11,000 cash and easy terms if sold in 30 days.
J. H. LIPSCOMB, 306 Fidelity Trust Bldg., Kansas City, Mo.

Arkansas Fruit Farm

Here is one I personally inspected and photographer. If you want a paying investment and a pleasant home, come right down and let me show you this 80 acres, Lawrence Co., Ark., 30 miles south of Missouri line; 2½ miles good R. R. town; 3-room house, barn 30x20, shedded, fine spring; 1400 apple, 300 peach, 400 plums, 250 cherry, 85 pear, all 6 years old; fine condition; 40 cleared, 40 big timber; vineyard; 8,000 grafted young peaches. I could fill a page about this snap. Price $2,000; one-half cash. This is one of 500 improved and timbered fruit, grain and grass farms on my list, covering Missouri, Kansas, Arkansas, Oklahoma and Texas. Free for asking, neat up-to-date pocket map either state, 10c, postage or silver. Yours for business,
LOTT, "The Fruit Land Man," 127 W. 8th, Kansas City, Mo.

Fruit and Alfalfa lands in the best fruit country in the United States. NINETEEN SUCCESSIVE CROPS, including PEACHES; free timber and building stone. Coal, $1.25 per ton. Delightful climate, no wind storms. $200 to $600 made on one acre of Fruit. Correspondence solicited. C. C. Hawkins, Paonia, Colorado.

FARM LANDS FOR SALE.
LANDS—CHEAP.
Large bodies of land and ranches; timber land, fruit and truck farms in Kansas, Oklahoma, Texas, Old Mexico, Louisiana, Arkansas, Southern Missouri, Colorado, New Mexico and California. Tell me what you want and where you want it and how much money you will invest if suited and I will send you list of bargains of the kind you want in that locality. I also have small farms and ranches in all parts of said States. I am working above mentioned territory thoroughly. Write me and see how well and how promptly I will serve you. I have land at 35 cents to $35 per acre.
GEORGE W. MORRIS,
Lyndon, Kansas.



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ST. LOUIS, MO.

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If you want to visit Oklahoma, New Mexico, Arizona, Texas or any of the other sections of the Southwest in which fruit growing is becoming such an important industry, investigate the low rates made by

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The Santa Fe reaches every part of the Southwest, and with its frequent and well equipped trains and splendid roadbed, is best prepared to serve the public. For circulars or any desired information. Address
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L. O. STILES, C. P. & T. A., St. Joseph, Mo.

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GERMAN-AMERICAN DOCTORS, 912 Walnut St., ITY, MO.

Oklahoma a Fruit Country.

Find inclosed $1 for club of five new subscribers. Sample copies you sent me had just arrived, and I took them to town and got this club. The people around here, after fifteen years' experimenting, have come to the conclusion that this immediate vicinity was originally intended for fruit. And it is certainly a good fruit country. We have the natural advantages for production, and for shipping we have two parallel railroad lines leading directly to the wheat belt to the west and to the vast coal fields to the south and southeast. All the bearing orchards are netting upwards of $100 per acre, without any spraying and with rather indifferent care in other respects. This spring a man from Missouri came down here and quietly snapped up half a section of good fruit land half a mile from town. Farmers who wouldn't talk fruit until recently are now planting from 500 to 5,000 trees each.

With the aid of the sample copies I was soon able to get five new subscribers and set three times that number to thinking about it. I have another block in view. The Fruit-Grower is a marvel of excellence at any price, and is indeed a wonder at the low price at which it is furnished.

ALMON HALL.

Choctaw, Okla.

Nothing but the best and purest shaving soap should ever be used on the face. The tendency to use "any old soap" is dangerous and untidy and often causes soreness and irritation that may result seriously. Poor soaps bite and sting and take the edge off your razor; in fact, they are unsatisfactory in every way. We advise the use of Williams' Shaving Soap as a means of overcoming all these difficulties. Send a 2-cent stamp to the J. B. Williams Co., Glastonbury, Conn., for a trial sample.

Notes.

At the meeting of the Connecticut Pomological Society it was the consensus of opinion that on all locations elevated less than 200 feet, all peach buds and some trees are killed; at from 200 to 400 feet there are some good buds, and above that a prospect for a fine crop. Moral: Plant your peach trees high.

A daily paper calls attention to the "strange occurrence" of peaches having been killed on the south side of a house, while on the north side the bud were unhurt But this is not strange, but simply shows during the past two or three years growers are appreciating the fact that peaches should be planted on high, exposed locations.

At Koshkonong, where J. G. McNair, T. M. Culver and others have large peach orchards, the crop will be immense this year, according to present prospects. On the night of April 16 there were indications of frost, and piles of logs, cornstalks, etc., were built through the McNair orchards, to be lighted in case of necessity. But the night passed without frost, and it is believed the crop will be ususually heavy.

While he believes in clean cultivation for orchards, Mr. H. A. Aldrich, president of the Illinois State Horticultural Society, says that he does not discontinue cultivation as early as is generally recommended. In carrying his apple crop through the summer he has had to cultivate the soil very late, in order to bring the apples to maturity. Then after the fruit has been gathered he sows a cover crop. He says: "I sow rye broadcast; have tried pretty nearly everything, and while I do not like rye, it is the only cover crop that has the name that will come up and make a cover crop, and if it does not get ahead of me in the spring it is all right."

Here's to the Man Who Can Do Things.

We live in a day of specialization. Let a man prove to the world that he can do things in a masterly way, and we lay all honors at his feet. He is carrying the world's burdens. For instance, we must have gloves, good, reliable, comfortable gloves, and we must have them well made. J. H. Cownie Glove Co., Des Moines, Iowa, have done the world a wonderful service in producing the Kinghorse Glove, the greatest work glove on earth. The world of men wanted a good work glove; Cownie came to the rescue, and in response to the law of supply and demand, is manufacturing the Kinghorse Glove. It is absolutely right. Cownie has added to our length of days by preserving the hands that were made to toil in a perfect condition. He has made men young by giving them solid comfort, which is found in every pair of Kinghorse Gloves.

If you are not a wearer of these gloves, ask your merchant for them today. It is with pleasure that we recommend this glove to our readers.

Traceless Harness in Fruit Cultivation.

The Baker Traceless Harness, manufactured by the B. F. Baker Company, Burnt Hills, New York, is an acknowledged success. It is adapted to work on the plow, harrow, cultivator, scraper, log hauling, the stone boat and all kinds of low down farm work. In addition, it can be used on the farm wagon, the pole passing over its evener or draw bar. Aside from the matter of orchards and fruit cultivation, for which we believe the harness has its most beneficial use, the chief points to be urged in its favor are that it is light, strong, does not gall or chafe, allows the utmost freedom of the horse, gets the most efficient service out of him and is a great convenience in hitching and unhitching.

To the fruit-grower the value of this harness cannot be overestimated. It eliminates entirely the barking and skinning of trees, for it has neither traces nor singletrees. This is the most persuasive reason for its use among fruit-growers. A harness which enables them to cultivate right close up to trees without interference of singletree or tug and with absolutely no danger to the trees, must be welcomed as a boon. A large number of users, having once tried it, now feel that they could not possible go back to traces and singletrees again. The Baker Harness gives a square pull from the horse's shoulder. There is no side pulling on neck or back. Another valuable feature is that it makes light draft because it permits close hitching to the load. The harness is well and durably made from the best obtainable materials. The catalogue issued by the manufacturer illustrates and describes the harness fully and contains many enthusiastic testimonials from users. A card will bring it with all particulars.

Robinson's Tree Paint.

Wm. Robinson, Bowling Green, Mo., manufacturer of Robinson's Tree Paint, sends us a circular telling about his preparation, with testimonial letters from different persons who have used the same. Mr. Robinson claims that his tree paint will prevent the female borer from depositing her eggs in the tree, and will also keep rabbits, mice, etc., from barking the tree. Mr. Robinson is a nurseryman and has thoroughly tested his paint, and has great confidence in offering it to the public. Fruit-Grower readers who are interested should write to him for details concerning his preparation.

How People Everywhere Save Money.

It is surprising how many people nowadays send to Chicago for everything they use and especially the number of people who get almost everything they buy from the big mail order house of Sears, Roebuck & Company, Chicago. Those who have never dealt with this house would be surprised to know the volume of business they do (about twenty-five million dollars annually), and the class of people who buy from them. There was a time when only the country people, the farmers, and those situated at great distances from cities or sources of supply would send to Sears, Roebuck & Company for goods, but this great house has in recent years succeeded in lowering the prices on all kinds of goods so that people everywhere, even in large towns and cities, find that they can save so much money by buying from this house that they send away for their goods. The standing of this house is the very highest, its reputation for fair and honorable dealing is established everywhere. Their policy o ftreating their customers is most liberal and they refund the money immediately and pay freight or express charges both ways for any goods that do not prove perfectly satisfactory in every way.

In lines of merchandise like bicycles, carpets, clothing, watches and jewelry, furniture, groceries, guns and sporting goods, hardware of all kinds, vehicles, harness and saddles, sewing machines, stoves, musical goods, pianos and organs, men's, women's and children's wearing apparel of all kinds, the prices they make on the highest class of goods are really astonishing and in many cases the prices are one-third to one-half less than the prices that retail dealers ask for the same goods. They sell everything in merchandise and if you would like to see their prices on any class of goods as well a their full explanation of their liberal terms of shipment, their guarantee and refund proposition, just write them a postal card and state the kind of goods you are interested in and a complete book covering such a line will be mailed to you immediately, postpaid, free of charge.

"There is no paper I value as I do The Fruit-Grower. When I get balked, I just go to my stack of Fruit-Growers and soon get straightened out. I wish the paper a long and successful life."—John H. Setsere, Decatur, Ark.

Apples have been badly injured near Roanoke, Va., says T. D. Lockett of that place. Peaches on lowlands were all killed, and some on the mountains.

Saves Half the Cows or Doubles the Profits

One of the big western creamery companies has figured out from several years' actual experience of its thousands of patrons that a

De Laval Cream Separator

and TEN COWS will earn more ebery year than

Twenty Cows Without One

There surely could be no better nor stronger Separator argument than this.

Send for catalogue and name of nearest local agent.

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The **OK** does the work quicker, better and much easier than any other washing machine on the market.

Any Eight Year Old Boy or Girl Can Run It while you hang up the clothes. Saves lots af time and hard work and does away with wash day backaches. The only Rotary Washer with revolving steel ball gearing. It runs very easily, almost noiseless. **The O. K.** declares fifty-two dividends a year, payable every wash day. We urge that you see the **O. K. at your local dealer's store.** If he does not handle it, send us his name and we will see that you are supplied with one. Wringer box on every machine.

H. F. Brammer Mfg. Co., 1445 Rockingham Road, Davenport, Ia.

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Never tires, Works Day or Night, Wind or Calm, Rain or Shine. A hired man that takes no vacation and never kicks.

Complete 1½ H. P. ENGINE $75

Every Engine Absolutely Guaranteed.

This Engine is complete with water, gasoline tank, both tube and electric igniters, piping and all fittings and connections, mounted on base, **Ready to Run.** Pumping attachment as shown in cut $10 extra. Starts or stops in a moment. All set up when you receive it ready to operate, and a child can run it. **Absolutely Safe.** No fire, no explosions, no danger of any kind. Can be moved from place to place. The simplest and the best Gasoline Engine ever produced. Also **3 and 5 H. P. Engines** at proportionately low prices. Fully described with large clear cuts in our Special Gasoline Engine Catalogue. With these engines you can churn, saw wood, pump water, shell corn; run creameries, printing presses, manufacturing plants, etc. The 1½ H. P. will pump more water in a day than ten men. Requires little attention and furnishes the cheapest power on earth. Send for free Gasoline Engine Catalogue.

O. L. CHASE MERCANTILE CO., Dept. M2, Kansas City, Mo.

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Not only the best, but the only Real Shaving Soap. Its thick creamy lather softens the beard quickly and leaves the face soft and smooth.

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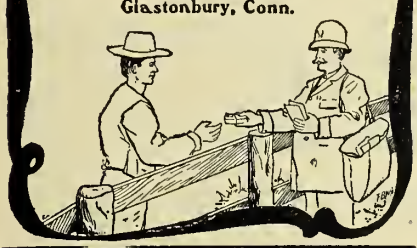

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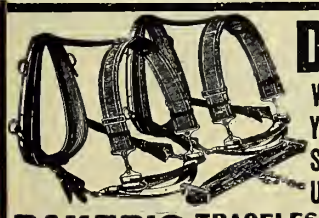

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No whiffletrees—no traces. Fine for farm work. Has no equal for use in orchard, vineyard, garden, lumbering, etc. Easier on team. Write us now. Catalog free. Agents wanted.
B. F. BAKER CO., 228 Main St., Burnt Hills, N. Y.

YOUR EYE

Conklin's SELF-FILLING PEN

"The Pen That Fills Itself"

Dip pen in any ink-well or any ink, press lever and the operation is over. As a matter of cleanliness, comfort and convenience, don't you owe it to yourself to learn more about this perfect pen? The metal presser bar prevents pen rolling off your desk—**a very important feature,** and one that is worthy of your serious consideration.

If you will let us send you our beautiful new illustrated catalogue, it will make you a CONKLIN enthusiast.

THE CONKLIN PEN CO.
530 Madison Avenue, TOLEDO, OHIO.

Texas Coast Country as a Fruit Section.

The winter just passed has been one of the mildest and most delightful I have ever experienced. I came to this coast country from the highlands of Tennessee some two years ago and have become quite well acclimated by this time and am well pleased with the change.

This is a great fruit and truck country. Ripe strawberries and dewberries and blackberries have been on the Houston market nearly every day since January last and are now in their prime. The recent cold weather killed the fruit in the northern part of this state, but did no damage in this region. Plums, peaches and pears are looking fine at this writing. Grapes are showing up well. Certain varieties of grapes grow and ripen splendidly here. Melons are up and growing nicely. There is never a day in the year when we can not have fresh vegetables in the garden here if reasonable precaution is exercised. Irish potatoes are now ready for use and snap beans and English peas, together with all of the greens and salads. This is also the land of flowers and beautiful roses, naturtiums, violets, pansies and such like are to be seen in the yards all winter long. Nearly every plant and flower that grows in the northern states does well here, besides some which are peculiar to this section.

One of the new and unique industrial enterprises recently started in this section is the Diversified Farming Company with ample capital which proposes to engage in the cultivation of fruits, trucks, and field crops on a large scale and upon scientific principles. It will operate two or three farms of several thousand acres each in different parts of this state so as to be sure of a long and successful season for its products. The business will be conducted somewhat after the plan of the department store in the cities. There will be a general manager of the premises and a manager of each of the several branches and departments of work on the farm such as the fruit, truck, live stock, dairy, poultry and so on. These managers are required to invest a few thousand dollars in the stock and bonds of the company and share in the profits. Only experienced and capable men are wanted for the numerous positions and the crops raised in each department will be the most profitable to be grown in their region and will be marketed in the best manner possible. It will be conducted on business methods and doubtless prove a valuable object lesson to the farmers of this section as well as other parts of the Southland.

This country is going forward by leaps and bounds and judging from the way settlers and investors are coming from other states this will soon be as highly developed as the older states. There is still room for thousands of fruit-growers in this land of plenty. Success to the Western Fruit-Grower. E. C. ROBERTSON.

Houston, Texas, April 18, 1904.

Horticultural Experiments at Maine Agricultural Experiment Station.

At the recent meeting of the Station Council, Professor Munson who has charge of the horticultural work of the Station gave a brief outline of the work finished during the year, and of that at present under way, as follows:

The studies upon the common dandelion, the fall dandelion, hawkweeds, and ginseng completed during the year have been published as Bulletin 95.

The experiments upon the growth and hardiness of clover seed from widely separated localities and countries are completed and the results will be published in the near future.

The study upon reciprocal crosses in the fertilization of flowers has been completed and will be published in the bulletin in the early summer.

An orchard of dwarf pears and another of Japanese plums and their hybrids were started at the Station the past year with the purpose of studying their adaptability to Northern New England.

Orchards cover crops for the purposes of protection and of gathering nitrogen have received attention at the Station orchard in Orono. Spring and winter vetches, yellow lupine, velvet bean, rye and oats are among the crops used. This work is being continued.

The study of apples native to the state, which was begun in 1902, is being continued. A number of the most valuable Maine seedlings have been grafted into the Russian orchard, which is gradually being top-worked into an orchard of Maine varieties.

The studies upon the cultivation and methods of propagation of the blueberry which have been in progress for several years are being continued. While considerable progress has been made, work of this kind proceeds slowly and it will be some years before it can be hoped that garden blueberry culture will be worked out as clearly as that of the commonly cultivated small fruits.

During the past year a good deal of time has been devoted to a study upon the pollination of apples, especially with reference to the relative potency of pollen from different varieties. This work will be continued the present year.

The effect of the character of the stock upon the quality of grafted fruit is being undertaken on a large scale in a well established orchard. By the advocates of the Ben Davis apple it has been claimed that if for any reason the fruit ceases to be in demand the trees can be top-worked into other well established varieties. On the other hand the claim is that Ben Davis stock influences the grafted fruit unfavorably. To study this question work has been begun in top-working a block of 660 well grown Ben Davis trees, 14 years old and coming into full bearing.

Liquid Spray vs. Dust.

In your last issue of the Western Fruit-Grower an article appeared by Mr. W. D. Maxwell, where he claims that in his judgment the dust spray is superior to the liquid. The essence of his argument in support of the dust spray seems to be that because the dust has more anti-fungi ingredients it must be necessarily better. Mr. Maxwell possibly overlooks the principal feature due to his success. By cultivation and spraying for several years and maintaining a vigorous tree growth, he may have in a great measure overcome the dormant spores of fungi. Again it is possible that he has sprayed more frequently of late years with the dust than he formerly did with the liquid.

I have used the liquid spray for several years with Bordeaux mixture and arsenic as an insecticide combined with the best of results. Years ago my experience in the horticultural line taught me of the great efficacy of lime as a preventive and cure for fungi. I use lime quite freely in liquid mixtures. One great advantage to the liquid spray is, that it adheres more tenaciously to the foliage than dust. Sulphur is a great preventive of fungi and red spider, but to get any real practical results for this enemy of horticulture it should be confined, as in greenhouses. Since we recognize that spraying is an absolute necessity to good fruit, I shall take the liquid in preference to the dust. Any man that has sprayed knows how changeable the wind is, especially when he tackles this kind of work, and to get a whiff, whiff of such vile powder mixtures as lye, etc.—well, my stomach is not yet ready to be turned into soap. I. W.

St. Joseph, Mo.

Fertilizers in Missouri.

A burning question with Missouri farmers just now is, "Does it pay to fertilize?" "Last year, on June 16," says Judge Simon Isenhower, a leading Barton County farmer, to the Lamar Democrat, "I planted twenty rows of corn. In one box of the planter there was fertilizer and in the other there was none. Last fall I gathered the corn. The first two rows, one of which was fertilized and one of which was not, I put together. Then I gathered the remaining eighteen rows, keeping the fertilized corn to itself. The nine rows that were fertilized made 1,500 pounds of corn, of most excellent quality. The nine that were not fertilized made 897 pounds, of an inferior quality. There is no use to inquire, 'Does it pay to fertilize?'"

Some growers in Texas are making a specialty of Bermuda onions, and are making money. It is said that an acre of these onions near Laredo recently sold for $1,250, in the field. This is a pretty strong story for such mild onions.

M. L. Stipe, Blue Ridge, Texas, sends a club of five new subscribers, and adds: "I am very much pleased with the Fruit-Grower, and shall place it in the homes of as many of my neighbors as possible." That is the right spirit, and accounts for the increase in the Fruit-Grower's circulation.

98c Buys these $3.50 Shoes SEND NO MONEY.

These are high grade Mens' and Womens' Shoes at lower prices than ever before heard of. We guarantee them to be more stylish, better fitting, better wearing, than you can buy elsewhere at $3.50 to $5. This is the most wonderful shoe offer ever made.

98 cents buys this Mens' handsome Blucher hand-sewed sole, box calf shoe, in latest New York Tipped Toe; an extremely stylish, high grade, durable shoe, equal to shoes that sell in stores everywhere at $3.50 to $5; all sizes.

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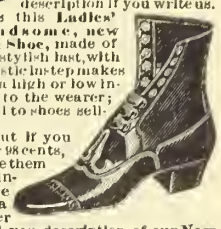

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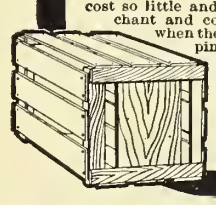

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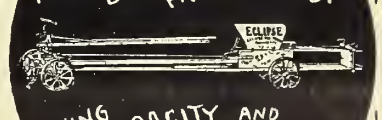

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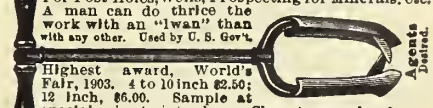
For Post Holes, Wells, Prospecting for Minerals, etc. A man can do thrice the work with an "Iwan" than with any other. Used by U. S. Gov't.



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Don't mix milk and water. Has utmost cooling capacity. Inner can instantly removable. No water required in winter. Air chamber over whole can. Improved faucet, and many other important features described in our **FREE** catalogue, which is a dairy education in itself.

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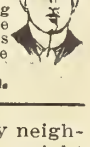
To prove to every person afflicted with Eczema, Salt Rheum, Tetter and all obstinate Skin Diseases that **Lapodine** will cure the most obstinate, long-standing cases, we will send one box free to every sufferer. All we ask is that you send 10 cts. to cover the cost of postage, packing, etc.



EMPIRE REMEDY CO., Topeka, Kan.

Poultry Department

Poultry in the Orchard.

In the Frult-Grower for Aprll appeared an article concerning the injury to apples by the plum curculio. It will be remembered that it was stated in this article—and experiments elsewhere bear out the statements—that the curculio pupates in the ground, most of the insects being found within two inches of the surface. At once the remedy for this insect is suggested—cultivation. But there is another side to this matter which will especially interest every fruit-grower who raises poultry in connection with his orchard work, and that is the keeping of poultry in the orchard will destroy these insects and lessen their ravages to a great extent.

The curculio enter the ground in June, and at this time the poultry which is kept in the orchard will be most active in the search for insects. If the soil is stirred occasionally there can be no doubt that the sharp eyes of the chickens will get all the insects which are brought to light.

We would like to hear from other readers of The Fruit-Grower who have kept their poultry in their orchards. We know there are a great number who have made a success of this work, and we know there are many more who will engage in this work in the future, and no series of articles will prove more interesting or more helpful. The articles which we have published on this subject were much appreciated, and we shall be pleased to hear from others.

Feeding Young Chicks.

A writer in the Reliable Poultry Journal offers the following suggestions concerning the feeding of young chicks:

"The feeding of chicks is a very important part of the business; should be attended to very carefully and good judgment should be used when feeding. Do not feed your chicks for the first thirty-six hours. After that time feed them hard boiled, infertile eggs four times a day, for the first three days. On the fourth day give them two meals a day of the following Johnny cake: Mix together 25 pounds bran, 25 pounds corn meal and 10 pounds middlings. Bake in an oven until well done. For the other two meals give them cracked wheat and fine millet scattered in litter of finely cut straw about an inch deep. Feed them what they will eat and no more; overfeeding is one of the worst things possible.

"Have regular hours for feeding; then the chicks will not be expecting to be fed every time they see you. After six or eight weeks their food can be changed to cracked corn, whole wheat and kaffir corn, fed in litter three times a day. Provide some kind of green food for them. Lettuce is very good, as it is tender and well liked by young chicks. Onion chopped up finely and fed once a week is very good for their general health and appetites.

"After the chicks are about six weeks old, feed them one-fourth ounce of beef meal per chick once a day. Don't forget to supply them with plenty of grit from the time they leave the incubator to the day they are shipped to market."

A Poultry Plant On Six Acres.

Many helpful suggestions are made by the poultry writers, but very often conflicting theories appear which lead one to believe that location and surrounding circumstances have a great deal to do with profitable poultry raising. I contemplate engaging in the poultry business in a commercial way. I have six acres of tillable land, partly rolling with a southeastern exposure. How can I manage the six acres so as to make the business profitable? How many hens can I keep and what breeds, to produce the greatest number of both eggs and marketable fowls? I will keep only one horse and cow on the premises. I propose sowing some kind of grain or grass on about two acres so they can have pasture. Will some experienced poultry raiser answer the above by relating through the columns of The Ohio Farmer his experience in commercial poultry raising? Also what amount of house room and how to arrange in a cheap way.—W. H. Fairburn. Wabash Co., Ind.

Reply by L. E. Keyser, Bradford Co., Pa., in Ohio Farmer:

To start in the poultry business in a modest way on six acres of land, it would be well to have a general idea of what the plant is to be when completed and gradually build to it. The number of fowls that can be kept on the four acres to be devoted to poultry, varies with the plan of maintenance. By the intensive system, 800 birds can be kept on an acre, but this requires that all food be supplied them and especial care given to cleanliness. At first it might not be desirable to yard all the fowls, in which case they should be kept in colony houses some distance apart. This requires more labor from the attendant, but saves the cost of fences. Portable houses may be used and in winter they can be drawn together, saving much of the labor.

I think, however, our friend will find it in every way more desirable to build permanent houses and yard the fowls, or at least most of them, the greater portion of the year. My plan is to have the houses 10x32 feet, divided into two pens. These houses are set eight feet apart in row, rows 100 feet apart. This allows the yards to be 20x48 feet, two on each side of the house. The posts for the yards are set eight feet apart, but instead of attaching the netting to the posts, panels are made of six-inch fence boards to which the wire is fastened, and these panels are hooked to the posts at top and bottom. By this arrangement only sufficient fence is required for yards on one side of the houses, and the land on the other side is left clear for cultivation, so a crop for the fowls can be growing there while they occupy the yards. When it is desired to change the yards the fence is transferred to the posts on the other side of the house.

The style of house will depend on the climate, the breed of fowls to be kept and the amount of money to be expended. In all but severe climates the "open house" is very satisfactory, and it is the acme of cheapness. It is built of common lumber with shed roof six or seven feet high in front and three and a half or four feet at eaves, covered outside with tarred felt or some other roofing. One-half the front is left open, except for a covering of wire netting. The canvas-covered frames hinged at the top, inside the wire let down to close the opening at night and in stormy weather, but at all other times they are turned back and hooked to the inside roof of the house. The roosting platform is in the enclosed half of the house, two feet above the floor, and the roosts one foot above the platform. Another canvas frame hinged to the roof and reaching to the platform lets down and encloses the fowls at night. This house has no glass windows and is always dry and well ventilated.

This house will comfortably hold fifty birds, twenty-five in each pen. Ten such houses, fence for yards and all-purpose, gable-roof house 12x24 feet will make a good equipment to start with ,and should not cost over $500, depending on the cost of lumber and labor. The all-purpose house can be used in the spring for setting hens, as a brooder house and workshop, and later for young stock, for a fattening and killing house and for wintering cockerels and old birds. Only about an acre of land will be occupied by the houses and yards for matured birds and the rest can be used for the growing stock and for raising food for the fowls. The plant can be extended as the business grows and experience is gained.

For both eggs and poultry the Plymouth Rocks or Wyandottes are the best, and especially so if the chicks are to be raised by natural methods. You will want an incubator, of course, but if you are new at the business, the bulk of hatching will probably be done by hens at first. Hatching should commence as early in the spring as possible and continue until the middle of June. All the cockerels and late pullets may be fattened and marketed. Coop fatten, even if you do not use the cramming machine, for by so doing you can realize from 75 cents to $1.25 each for chockerels that would otherwise sell at from 30 to 50 cents. The additional cost for food is small in comparison to the returns, not being over eight or ten cents per bird. Pullets that show signs of laying before November 1, and the choicest hens that moult early and commence to lay, should be reserved for layers and breeders. Breed from two-year-old hens that as pullets were good layers.

Timothy Haley, Greeneville, Tenn., says there is no fruit in his section this year. A heavy frost on the night of April 16, followed by a heavy fall of snow, was too much for the buds.

Annual Flowering Plants.

In order to supply the very large and increasing demand for publications relating to the cultivation of flowers, the United States Department of Agriculture has had prepared and will soon issue Farmers' Bulletin No. 195, entitled "Annual Flowering Plants." This bulletin was prepared bl L. C. Corbett, Horticulturist of the Bureau of Plant Industry of the Department.

The bulletin contains suggestions for the use of plants about dwellings, and the construction of hotbeds and cold frames.

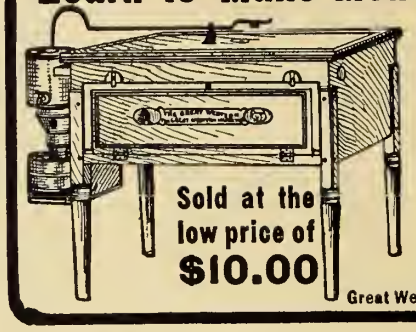
The dates for planting the seed of each of the varieties enumerated in the publications, as well as the particular requirements in their cultivation, are stated in the discussion of each species. General cultural directions relating to sowing seed, germination, moisture, soil temperature, and transplating are also given.

The bulletin contains plans for school gardens, and is illustrated with 55 text figures. Copies will be sent free to any address in the United States on application to a Senator, Representative, or Delegate in Congress, or to the Secretary of Agriculture, Washington, D. C.

The Value of Fertilizers.

One value of soluble commercial fertilizer, and one that is not usually understood and appreciated by the farmer, is its influence upon the nitrifying bacteria of the soil. These microscopic organisms that have for their function the breaking down of the organic matter of the soil, in order that they may live, and which makes this matter soluble and in proper condition for foods for growing plants, cannot live unless a certain amount

Learn to Make Money with an Incubator



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Sold at the low price of **$10.00**
will be sent to anyone anywhere on **Forty Days Free Trial**, to demonstrate that it is the easiest to operate and most profitable machine on the market. We have spared neither material nor workmanship to make this incubator the most productive of results of any on the market. Made of first grade, thoroughly seasoned poplar, with 12 ounce cold rolled copper boiler and water pipe heating system, with perfect moisture and ventilation system, and regular metal deflector and safety lamp of the most improved pattern. Take advantage of this opportunity and send for catalog to-day of our Incubators and Broodars
Great Western Incubator Co., 915 Liberty St., Kansas City, Mo.

Eggs, $1.00 for Fifteen
From three popular breeds: Silver L. Wyandotte, Light Brahma and Barred Rock. Illustrated circular free.—DOW BROS., Stockport, Iowa.

This Lightning **Lice Killing Machine**

kills all lice and mites. No injury to birds or feathers. Handles any fowl, smallest chick to largest gobbler. Made in three sizes Pays for itself first season. Also *Lightning Lice Killing Powder, Poultry Bits, Lice Murder, etc.* We secure special low express rates. Catalog mailed free. Write for it.
CHARLES SCHILD, Ionia, Mich.

MONEY IN EGGS
By keeping them until prices are high. Can keep eggs two years if necessary, absolutely the same as a fresh laid one. Send 2 cent stamp for circular telling HOW, also handsome ART FOLDER of the largest FANCY POULTRY FARM in this country. Address Dept. C, J. C. HEATH'S IMPERIAL POULTRY FARM, Valley Junction, Iowa.

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83 kinds. Turkeys, Chickens, Geese and Ducks. Best and cheapest in the West. Finely illustrated. How to raise poultry, treat disease and make hens lay, etc. Send 5 cents for mailing. Box 451 M S. MINSHALL, DELAVAN, WIS.

100 Egg Size, $ 8.00
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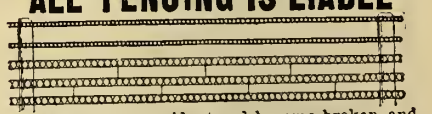
to meet with an accident and become broken and sometimes the wire nearest the ground will rust. See how easily and cheaply ours is repaired. Free sample and circulars.
The Truss & Cable Fence Co. Cuyahoga Bldg., Cleveland, O.

OUR RUBBER TIRED BUGGY
At Special Wholesale Factory Price $50
With ¾ inch Guaranteed Rubber Tires—The best bargain of the year
EASY RIDING NO JAR

SOME OF ITS SPECIAL FEATURES:
Full quarter leather top; long distance dust-proof axles; wrought steel body loops; selected hickory wheels; oil-tempered springs; wool cloth or whipcord trimmings, (leather $1.00 extra); open bottom spring cushions and spring backs; famous Dayton pattern fifth wheel; thirteen coats of paint. Covered by our iron clad guarantee. 5,000 sold in 1903. We can make prompt shipments of Buggies from either Kansas City or St. Louis. Seventy-five styles of buggies, road wagons, carriages, surreys, etc. Send for Buggy catalogue today. It's a dandy.
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A Pleasure To Answer Questions

Write, or call, and I will tell you what the cost of a ticket is to any point east, west, southwest or northwest. I will also let you know the best way to reach it, when you will arrive, whether or not a change of cars is necessary, and why you should take the Rock Island System.

The finest sleepers Pullman could build are now in through service between St. Joseph and Chicago via the Rock Island. Leave Union Station every evening at 7:05 o'clock.

Rock Island System

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City Passenger Agent
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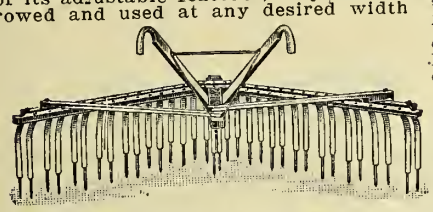
of soluble plant food exists in the soil. For instance, says the Michigan Farmer, these organisms cannot live unless the soil contains soluble phosphoric acid. Now, in some instances, a small application of fertilizer is simply the making of the crop. Say 200 pounds of fertilizer per acre will make a difference of a crop or no crop. I have seen a strip the width of a drill left unfertilized, and there was not enough wheat to pay for harvesting, while in the next drill mark the wheat was a good crop. Certainly the 200 pounds of fertlizer did not supply all the necessary food for this difference in crop. It was the effect the fertilizer had on the soil other than the extra supply of plant food that must be given credit for some of it. Undoubtedly this application of soluble fertilizer gave the nitrifying bacteria of the soil food to get a start on and they in turn, by breaking down the insoluble food existing in the soil, furnished soluble plnat food for the growing crop of wheat. And this is not all. The effect of this is not lost in one crop or in one season. These organisms go on freeing the insoluble plant food in the soil and permanently improve the land. There is a change from a comparatively lifeless soil to a living soil. This condition might be brought about in another way, but the cheapest and quickest way will be to give an application of commercial fertilizer. Otherwise this insoluble plant food may remain practically locked up for years.

Shallow Cultivators.

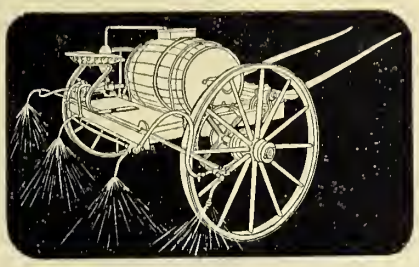
It is a significant fact which deserves more than mere passing notice that shallow cultivation is more and more taking the place of deep cultivation. This is not more true with gardeners and farmers who grow annual crops of vegetables than with the nurserymen and growers of fruit. An advertising patron of this paper, the Keystone Farm Machine Company of York, Pa., is the leading manufacturer of Shallow Cultivators. They make two styles; the Hallock Cultivator with an extreme width of twelve feet, and the Keystone Adjustable Cultivator, with an extreme width of 7½ feet, and which, by virtue of its adjustable features, may be narrowed and used at any desired width



down to 30 inches. Both these cultivators are supplied under special license with the Hallock flat cultivator tooth. The arguments, which are amply borne out by the experience of all gardeners and fruit-growers in favor of these cultivators, may be summarized in brief as follows: 1. Their use means shallow cultivation, stirring top soil only to a depth of half an inch, thereby killing weeds and making clean rows. 2. Top soil is kept mellow. Ground is covered with a fine dust mulch through which light, heat and moisture penetrate, supplying the requirements of plant life. 3. The cultivators can be used much quicker than others after rains, the soil drying to the depth penetrated by them in a few hours. 4. The moisture in the under soil is not brought up to the surface to dry, fresh weed seeds are not brought to the light and heat to start and the plant roots are not disturbed—a great advantage in time of drouth. There is no necessity for deep cultivation. Ground properly prepared is properly cultivated when the surface is stirred and kept finely pulverized, admitting light and warmth freely, and all chance of injury to roots is avoided. A great advantage in these cultivators is the time they save in cultivating work. When the plants are small the whole surface of the ground, row and all, is cultivated without injury to plants, the roots lying below the point reached by cultivator teeth. This permits the use of cultivator at its full width, up to 12 feet. When plants are larger one or more teeth may be removed over the row. For larger trees there is no better tool for work between rows than the Keystone Adjustable when narrowed down to required size. This class of cultivators have already established for themselves a large use. Considering the character of their work, the necessity for it, the time when it may be performed and the time saved to operators, they are manifestly destined to become more and more popular and with no class more than with nurserymen and growers of fruit. The manufacturers of these implements have published "A Book of Field Scenes," a book of some forty pages, showing reproductions from photographs of the cultivators at work in nurseries, orchards and varied crops. The book is taken up almost entirely with pictures, there being only enough printed matter to point the illustrations. The book will interest anyone who is inquiring into the matter of shallow cultivation. A copy will be mailed free to anyone writing direct to the manufacturers and asking for it, mentioning the Western Fruit-Grower.

E. C. Brown & Co.'s Spray Pumps.

Among the manufacturers of reliable spray pumps, none stands higher than E. C. Brown & Co., Rochester, N. Y. Located in the midst of the orchard section of New York, this firm knows what is needed in the way of spray pumps—and they have met the demand. Herewith is shown one style of pump made by the firm. This pump is for spraying potatoes or other low-growing plants, and is especially adapted to the needs of the strawberry grower who wants to keep his fields free from insects and fungi. This machine is so constructed that the drive is from both wheels, thus preventing the back lash experienced by the use of all other makes on the market. Whereas other sprayers will develop pressure of not more than forty pounds per square inch, the Brown Sprayer will easily produce a pressure of 120 pounds and



is never operated under a pressure of less than 80 pounds. The large pump capacity makes it possible to handle six nozzles at this pressure as well as four. Even a slow walking horse will give this power. The driving gear is arranged to compensate, hence there is no lost power in turning. Also the auxiliary lever for hand work makes it possible to develop power without driving. The importance of this cannot be overestimated.

The agitator is connected directly to the pump shaft and works constantly. It means a thorough mechanical agitation and delivery of the spray in the form of a fine fog or mist. This is not all. The spray coming with such force fans the leaves and branches, setting them in motion and this fog or mist like spray is allowed to penetrate to the inmost part of the vines. The mixture not only falls on top of the leaves, but the whole plant is sprayed from root to leaf. This is the only spraying worth while. The Brown sprayer also has a nice adjustment of nozzles which assists in accomplishing the same end. They can be set in almost any position and throw the spray down, up or sidewise. The Brown Potato Sprayer will spray either four or six rows at a time, it matters not about the width. Both the wheels and nozzles adjust for that.

For orchard purposes there are other styles of pumps, from the barrel pump to the larger power pump, operated by gasoline engine. Our readers should have the catalogue of this firm, and it will be sent free for the asking. Address E. C. Brown & Co., 282 State St., Rochester, N. Y., mentioning the Western Fruit-Grower when you write.

Important Announcement to Rectal Sufferers.

For 27 years Drs. Thornton & Minor, the well known Kansas City rectal specialists have been treating piles, fistula and diseases of the rectum on a positive guarantee, which required no money till cured and we are pleased to announce that this famous institution has now opened a branch office at 3969 Olive street, St. Louis, Mo. The St. Louis office will be fully equipped to administer the wonderfully successful Thornton & Minor system of treatment, and one of the members of the firm with two assistants will be stationed at St. Louis permanently from this time forth. Those who have not investigated the Thornton & Minor system of treatment should write at once for their 232 page, illustrated treatise on diseases of the rectum, which is mailed free and postpaid to all afflicted. They also mail a 108 page book for Ladies, and as these books contain the names of thousands of men and women prominent throughout this section of the country, who have been cured by Drs. Thornton & Minor, it would certainly pay anyone suffering to get these books and thoroughly investigate by writing to some of the many people who have been cured in years past. They positively accept no money until the patient is satisfied that a permanent cure has been effected. Read their advertisement in another part of this paper and write today for the free books.

Address Drs. Thornton & Minor, 3969 Olive street, St. Louis, Mo.

Lott, "The Land Man."

The advertisemenut of Frank E. Lott, whose method of advertising himself as "The Land Man," has won him a wide distinction and acquaintance among people interested in investments, appears in our "Farms for Sale" department.

He has made a careful study of the fruit and agricultural advantages of northern Arkansas, and offers some propositions which certainly are bargains and very attractive. A great many advertisements look well on paper, but Mr. Lott guarantees railroad fare and expenses if the farms don't show up as well on inspection as he described them.

If you are at all interested in buying in Missouri, Kansas, Arkansas, Oklahoma or Texas, he will be glad to send you a list.

THE DAWN OF CO-OPERATION.

A New Era in Merchandising Developed by Julius Kahn, the Chicago Economist.

When some few months ago the editor of this paper called attention of his readers to the growth of the co-operative idea in a brief article which related to the First National Co-Operative Society (The Cash Buyers' Union of Chicago), a wide-spread success was predicted for this movement, which has become national in its scope. Today we are able to state that our predictions have proved true in every particular.

The plan, as explained at the time, of organizing a gigantic mercantile institution, whose shareholders should be scattered all over the country on the order of the co-operative societies in England, has met with instantaneous and enthusiastic approval of the great mass of working people all over the country.

The plan, as originated by the founder of the institution, Mr. Julius Kahn, the well-known Chicago business man and economist, is very broad and comprehensive, and is really the first practical step toward genuine co-operation in merchandising in the Western Hemisphere.

The co-operators share equally in the profits of the business, and the scope of the plan is so gigantic that from present indications it will, in a very short period of time, revolutionize methods of doing business to such an extent that the working classes of people generally will be personally interested. Already thousands of them have placed the seal of their approval both upon the organization and the man who has founded it by investing, in a small way, of course, and thus becoming shareholders. This result seemed inevitable from the start, and it has proved to be the case.

The enterprise, to be a success, must give the shareholders the benefits proposed. It is the only way in which it could do so, and that Mr. Kahn has protected the interests of his co-operators is best evidenced by the way in which the most conservative students of co-operation have personally taken hold, and are working in the upbuilding of the institution.

In less than six months the development of the organization has reached a stage that stamps the plan as being what Mr. Kahn has been urging for years, the one practical way by which people with limited means may increase their incomes and establish themselves on a basis that will eventually render them comfortable and insure them a peaceful and comfortable old age.

The organization, based as it is upon an old and successful business institution, which has made a name for itself for good goods and square treatment; backed up by one of the cleverest merchandisers in the country, supported and endorsed by the ablest thinkers and practical business men, cannot possibly fail under its present management.

Mr. Julius Kahn, the founder, is of German parentage, and was educated in Cologne by the aggressive methods employed by parents in the fatherland, and at the early age of 18 set out in the world to hew out his future.

He immediately secured employment in Cleveland as assistant bookkeeper in a large manufacturing establishment. He made a special study of accounting, doing the work with a potential degree of thoroughness, evidenced in part by the fact that his library contains perhaps the most extensive collection known of books treating strictly on accounting, banking, finance and mercantile subjects.

Already the co-operative idea has taken firm root, and he devoted all his spare time to the study of the subject, securing all the information that it was possible to obtain from England, where co-operation is practiced so extensively.

He spent five years in mercantile bookkeeping, and then went to the Pacific coast, and took a fling at banking, again absorbing all there was to be known about this subject. He became a writer on financial questions, and his articles were copied far and wide.

After six years spent in banking, Mr. Kahn became a general manager and credit man for a large manufacturing concern in Cleveland, Ohio. In this new field of credits he again distinguished himself by thorough methods.

Having established a reputation as a master of detail and organization par excellence, he entered the mail order field in Chicago, from the start working towards the organization he has now perfected.

After years of careful study of the co-operative system as successfully applied in France and England, and believing that in the proper field the possibilities would be simply limitless, he organized and put into operation the First National Co-Operative Society.

As we stated before, the idea took hold immediately, and from the very first day he has had the support and encouragement of people in every walk of life. The fact that a large percentage of the people who have subscribed for stock and are working for the institution already are old friends and customers of the Cash Buyers' Union, speaks for the esteem in which that institution is held by its thousands of patrons during the last eighteen years of its existence.

If any of the readers of this paper are at all interested in co-operation, or even if you are not, we would suggest that you write for the book on "Co-operation" which Mr. Kahn has written and published, for even if you do not care to become a stockholder, it contains a well of information on co-operative institutions and practical economy that will be of the utmost value to any person in any walk of life. The book is sent free.

It can readily be seen to what gigantic proportions an organization of this kind can be built up with small investors, scattered throughout the country and having in every town at least one partner, however small his investment, to further the interests of the society.

If you write Mr. Julius Kahn, the president and founder, personally, he will take the trouble to send you without charge all of his interesting literature on this great international subject, as well as any information you may desire to ask him, and it will not in any way obligate you, as he is very much interested in having the American people know what he has done and is doing. When you write address Julius Kahn, President, Dept. 482, 158-168 West Van Buren St., Chicago.

I do not want my subscription to expire to The Fruit-Grower. It is the best paper in the United States, one number being worth a year's subscription price to any careful reader.—W. F. Benson, North Yakima, Wash.

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in the bladder, wetting the bed and such rheumatic affections as chronic, muscular or inflammatory rheumatism, sciatica, rheumatic neuralgia, lumbago, gout, etc., which are now known to be due entirely to uric acid poison in the kidneys—in short, every form of kidney, bladder or urinary trouble in man, woman or child.

That the ingredients will do all this is the opinion of such authorities as Dr. Wilks of Guy's Hospital, London; the editors of the United States Dispensatory and the American Pharmacopoeia, both official works; Dr. H. C. Wood, member of the National Academy of Science and a long list of others who speak of it in the highest terms. But all this and more is explained in a 64-page illustrated book which sets forth the doctor's original views and goes deeply into the subject of kidney, bladder and rheumatic diseases. He wants you to have this book as well as a trial treatment of his discovery, and you can get them entirely free, without stamps or money, by addressing the Turnock Medical Co., 805 Turnock Building, Chicago, Ill., and as thousands have already been cured there is every reason to believe it will cure you if only you will be thoughtful enough to send for the free trial and book. Write the first spare moment you have and soon you will be cured.

It would seem that any reader so afflicted should write the company at once since no money is involved and the indorsements are from such a high and trustworthy source.

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Missouri Fruit at St. Louis.

Mr. L. A. Goodman, superintendent of the Missouri horticultural exhibit at the World's Fair, has sent out circulars to Missouri fruit-growers in regard to the fruits which should be sent to St. Louis to keep up this exhibit. After giving recommendations for the cultivation and spraying of trees and plants, Mr. Goodman recommends that fruits be thinned so that the specimens will have best opportunity to develop. He says:

"Thin apples to 10 inches apart, pears and peaches to 6 inches apart, cherry clusters to 5 inches apart, plums to 4 inches apart, grapes to single bunches on the branch unless you wish to secure a vine full of clusters. Thin strawberries to three stalks for each plant and three berries to each stem, raspberries and blackberries to single clusters on each lateral and three to five berries in each cluster, reducing the laterals to one-third the usual number, except where clusters are wanted. Currants and gooseberries need at least three-fourths of the fruit removed. Mulching is a very great help in the perfection of these small fruits, giving an opportunity for watering, if need be.

"To secure extraordinary specimens of all the tree fruits, girdle the trees or branches about June 1st, taking out a ring of bark, one to two inches wide entirely around the tree or branch. For the grape, twist the vine, or tie a wire tightly about it; and for the currant and gooseberry do the same. The raspberry and blackberry can best be increased in size by thinning thoroughly. If this girdling of the trees or branches is done, it will check the wood growth and cause the fruits to develop to large size.

"We should have a characteristic and a complete exhibition of each and all our fruits, as they ripen, and this will be our aim and our ambition during the summer. The other States will expect this of us, and will watch us closely to see that we keep up our reputation and do our work well. We appeal, therefore, to every fruit-grower to make it their pride and ambition to have a part in this great exhibit at some time during the summer. If at any time you have a box of berries, a crate of peaches, a basket of grapes or a bushel of apples that are worthy of exhibition, be sure to send them to us for the display. Do this for your own satisfaction, for the honor of your county, for the glory of your State; to maintain our reputation and to gain greater renown, enabling us to show people of all lands and countries that here is the place to make themselves a home.

"Every package of fruit sent to us will be shown in the name of the exhibitor, as coming from his county, so that the honor will be yours. To those who could not assist us last year as they had expected, this is the opportunity to redeem their promises, and still secure honor and glory to themselves and to their county, by sending to us some of their choicest fruits during the whole summer.

"Picking and packing needs to be well and carefully done. Strawberries and all other berries need to be wrapped in wax paper, or in the parafine paper which is used in all grocery stores for wrapping butter, and can be easily secured. Wrap them carefully, pack them closely in the berry boxes and ship in the usual berry crate. Clusters of berries need to be still more carefully wrapped, first in tissue paper, and then in wax paper, and then well packed, if you expect them to carry in good condition to our Missouri exhibit. Cherries and plums need the same care and double wrapping; pack them well in berry boxes, or shallow crates, or small baskets, and put these inside of a large berry crate, thus making a double package; they are sure to carry well if so wrapped and packed. Quinces, peaches, pears and apples, whether early or late, need the most careful gathering and handling to secure good resudts. Gather when ripe, well colored, but while they are still firm, not soft. Select good, large fruits of even size, characteristic of the variety, without worms or other blemishes, without bruising or bruises, in fact as near perfect specimens as possible. Mark the variety, then wrap first in tissue paper, then in wax paper, then pack in baskets, and put up in the 4-basket or 6-basket crates, or in single-layer boxes, with all the spaces filled with paper, so that they will not move in the least while in transit.

"All these fruits need to be shipped by express direct to L. A. Goodman, superintendent of Missouri Horticulture, St. Louis, Mo., World's Fair Horticultural Building. Be sure and put on your name and address. Labels and wrappers will be furnished and all express charges will be paid by the commission, and still you get the credit of the exhibit."

Nature Study Suggestions.

To the real nature-lover the bird in the bush is worth much more than the bird in the hand, because the nature-lover is not after a specimen; he is after a living fact; he is after a new joy in life, says John Burroughs in Country Life in America.

It is an important part, but by no means the main part of what ornithology holds for us, to be able to name every bird on sight or call. To love a bird, to appreciate its place in the landscape and in the season, to relate it to your daily life, to divine its character, to know it emotionally in your heart—that is much more. To know the birds as the sportsman knows his game, to experience the same thrill, purged of all thoughts of slaughter; to make their songs music in your life—this is, indeed, something to be desired.

The same with botany: I regard its classroom uses as very slight. The educational value of the technical part is almost nil. But the humanizing value of the love of the flowers, the hygienic value of a walk in their haunts, the esthetic value of the observation of their forms and tints—these are all vital. This scientific value which attaches to your knowledge of the names of their parts or of their families—what is that? Their habits are interesting; their means of fertilization are interesting; the part insects play in their lives—the honey-yielders, the pollen-yielders, their means of scattering their seeds, and so forth—all habitats and seasons, to know their habitats and seasons, to have associations with them when you go fishing; to land your trout in a bed of bee-balm or jewel-weed; to pluck the linaea in the moss on the Adirondack mountain you are climbing; to gather pond lilies from a boat with your friend; to pluck the arbutus on the first balmy day of April; to see the scarlet lobelia lighting up a dark nook by the stream as you row by in August; to walk or drive past vast acres of purple loose-strife, looking like a lake or sea of color—this is botany with something back of it, and the only place to learn it is where its subjects grow. The botany that trails the days and the season and the woods and the fields with it—that is the kind that has educational value in it.

I confess I have not much sympathy with the laboratory study of nature, except for economic purposes. Nature under the dissecting knife and the microscope yields important secrets to the students of biology, but the unprofessional students want but little of all this. I know a young women who took a post-graduate course in biology at a noted summer school, and the one thing she learned was that certain bacilli were found only in the aqueous humor of the eyes of white mice. The world is full of curious facts like that, have no human interest or educational value whatever.

San Jose Scale in New York.

With more thorough acquaintance with San Jose scale and the remedies for it, the pest, while serious enough in all truth, has ceased to be feared as threatening ruin to the fruit interests of New York State. It can be controlled by any one of several methods, the main question now being which one to use; for hydrocyanic acid gas, crude petroleum, kerosene-emulsion, kerosene-water mixture, lime-sulphur-salt wash, lime-sulphur-soda wash and other applications will kill the scale if properly applied, and several of them can be used with safety.

This last is especially true of the sulphur washes, and these also combine other desirable qualities with scale-destroying powder.

According to Bulletin No. 247 of the Station at Geneva the lime-sulphur-caustic soda wash, which was extensively tested by the Station in 1903, is nearly as effective as the lime-sulphur-salt wash (and much easier to make), is of considerable value in repressing early spring leaf-eating caterpillars, is quite effective in controlling peach leaf curl, and probably is a partial preventive of apple scab and some other fungous troubles. It will not, however, replace the bordeaux-arsenical combination in preventing wormy apples.

"I want to congratulate you on sending out the best fruit paper I ever saw," writes O. Piper, Clinton, Ky., when he renews his subscription for three years.

The Southwest Limited

Is the new electric-lighted train, Kansas City to Chicago. Its route is via the new short line of the

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By one Missouri editor it has been called "The Sure 'Nuf Hurry-Up Train between Kansas City and Chicago." It is electric lighted throughout and carries standard sleepers, dining cars, compartment-observation-library cars, chair cars and coaches. Leaves Kansas City (Union Station), 5:55 p. m.; Grand Avenue, 6:07 p. m. Arrives Chicago (Union Station), 8:55 a. m.

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VOLUME FIFTEEN — JUNE 1904 — NUMBER SIX

Missouri Horticultural Society Meeting

The semi-annual meeting of the Missouri State Horticultura' Society, which was held in the Horticultural building, at the World's Fair, St. Louis, June 7 to 10, was not well attended, but a number of interesting papers were presented nevertheless. The strawberry exhibit in connection with the meeting was not as large as it should have been, the cause being that fruit-growers and farmers generally were too busy to prepare fruit to send to the meeting. Sessions were held in the forenoon of each day, the members being left free to visit the fair in the afternoon.

President D. A. Robnett called the meeting to order Tuesday morning, and after thanking the members for the honor of having elected him president he introduced the new president, Dr. J. C. Whitten, who presided during the remainder of the meeting.

The first subject up for discussion was "Strawberry Culture." None of the gentlemen to whom papers had been assigned, were present, and G. T. Tippin was asked concerning the strawberry business in Southwest Missouri. Mr. Tippin said that the growers in the strawberry section of the state are profiting by the experience of former years, and are now planting more largely of those varieties which ripen at a time when the markets which are reached by them are comparatively bare of any other fruit. Growers are also adopting those methods of culture which, from their experience, are proving best suited to their soils and conditions. In Southwest Missouri gravelly soils seem best adapted to the strawberry; plants are set early as ground can be worked, and good cultivation is given throughout the season.

"Our growers have generally adopted a method of culture which has been very profitable," said Mr. Tippin. "They get a good matted row, say two or three feet wide, the ground being kept level. Late in the season the growers go through the beds and with a sharp hoe thin the plants so that they stand about six inches apart. Better berries are secured by this method, the fruit colors up well, and even the last berries which set on the plants mature and attain good size before ripening."

Mr. R. E. Dewey of Iowa asked if keeping the runners off the plants after the rows are twelve to eighteen inches wide would not answer the same purpose as thinning the plants as suggested by Mr. Tippin. The latter replied that Mr. Dewey's plan was not so good, for, although it would keep the plants in narrow rows, they would be as thick in the row as if the runners had not been cut at all, and the berries in the center of the row would be crowded in consequence. Thinning is best; do it after plants are well established, say in September, and the plants which are left for fruiting will be much stronger next spring. Mr. Tippin says Southwest Missouri growers mulch in spring, hoeing out any weeds which may appear before mulch is applied; this mulching should be done early.

Mr. Dutcher asked how would it do to leave the thinning until spring, allowing the plants to protect themselves throughout the winter. Mr. Tippin thought fall thinning of plants would be better. When the plants are thinned the soil is disturbed more or less, and the plants which are to be left for fruiting must become re-established, in a measure. If thinning is done in the fall they will have plenty of time to perfect their crowns, but if done in spring the plants will be somewhat weakened because of the work which has been done among them.

Mr. Dewey asked if it would not be better not to allow the runners to form, after plants are located about six inches apart. Mr. Tippin said it would, but that this is impracticable where large acreage is planted to strawberries; too much work is required.

Col. Evans: "In the absence of good, clean wheat straw, what makes the best mulch for strawberries?"

Mr. Tippin said where only a small area is to be mulched leaves will be best; on a commercial scale prairie hay is to be preferred. Mr. Sylvester said he preferred to plant an acre of sorghum cane to be used for this purpose. Plant the cane very thick, using perhaps five pecks of seed to the acre. If the seeds are planted very thick the cane will grow up very tall and slender, and will make a good mulch, free from weed seeds. One acre of cane will make enough mulch for six or eight acres of strawberries where the plants are to be mulched lightly, as is generally done.

Mr. Dutcher advised against sowing this cane too late in season; sow not later than May, and on good strong soil use one to two bushels of seed per acre.

Prof. W. L. Howard of the Missouri Experiment Station was down for a paper on "New Varieties," and made an interesting talk on this subject. Prof. Howard has just returned from a trip through the strawberry section of Southwest Missouri, and told of the varieties which are being generally planted there. Prof. Howard's observations will be published in The Fruit-Grower soon, he having promised us a special article on this subject, which will include his report on the varieties generally grown. He said he found that the strawberry associations are confining the list of varieties to a very few sorts. At Neosho, for instance, the Aroma is grown to the exclusion of almost all other sorts. At Republic the Gandy is the favorite, and at Monett the Bubach and Sample.

Some new seedling strawberries were on exhibition, and special attention was called to them. One was brought by E. S. Katherman of Warrensburg, the berry having originated with Mr. Turner. It has been tried for two years, and is said to be most promising; said to be a cross between Marshall and Gandy; later than Marshall, but earlier than Gandy; berry firm, dark color and of good quality; plant a strong grower and very prolific; a perfect bloomer. The berry was unnamed, and later the committee on new fruits recommended that it be named Turner, in honor of the originator.

This committee also reported, later in the session, concerning a seedling strawberry sent by Mr. Bower, Monett, Mo. Said to be a cross between Brandywine and Marie; plant a strong grower; berry large, firm, a good shipper; light red throughout, ripening somewhat unevenly; form irregular, elongated; quality medium to good. Thought to be worthy of trial, and the committee recommended that it be named Bower, in honor of the originator.

Still another seedling was submitted by Wild Bros., Sarcoxie, Mo. Mr. Wild says it is the result of a number of crosses between Warfield and Gandy; foliage is more like Gandy; season is a little earlier than Aroma; the originators have fruited the variety for several years and think it worthy of introduction, and have planted it themselves on a commercial scale for fruiting.

Prof. L. R. Taft, in charge of the fruit judging, said he hardly liked to express an opinion concerning a strawberry simply from having seen the fruit alone, for the plant is an important matter in determining the value of a variety. Fruit is very handsome, even in size and berries arrived in good condition; form is perfect; berry above average in firmness, and as firm as Aroma and of better quality; if plant is healthy and productive, there should be a place for it. Mr. Wild said the plant is good; not such a rank plant grower, but it makes good plants and enough of them.

Reports were submitted by various members as to the varieties which are most popular in their respective counties. The varieties most recommended were Haverland, Gandy and Bubach. Other varieties were included, but the reports showed these to be the varieties most popular over the state.

Mr. Orlando Harrison, of the firm of J. G. Harrison & Sons, Berlin, Md., was present, and as he is interested in strawberries, and lives in a strawberry section, he was asked for a list of varieties as grown in his locality. He recommended Tennessee Prolific, although it is a little soft for shipment; Bubach is good, but has the same fault; Gandy is a good one; Excelsior is a good early sort, but this year the crop was cut short by drouth; Parson's Beauty is a good variety in Maryland.

Prof. Taft of Michigan said the growers in Western Michigan ship to Chicago market by boat or train, and their fruit does not have to be as firm as is required where berries are to be shipped greater distances. Haverland, Bubach, Brandywine, Clyde are good ones; a new variety, to succeed Aroma, is the Marie; a good late variety is Uncle Jim, or Dornan, as it is known by both names.

R. E. Dewey said that in Northern Iowa berries are grown mostly for home markets. Bederwood and Warfield, Bisel, Dunlap, Sample and Enhance would be his recommended list.

K. P. Brown of Georgia said their most profitable variety is Lady Thompson, then Brandywine; Excelsior and Klondike are grown, but they are too acid. On the coast growers plant Hoffman and Noonan, but they are not grown in Central Georgia. Plants are set in August, one good crop is secured, then the plantation is plowed up and planted to cowpeas, the strawberry plants being set on other ground for the following crop. Mr. Brown believes it is a mistake to plant only one or two varieties; six varieties are not too many, for one variety will fail one season, when conditions may be all right for another sort.

Secretary Goodman submitted his report, in which he said the society was organized in St. Louis, but had not met there for many years. He thanked the members for the help they had rendered in making possible the splendid fruit exhibit prepared for the World's Fair. Nine-tenths of the fruit shown had been furnished by growers who are members of the State Horticultural Society.

Just before adournment the first day, Mr. Dutcher, on behalf of the executive committee of the society, and the special committee which had investigated the identity of the Black

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and send in your renewal promptly if your date reads "June, '04" or further in arrears. This is the "dull season" in our subscription department and we hope all members of THE FAMILY who are delinquent will send in remittances promptly, for notices of delinquency will not be sent out until September. **Remember** the "five for $100" offer, whereby you may send your renewal and the names of five **new members** for one year, all for a dollar. Use the inclosed subscription blank when sending in your list. If you send ten new names, your subscription will be advanced one year free.

The Fruit-Grower Co., St. Joseph, Mo.

Ben Davis and Gano apples, offered the following resolution concerning the Black Ben Davis-Gano controversy:

"In view of the present status of the Black Ben Davis-Gano controversy, your executive committee, the special committee on said controversy concurring, feel it is due all parties interested and affected that the following statement be made:

"1. Our action in appointing said committee was a legitimate one, being in harmony with the position often taken in our discussions and which found formal expression in the resolutions recorded on pages 89 and 90 of the 1902 report.

"2. In harmony with the latitude given the committee at the time of its appointment, it decided that their investigation of the facts obtainable concerning the origin, dissemination and characteristics of the Black Ben Davis and Gano apple, should be reported on account of any bearing they might have upon the origin of the varieties and for their historical value, should they possess any, and that the work should be done in the same spirit in which one might trace the origin of a cultivated plant in order to determine if possible, whether it was an indigenous or an introduced specie.

"3. When this was accomplished, we considered our duty to the fruit-growers fully performed and hoped to hear no more of an already unpleasant controversy. But whereas the Stark Bros., of Louisiana, Mo., think a too strenuous interpretation has been given the statement made by their representative, Mr. Crow, at the summer meeting of 1902, viz: That the Stark Bros., think it right to appoint the committee; all they ask is a fair committee,' and that as a result they have been placed in an unjust attitude, the society would state the Stark Bros., did not in any other way ask for the appointment of the committee, did not to our knowledge verbally accept the personnel of the committee, nor agree to stand by its report, but manifested an acquiescent interest in its work by placing in their possession information and accompanying them in an interested capacity on their trip into Arkansas, which acts were calculated to leave the impression that they were satisfied with the committee, while it did not imply, as a matter of fact, they would agree to its findings in case the report went against their position. And

"Whereas, it is now claimed and charged by the Stark Bros., that since the report was made its legitimate function seems to have been lost sight of by many, to be considered from the standpoint of its alleged bearing upon commercial interests alone, to the exclusion of any scientific, or historical, or other value the report may possess, and that some have unduly used it to their detriment in business, and to their injury in reputation and character, for which our action furnished the occasion, this society would state and does now state, that it never contemplated any such use of the report as is charged, and that it was not our intention to unjustly interfere with any established commercial interest; that, recognizing the fact that some horticulturists and fruit-growers do not concur in the conclusions of the committee, we recommend every one interested in the matter to consider the entire evidence as brought out on both sides and make up his own opinion; and that we should all avoid any over-zealous defense of personal opinion which might lead to misunderstanding and partisan strife."

This resolution was unanimously adopted, but before being voted upon, Mr. Eugene W. Stark of the firm of Stark Bros., was recognized and made a statement on behalf of his firm. He said the report of the special committee had been used against their firm, and when the attention of some members of the executive committee and of the special committee had been called to this fact, they had expressed the opinion that the society should take some action to set the firm right before the public. Accordingly a statement was prepared and submitted to the firm for its approval, covering this point. After Stark Bros. had approved the statement, the document was submitted to the other members of the executive and special committees, and all members signed it, with the exception of Messrs. Tippin and Flournoy of the executive and special committees, respectively. These latter gentlemen, he said, asked that certain changes be made. The statement was taken to Louisiana, Mr. Stark said, by Secretary Goodman, who urged that they accept the modifications asked by Messrs. Tippin and Flournoy. The firm declined to do this, but said it would accept the original statement without the signatures of these two men, but the other members of the committees declined to issue the statement until all the members had signed it.

Mr. Stark read this statement in full, together with extracts from some letters from various members of the committee, leading up to the preparation of the statement. He said he wanted to lay the matter before the society, for his firm had met with the executive and the special committees on several occasions, but had been unable to get these committees to take such action as would tend to set the firm right before the public, even after the members of these committees, by their having signed the original statement, had admitted that the firm was entitled to this action on the part of the society. Owing to the limited time, Mr. Stark said, he would not cover the whole transaction, but that his firm would publish a statement giving the full details which led up to the preparation of the original statement and, later, to the refusal of the committees to issue it, after Messrs. Robnett, Dutcher, Goodman, Gano, Evans and Whitten had signed it.

Wednesday morning T. H. Todd of New Franklin talked on "Methods of Growing Orchards." He said location is very important; he prefers high, rolling, dry land, with deep subsoil, the land which was originally in timber being best. The hills along the Missouri and Mississippi Rivers are the best orchard locations, and the hills along any of the streams of the state are good. On these hills, where every slope can be secured, good crops will be had every year on one slope or the other. Mr. Todd would not plant the low places on even these locations; would fence off the lower spots, where the soil is very rich, and put these places in grass or some other crop. He prefers spring planting, and would plant about half a dozen varieties. Don't plant all Ben Davis or all Jonathan, but divide the planting among six good sorts. Don't plant trees too close; give them plenty of room. Corn can be planted among the trees while they are small, giving the trees the cultivation they need. Mr. Todd has tried mulching his orchard, and likes it, but care must be taken to clean the trash away from the trees in fall, to prevent injury by ground mice. Grow corn for perhaps four years, then plant to clover for several years; if soil is good, one crop of clover can be taken for hay, but if not, allow all to lie on the ground as mulch, keeping the soil clean around the tree.

"Science Applied With Profit" was the subject of a talk by C. H. Williamson, Quincy, Ill. Mr. Williamson would not plant an apple orchard on poor soil, but science teaches us that not all seemingly poor soils are really poor. Hillsides are generally to be preferred, but if good bottom lands can be found near running water, they will prove good locations for orchards, although late frosts sometimes do serious damage. Mr. Williamson, differing from Mr. Todd, does not believe corn among young trees is always best. He would grow not more than one corn crop, and then potatoes may be grown with profit. But clover in an orchard, hoeing about the young trees, is perhaps an ideal plan for handling an orchard, particularly where soils are apt to wash badly. Mr. Williamson does not believe that our Western orchards, planted in good soil, need cultivation every year; he would keep them in clover at least half the time, supplementing this fertilizing by the use of commercial fertilizers. He would have at least eight different varieties in his orchard, and believes in mixing the varieties in the planting.

Mr. Williamson told of a plan he had tried this season. When the cold, cloudy weather set in, he began cultivating a Jonathan orchard, while it was yet in bloom, and now these trees have a good set of fruit, while other trees are comparatively barren. He also tried this plan five years ago, with

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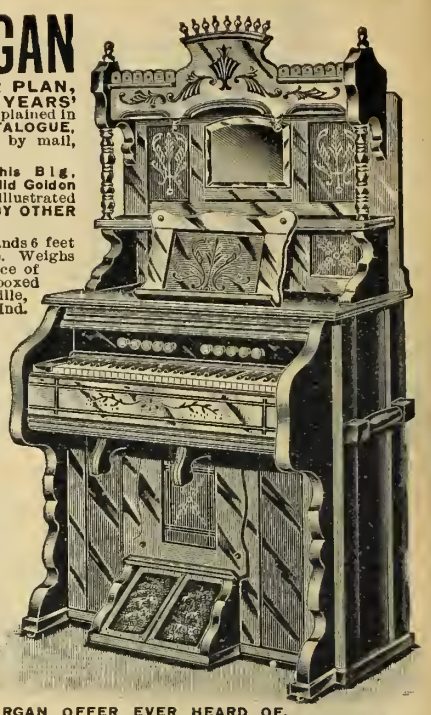

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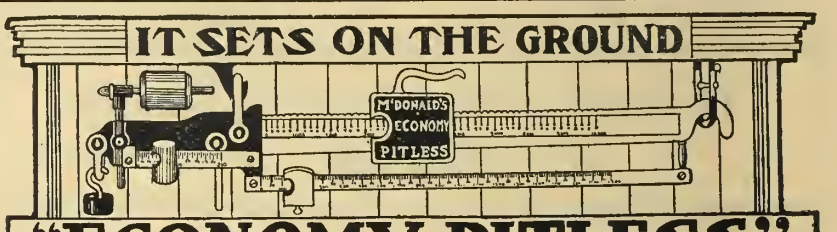

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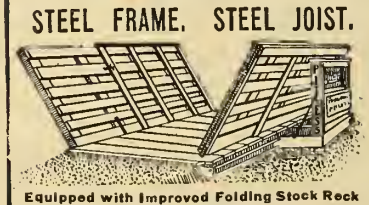

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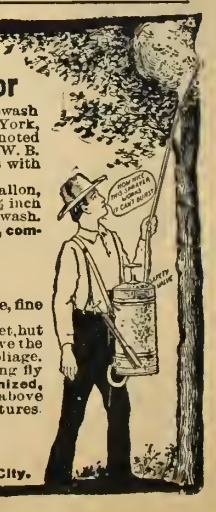

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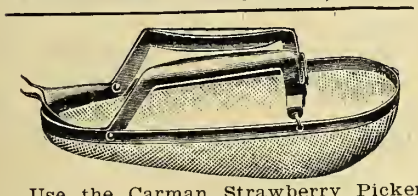

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same results. The speaker said he believes too much early spraying has been insisted upon; the spraying given just as the blossoms are falling is important, but those which follow in a week or so are not so important as the applications given later. The late sprays are very important, to check fungous diseases and insects which are at work at that time. Instead of Bordeaux mixture, he uses ammoniacal carbonate of copper as a fungicide in his later sprayings, as it does not discolor the fruit.

"We must be prepared to put money into our orchard work," said Mr. Williamson. "I have estimated that it will cost from $15 to $20 an acre to care for my orchard; this includes hoeing, spraying and fertilizing, the cost of commercial fertilizers alone being about $5 per acre."

A member asked when he would begin planting clover in a young orchard, and Mr. Williamson said he had grown potatoes two years, then planted clover, and had had good results. Some years he would take one crop of clover for hay, leaving the other crop on the ground; other seasons he would leave both crops. His eight varieties were asked for, and he said:

"Jonathan, Grimes Golden, Ben Davis, Winesap, Willow Twig, Wealthy, Maiden Blush, using the Missouri Pippin as a filler. I want to explain this list. Ben Davis ought to be grown on soil which contains plenty of potash; grown on this soil the Ben Davis is as good as the Baldwin for any purpose. Willow Twig trees should be starved; don't enrich them, for the trees will not stand it. Wealthy is a good apple and a money-maker; from 200 Wealthy trees I secured 1,100 barrels of good fruit."

Mr. Williamson was asked as to thinning apples, and he said he knew of no cheaper or more effective way than by spraying while the trees are in bloom.

Louis Erb, who is an apple grower in Missouri and a commission man in Tennessee, made an interesting and humorous talk on "The Apple Grower and the Apple Shipper."

Prof. Taft, who has charge of the judging of fruits at the World's Fair, told of the plan which is being followed in this work. He also touched upon the preparation of fruits for exhibition. He said the exhibit of preserved and cold storage fruits at the exposition is the grandest ever made, and yet not enough pains had been taken in preparing the exhibits. He had sample plates taken from the tables, one handsome and the fruit perfect, the other very indifferent. A mistaken idea is to get fruit of abnormal size; size is important, and yet not the most important. As a judge he would give a higher score to a plate of five apples of normal, uniform size, than to a plate of four apples of normal size and one overgrown, or even to a plate of five overgrown specimens.

"There are two methods of judging," said Prof. Taft, "one by comparison, the other by a score card. The former consists of comparing one plate with another, and is comparatively simple; the other requires the scoring of each plate, and requires more work and better judgment. We are using a score card in this work which is the result of a number of experiments. Some score cards which have been recommended allow a score of 30 points for quality; this is too high. The card we have adopted allows 15 points each for size, color, form and quality; 20 for freedom from blemishes, and 20 for size of exhibit. This latter allowance had to be made, else a single plate of fruit might score nearly perfect and thus win a grand prize. Accordingly we have reserved 20 points for size of exhibit, which will require that an exhibit be a large one, and a high-scoring one, to be entitled to a grand prize."

Thursday morning the subject of spraying was discussed in a general way. It was the consensus of opinion that on account of the continued rains spraying this season has not been satisfactory, whether the liquid or dust process is used.

Mr. Todd asked if pulverized copper sulphate mixed with powdered lime will not be as effective as a fungicide as liquid Bordeaux.

Prof. Howard said it would not; the liquid Bordeaux is a chemical union of the ingredients, the other purely a mechanical union.

It was then asked why the real Bordeaux mixture will not be formed when the dew falls upon the powdered copper sulphate and lime on the foliage.

Mr. Favor of the Missouri Experiment Station, who has charge of the spraying experiments this season, said results will depend on the lime used. If ground quick lime is used with powdered copper sulphate, Bordeaux mixture will be formed; but if air-slaked lime is used, the adding of water will not complete the formation of true Bordeaux mixture. To get ground quick lime is almost an impossibility, for air will reach the lime and it will lose its effectiveness.

Mr. Favor said some trees have been burned with the dust at the experiment station this season, much worse than with liquid. Both liquid and dust sprayed trees show scab, perhaps as much as unsprayed trees, but this has been an unusual season. The work of spraying will continue throughout the season, to try to hold the fungous in check.

Prof. Stedman talked on the subject of the injury to apples by plum curculio. A bulletin on this subject is in press, which will be published in The Fruit-Grower later in the season.

Mr. Teubner sent a paper on growing peaches along the Missouri River; he favored planting peaches on high, exposed points, and the Missouri River hills are especially suited to this planting.

Reports as to the peach crop varied. The crop is good along the line of the old Memphis Railway as far north as Olden; this side of there the fruit is almost entirely destroyed. North of the Missouri River there are locations where as much as half a crop is promised.

Henry Wallis of Bridgeton read a paper on "Varieties of Table Grapes." He recommended Moore's Early, Worden, Hicks, Niagara and Goethe as his first choice; a second list would include Campbell's Early, McPike, Moore's Diamond and Stark-Star. Moore's Early requires good soil; Worden is excellent, but sometimes ripens unevenly; Hicks is a week earlier than Concord and is better than Worden. Niagara, though not of highest quality, is a good looking grape, and is as good as California grapes. Goethe is a little tender, but a good one. Campbell's Early is good, although not so good as has been claimed for it. McPike is good and may succeed Moore's Early, but one must be careful to get the true McPike. Stark-Star is late, but will ripen as far north as St. Louis, and perhaps farther north; it must be well ripened; ought to be a good wine grape, as it is a cross between Norton's Virginia and Catawba.

Mr. Wallis was asked if this is the proper season for layering grape vines. In reply he said it would have been better to have layered last year's canes early in the season. Now, however, the work can be done, layering these canes, leaving the new growth to appear above the soil; roots will be formed where these new shoots start from the cane, and will make good plants.

Dr. J. C. Whitten recommended some native Missouri shrubs for cultivation, and was followed by Prof. Irish of the Missouri Botanical Gardens, who recommended some hardy perennials and some of the best annuals for decorative effect.

Mr. Widman talked on the destruction of birds, and Mr. W. J. Blakely of the Audubon Society discussed needed legislation for the protection of these friends of the fruit-grower and farmer.

The committee on awards reported the list of premium-winners in the strawberry show. The premiums were won by W. E. Bower, Monett, Mo.; A. T. Nelson, Lebanon; H. W. Jenkins, Boonville, E. S. Katherman, Warrensburg; Charles Steiman, Dalton; Henry Schnell, Glasgow; J. E. Hall, Warrensburg; Henry Crecelius, Mehlville; A. J. Russell, Butterfield.

The committee on final resolutions submitted its report, complimenting the exposition upon the splendid horticultural exhibits, congratulating Messrs. Taylor and Stinson upon their work, and thanking Superintendent Goodman for the good showing made of Missouri fruits. The resolutions also congratulated H. J. Waters and those who have been associated with him in preparing the Missouri exhibit in the Agricultural Building, and concluded by urging every citizen of Missouri to attend the fair to see the Missouri horticultural and agricultural exhibits, if for no other reason.

The last item on the program was the adoption of the report of the com-

(Continued on Page 6.)

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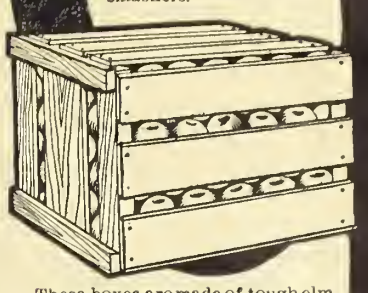

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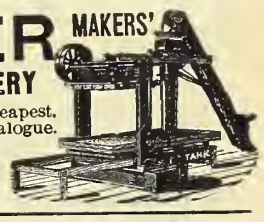

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New Method of Making Dry Bordeaux Mixture

By Wilmon Newell, State Entomologist of Georgia.

While undertaking recently, some preliminary experiences in the testing of the dusting method for applying fungicides, in comparison with the liquid spraying, we were struck with the unsatisfactory and somewhat laborious methods of applying copper compounds in the dust form. Especially did we find the methods of preparing "dry Bordeaux" unsatisfactory, and in dealing with the various methods recommended we believe we have found a comparatively simple method of preparing the dry Bordeaux, whereby, with a minimum amount of work, a dust of the proper chemical composition and having the necessary and desirable physical characteristics can be prepared by any one. This method will be given below, together with the steps which led up to its development. It is not the writer's object, however, to unqualifiedly endorse dust spraying or to make any claims for the effectiveness against fungi of the compound here described, or for any other compound. Our experiments have not yet proceeded far enough for us to draw reliable conclusions. This method of making dry Bordeaux is submitted for the use of those who are advocates of dusting with Bordeaux mixture, as being a method that will give them exactly the compound they are after, at a minimum cost.

The preparation of "dry Bordeaux" mixtures, heretofore seems mainly to have been by one of three methods, the first being that of mixing finely powdered copper sulphate with lime dust and spraying this upon the trees, depending upon rain or dew to furnish the moisture for dissolving both the sulphate and the lime to form copper hydroxide or Bordeaux. This method is highly advocated by certain manufacturers of dusting machinery, and there are possibilities of successfully developing it. In our experience with it thus far upon peach foliage, using copper sulphate sifted through screen running eighty meshes to the inch, the shot-holing of the leaves has been much more severe with one application than with five applications of the liquid Bordeaux mixture (made of 3 pounds copper sulphate and 9 pounds lime to 50 gallons of water.) Another disadvantage has been in the fact that one cannot buy finely powdered copper sulphate—at least, we have not been able to secure it after several weeks correspondence with wholesale drug houses in New York and other eastern cities. One has to powder his own sulphate, by laborious grinding, and even after being prepared the fine powder tends to again segregate, so that it has to be re-ground or at least re-sifted just before using. By sifting through a screen running 100 or perhaps 125 meshes to the inch, it may be possible to use the powdered copper sulphate in this way, but the difference n effect of applying the mixture when there is dew upon the foliage, and applying it to dry foliage, must be carefully studied. Our own experience indicates that there is less tendency to shot-holing when this dry mixture is applied to the foliage when the latter is damp, than when applied to the dry foliage and a dew follows afterwards.

The second method may be referred to as the Maxwell method, and was, we believe, first described by Mr. W. D. Maxwell in the Proceedings of the Horticultural Society of Missouri. It is also referred to in the Country Gentleman of May 5, 1904 and has been mentioned from time to time in the Western Fruit-Grower and in the National Fruit-Grower. This method as we understand it, includes the slacking of stone-lime (making the dust) with a solution of copper sulphate. This method now seems to be decreasing in favor, as in slaking the lime in this way new compounds are secured aside from the copper hydroxide, which have little or no fungicidal value. This view is supported by Prof. J. M. Stedman (Country Gentleman, August 13, 1903), and by Dr. R. M. Bird (Western Fruit-Grower, March, 1904.)

The third method, that originated by Dr. R. M. Bird, is doubtless the most valuable method so far developed, and results in the production of the true copper hydroxide. It is described by the originator in Bulletin No. 60 of the Missouri Experiment Station—also described in the Country Gentleman of August 13, 1903, and the Western Fruit-Grower for March, 1904. Dr. Bird's method is doubtless familiar to the reader. Briefly stated his method is to dissolve 4 pounds of copper sulphate in 2 1-2 gallons of water, slake 4 pounds of lime with 2 1-2 gallons of water, and pour the two solutions together into a third vessel. The resulting compound, after straining through a cloth filter, is then mixed with lime dust mechanically (as with hoe or shovel), rubbed through a sieve at once, dried, and again sifted.

We object to Dr. Bird's method from three stand-points: First, the probability of having present certain copper compounds, other than the hydroxide when such concentrated solutions of bluestone and lime are brought together. Second, the amount of time and labor—especially the latter—in mixing, drying and sifting. Third, the physical condition of the completed product. In mixing together concentrated solutions of copper sulphate and lime, it seems extremely probable that other compounds besides the hydroxide are formed. Apropos of this it may be well to quote Lodeman (The Spraying of Plants, p. 126), who says that at least one other compound is sometimes formed, this compound being evidently a basic sulphate of copper or of copper and lime. Again, upon page 132 of the same work he states that the precipitate formed when concentrated solutions are used, is coarser than when dilute solutions are used. He recommends in making Bordeaux, a solution of copper sulphate not stronger than one pound to each two gallons of water, and thinks that even a more dilute solution "might be of benefit." If a basic sulphate of copper is present it can hardly be regarded as other than the result of imperfect decomposition of the Cu So 4, and really amounts to some of the original copper sulphate still remaining in the compound. Copper sulphate, we know, is readily soluble and is exceedingly injurious to foliage. We therefore prefer Bordeaux mixture (whether in liquid or dry form) which we are certain does not contain this "basic sulphate."

On the other hand it is to be taken for granted that Dr. Bird knows exactly what componds are formed when his concentrated solutions are brought together, and we do **not** wish to be interpreted as saying that his mixture contains any copper compound other than the hydroxide. However, his Bulletin (No. 60, Mo. Exp. Sta.), does not mention any analysis to determine this point and until Dr. Bird or some other competent chemist assures us that this concentrated mixture contains the hydroxide, and nothing more, we prefer to use more dilute preparations.

Now to the second objection. In preparing the dry Bordeaux according to Dr. Bird's plan, we found an endless amount of work and "muss" in mixing the wet Bordeaux paste with lime in a thorough manner, likewise much work in rubbing through a sieve. In spite of being placed in shallow boxes in direct sunlight and constantly stirred, it required nearly two whole days for it to get dry enough for use. In fact the actual labor alone in preparing the dry Bordeaux in this way cost us more than the total cost of making and applying the liquid Bordeaux, tree for tree. Of course it is maintained that this dry Bordeaux can be made during the winter "when the orchardist has nothing else to do." May be very true up north, but here in the South winter is with the fruit-grower a time of plowing, pruning, planting and spraying. Nor does the average Georgia fruit-grower do things on such a small scale that he can perform all these manual operations himself—with his own hands. His orchard is from 10,000 to a half million of trees, and labor costs money in winter as well as in summer.

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the copper compound is completely surrounded with a coating of lime. This cannot but follow when a wet material is mixed with a dry powder and then allowed to dry. It seems to us reasonable that this coating of lime about each minute particle of Bordeaux must tend to reduce its effectiveness against fungi—that this coating must first be taken off by dew, rain or wind, and that in the taking much of the Bordeaux will be taken from the tree.

With these difficultics in view, and in an attempt to overcome them, we prepared our dry Bordeaux mixture as follows: Six pounds of copper sulphate crystals were dissolved in 20 gallons of water. In another barrel 8 pounds of lime were slaked with a small amount of boiling hot water (hot water was used in order to secure a finer division of the lime particles and hence a more perfect milk of lime), and after slaking, diluted with cold water to make 20 gallons. These two solutions were then poured together into a third barrel and thoroughly stirred. This was allowed to settle while other work was being done. Eighteen hours later the precipitate had all settled to the bottom, when the clear liquid was carefully dipped off and the precipitate (settlings) poured into a sack of close-woven cotton sheeting. It was now suspended from a pole and allowed to drain for three hours. It was then spread out in a shallow (and tight) wooden box and placed in the sun to dry. When dry the substance is a very light blue, friable, and crumbles to a powder readily. In fact it can be easily reduced to an almost impalpable powder by merely rubbing between the hands. The dust is also very tenacious, adhering readily to even the cleanest and smoothest glass. In th's condition it is ready for diluting with the carrier (lime dust) in any proportion desired.

To avoid the possibility of extreme drying, heat, or changes of temperature making any difference in the mixture, it was left out of doors without rain falling on it, however), for ten days, at the end of which time we had it analyzed by Dr. Edgar Everhart, chemist of the Georgia Geological Survey. His analysis showed that all copper in the material was in the form of hydroxide. Very small amounts of calcium carbonate and of calcium sulphate were present, showing that the greater part of the calcium sulphate formed in the original reaction Cu So 4 x Ca (OH) 2—Co (OH) 2 x Ca So 4), had been washed out with the comparatively large amount of water used in making the milk of lime and copper sulphate solutions.

When made as above directed, 15.62 per cent of the whole weight of the dried product is copper hydroxide. This is equivalent to approximately 39.05 pounds of copper sulphate are required to make 15.62 pounds of copper hydroxide. Expressed in still another way, four-tenths of a pound is the "hydroxide equivalent" of one pound of copper sulphate.

We have not experimented with this mixture long enough yet to determine its real fungicidal value, or the proportion in which it should be mixed w'th lime dust before being applied. We should say, however, that if it is to be compared with the liquid Bordeaux, it should be so diluted as to deposit upon each tree of average size the same amount of copper hydrox'de (or copper sulphate equivalent, which is the same thing) as is deposited by a thorough spraying with the liquid Bordeaux to wh'ch it is being compared.

We believe that the method as above outlined has the following advantages over the method now in common use:

1. That copper hydroxide and no other copper compound is formed. Prof. S. M. Bain has shown (Bulletin of Univ. of Tenn. Exp. Sta. XV., No. 2), that injury to foliage from Bordeaux mixture evidently results from the copper hydroxide being dissolved by secretions of the plant cells. He has also shown (l. c.) that calcium carbonate and calcium hydroxide tend to retard or entirely prevent this injury, but that calcium sulphate will not do so. In the present compound we have the bulk of the lime in the form of hydroxide, which will tend to maintain the hydroxide condition of the copper. The first change which will naturally take place in this preparation, after being distributed upon the foliage, will be the absorption by the lime of carbonic acid gas (Co 2), from the air, resulting in the formation of calcium carbonate from the hydroxide, and eventually bicarbonate from the carbonate, but both the calcium hydroxide and carbonate, as shown above, tend to prevent the copper hydroxide from being dissolved. Hence, injury to foliage should be prevented.

2. That no rubbing through sieves is necessary, and no sifting at all is necessary except before applying, to prevent clogging the dusting machinery. Hence, saving of labor.

3. That instead of each minute particle of Bordeaux being surrounded by a coating of lime, the copper hydroxide is evenly and thoroughly incorporated with the lime, being as finely divided and in as perfect a mixture as it could be even in a liquid Bordeaux mixture.

In conclusion, the writer may add that he is perfectly willing to correspond with any one wishing to ask questions about any part of the above, or with any one who tries the method.

Atlanta, Ga., May 21, 1904.

Professor Newell sent us a sample of the dry Bordeaux, made as described by his process. It seemed to be in every way satisfactory, and when mixed with air-slaked or ground lime, to dilute it, the dust should be all that any dry Bordeaux should be. The sample which Prof. Newell sent us was in lump form, and would have to be crushed before mixing with lime dust. This lumping may have been caused by being placed in the box in which it was mailed while still wet. These lumps, however, are readily broken, and the mass is easily reduced to a powder.

The Fruit-Grower hopes that readers who are using the dry Bordeaux this year, made in different ways, will note results carefully and report results later.

Wash for Fruit Trees.

I herewith give the formula used by me very successfully to keep out borers and maintain smooth, healthy bark on fruit trees: Knowing that tobacco is a remedy for root and bud aphis, bark lice, etc., I boiled two pounds of strong tobacco in water and then dissolved, or slaked, two gallons of fresh lime in the decoction; then added, while still hot, two gallons of soft, wood-ash soap, four pounds of powdered sulphur and half a gallon of crude carbolic acid, stirring thoroughly and adding water until a thick whitewash is made. Apply with a stiff brush to the trunk of the tree, and about six inches up on the branches, being careful to remove the soil for about two inches deep about the base of the tree, also removing any borers which may be in the tree at time of making the application. Apply between May 1 and 15, during clear weather, so that the wash will have time to dry; it will then not wash off, and I do not believe any borer will deposit an egg where this preparation has been carefully applied. I have little trouble with borers, and the bark remains smooth and healthy. The wash also has a good effect on sunscald, with which I am no longer bothered; I wrap my trees with old newspapers in October or September, allowing them to remain until May.

Two years ago I began following the advice of The Fruit-Grower in spraying and banding my trees for codling moth. I used strips of an old horse blanket for bands, and my apples and pears were being literally riddled. I got as many as twenty-five larvae under one band, and in ten days there would be as many more. The second year five larvae was the highest number at any one time. I sprayed three times and banded for forty days. The second year I had no wormy pears and few wormy apples, and feel confident I have almost exterminated this pest.

Lone Jack, Mo. E. C. ALLEN.

When you sell fruit of any kind this season, just remember The Fruit-Grower and renew your subscription if your time is out. Then Brother Jonathan will appreciate your prosperity and rejoice with you. Don't forget this when your returns are received.

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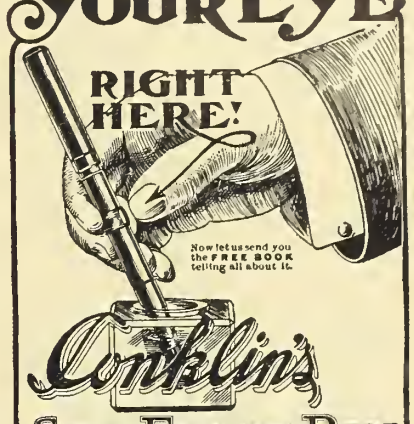

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Missouri Horticultural Society Meeting

(Continued from Page 3.)

mittee appointed to examine the report of the treasurer, and this occasioned quite a row. When the report of the treasurer was read, on the first day of the session, it showed an item of $72 received from Secretary Goodman, but the statement did not show the original source of the money. Mr. Eugene Stark asked Treasurer Gano where the money came from, from what fund, and the treasurer replied that he did not know. At that time Mr. Stark asked Mr. Gano if his report as submitted covered all the funds of the society in his hands, and he said it did. Mr. Stark further asked Mr. Gano if he knew of any other funds belonging to the society, which were not in his possession, and he said he did not. When the report of the finance committee was submitted, approving the report of the treasurer, Mr. Stark asked for further information along this line.

The discussion of this matter was the warmest which has taken place in the Missouri Society for many years, in the course of which many charges and counter charges were made. This discussion brought out the fact that the $72 item referred to a remittance of this amount from the Maryland Horticultural Society, covering the expenses of Mr. Goodman, who attended the meeting of that society in December, 1902. The expenses of Mr. Goodman were at first paid by the Missouri Society, but in January, 1903, the Maryland Society refunded the money. This money was turned over to Mr. Gano, as treasurer, in January, 1904, and Mr. Goodman explained that the money had been used last year when, as superintendent of Missouri's horticultural exhibit, he had been compelled to advance money to buy fruit, etc. The state appropriation for making this exhibit was not available, he said, until receipted bills were presented for all items of expense. Therefore he was compelled to advance the money from his own pocket to pay these bills, and later was reimbursed from the appropriation for the World's Fair exhibit. In this work he had used this $72, he said, but had finally turned it over to Mr. Gano, as treasurer of the Missouri Society, in January, 1904, over a year after it had been received from the Maryland Society.

The fact was also brought out that besides the sum reported in Mr. Gano's hands, the society had $1,092 on deposit at the Mississippi Valley Trust Co., St. Louis, less $100 for desk and chairs which had been purchased for the secretary's headquarters in the Missouri horticultural exhibit. This fund, it was stated, has not been regularly reported, and few members knew of its existence. It was collected from various sources Mr. Goodman said, and runs back over a period of years. It was withdrawn from the regular treasury of the society and kept in a separate fund, to be used in an emergency to prepare exhibits of fruit, etc. No money has been drawn from it, he said, for many years, except the $100 referred to.

Mr. Stark did not openly charge that the funds of the society have been misappropriated; but he stated that the constitution of the society requires that the funds of the society be kept in the hands of the treasurer, who is under bond for its safe-keeping, and that the only safe thing to do was to see that all funds are kept there, and paid out only on warrants properly signed by the secretary and president of the society. He further made the point that the books of the secretary and treasurer should show the source of every cent which comes into the treasury of the society; if this had been done, there would have been no trouble concerning the item of $72 early in the session.

The discussion of the whole matter brought out the fact that the books of the society have not been kept in the most business-like manner, and that the constitutlou of the society has not been strictly followed. This was thought by the members to be bad policy, to say the least, for while every confidence may be imposed in the integrity of the present officers, it was thought best to change the methods, so that there will be no objection on this score. Accordingly, Mr. Dutcher introduced the following resolution, which was adopted:

"Moved, that while we have implicit confidence in the integrity and honesty of our secretary, Mr. L. A. Goodman, and our outgoing treasurer, Mr. W. G. Gano, in the handling of the funds of our society, and that the reports of the financial committee show not the loss or misappropriation of a single dollar, we recommend such a change in the method of keeping the accounts that the books of the treasurer shall show more clearly the source of all receipts, that every dollar shall pass through the hands of the treasurer and that the present system of balances be discontinued."

Mr. Stark offered a motion for the appointment of a committee of three to investigate the fund of the society which was brought to light at the meeting, to report from what sources the fund had been obtained, and when additions to the fund had been made; to ascertain what expenditures had been made from this fund, by whom made, for what purposes, etc.; also, that this special committee have authority to at once secure this fund and turn it over to the treasurer of the society, who, under the constitution is the rightful custodian of the same. This motion was adopted, and the last session of the meeting adjourned.

The Missouri Horticultural Society Muddle.

In the report of the summer meeting of this society an account is given of the investigation 'nto the finances of the society. The St. Louis daily papers have published sensational articles along this line, and for the benefit of members of the society who were not present, The Fruit-Grower wishes to offer a word of explanation. No charges of actual misappropriation of funds were made, but some of the methods of the secretary were criticized most severely. Nor were other members of the executive committee entirely free from blame in the matter, particularly in regard to the handling of a fund of the society which was brought to light during the discussion.

The whole trouble, we believe is due to lax business methods, more than to anything else. The report shows that funds have not been turned over to the treasurer promptly, as Mr. Goodman admitted should have been done, but the treasurer's report shows that the money finally reached his hands.

In regard to the special fund on deposit with the Mississippi Valley Trust Company, this fund should have been in the hands of the treasurer, who is bonded for its safe-keeping, and it should have been reported by that official in his regular report. The treasurer's report, however, did not include this sum, nor was the sum mentioned in the treasurer's report at either of the meetings in 1902. And when Treasurer Gano was asked at the St. Louis meeting if there were other funds than those included in his report, he replied that he knew of none. And the fact that this is a fund of the society, and members were entitled to know as to ts condition, was a cause for critcism. The matter was finally brought out, but under conditions which were not entirely satisfactory.

A committee was appointed to investigate this fund, and to report upon the additions which have been made to it from time to time, and the withdrawals; also as to who has been the custodian of the fund, and who has drawn warrants upon the same. The fact that the fund was not in the hands of the treasurer led to the adoption of this motion, so that the full facts will be brought out later.

The Fruit-Grower has investigated the fund in the reports of the society, and finds that in December, 1900, Treasurer Nelson reported that there was a fund in his hands amounting to $1,179.32, which fund was made up principally of premium money received by the society at the World's Fair, Chicago, at the St. Louis Exposition in 1894 and 1895, and at the Omaha Exposition. By direction of the executive committee, $1,000 of this money was deposited with the Mississippi Valley Trust Co., St. Louis, at 4 per cent interest. In December, 1901, after the death of Treasurer Nelson, the finance committee reported that this fund in the trust company had amounted to $1,071.20, on July 17, 1901.

In the report of the treasurer for 1902 no mention is made of the fund in any way, nor is there anything to show that it was turned over to the new treasurer, Mr. Gano. Neither did the treasurer's report for 1903, as submitted last December, show this fund, although a notation is added, presumably by the finance committee, that "the society also has on deposit in the Mississippi Valley Trust Co., at St. Louis, $992.62, and accrued interest."

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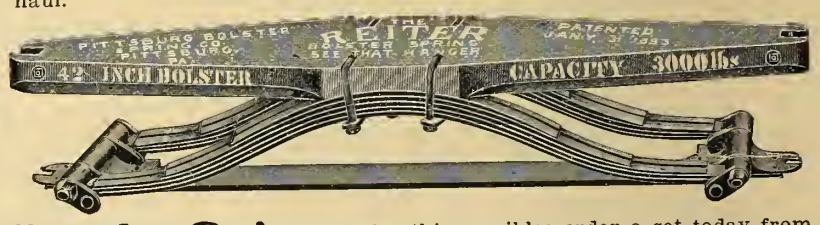

Let the Reiter make this possible; order a set today from your dealer or direct, giving distance between Bolster Stakes and about the weight of load you usually haul. Costs from $4.00 to $8.00 per set. Saves in dollars and cents alone four or five times the cost every year and will last for years. The Reiter embodies Bolster Spring perfection. Manufactured exclusively by

Pittsburg Bolster Spring Co.

Box 1083, Pittsburg, Pa.

The Royal Fruit Picker

—— PATENTED JULY 22, 1902 ——

Is adapted to picking apples, peaches, pears and the smaller fruits. It is an ABSOLUTE SUCCESS, and is the only Picker that picks with satisfaction. The elastic steel fingers close like the human hand by pulling a cord that runs through eyelets at the top, and open when the cord is relaxed. You stand on the ground and pick the fruits from the top of the tree. The Picker holds a dozen or more apples, peaches, or pears, thus saving time in emptying. The screen is no longer used, as it has demonstrated that the fruit is not bruised without it.

I will send a sample Picker where I have no agents, express prepaid, for $1.25.

Write for particulars how to secure exclusive control of the sale of the Picker in one or more counties for fifteen years. Agents wanted to sell territory and the Picker. Can make from $5 to $10 per day. Address

W. S. Morgan, Hardy, Ark.

Messick Tree Fertilizer—Liquid Form

Prevents trees from becoming bark-bound. Prevents Borers from entering trees. Prevents Rabbits from destroying trees. Destroys all insects on body of tree. Adds to growth of young trees, causes heavy and healthy foliage, and increases yield of fruit.

1 Gallon .....$1.50 6 Gallons $7.20

MESSICK TREE FERTILIZER CO., Quincy, Ill.

ONLY
$21.95
Farmer's
Handy Wagon

Only 25 inches high. Steel Wheels, 4 inch Tires. Carries any load two horses can pull.

We furnish any size steel wheels, of any width, for any axle. Catalogue free.
Empire Mfg. Co., Box 110C Quincy, Ill.

You Want a TELEPHONE

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FROM OFFICE TO WAREHOUSE
FROM OFFICE TO SHIPPING ROOM
FRM RESIDENCE TO BARN
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FROM LIVING ROOM TO KITCHEN
FROM FATHER'S TO SON'S HOUSE

No. 60. Telephone Price, each $4.50. Iron wire No. 14, $3.75 per mile. Good for three miles, 4 on single wire.

No. 50. Telephone Price, each $3.00. Good for 600 feet. Use two copper wires. Ask prices on 'Phones for Farmers' Lines. Address Farr Telephone and Construction Supply Co., Department M., 120 W. Jaxon Bldg., Chicago.

The Bottomless Fruit Bag

saves labor, hard work; can pick the fruit in same time Circulars and prices of the General Agent,
E. G. Mendenhall
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Get sample early so yau can order in time what you will want. Send for Circulars of Cutaway Harrows

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Seymour, Mo.
W. S. GENTRY, Proprietor.
Grower of and Wholesale Dealer in
American Ginseng, Seeds and Roots

Choice Water Tested Seed for Sale. Write for prices on Cultivated and Wild Roots.

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GINSENG SEEDS AND ROOTS. Prices low, 50 cent book on Culture and Profits on Ginseng **FREE.** Send for it.
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GINSENG Fortunes in this plant. Easily grown. Roots and seeds for sale. Room in your garden. Plant in Fall. Booklet and Magazine 4c.
OZARK GINSENG CO., Dept. P8, Joplin, Mo.

AMERICAN GINSENG

Water-tested seed of 1904. Roots of all sizes. Guaranteed strictly American. Write for prices and circulars.
A. GAGE, Seymour, Mo.

To the Nursery & Seed Trade

You should push to the whole trade of Australia, South Africa and New Zealand, in fact to the whole trade of the Southern hemlsphere, by advertising in
THE AUSTRALIAN NURSERYMAN, SEEDSMAN and FLORIST.
Head Office, 195 Collins Street,
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3,000,000 JUNE BUD PEACH TREES

Budded from prolific bearing trees. We are exclusive wholesaie, and sell direct to planters at wholesale prices. You can save money by buying from us. Trees guaranteed true to name and free from all diseases. State Entomologist's certificate with each shipment. Write for prices.
FLETCHER & HARRISON, Nurserymen and Orchardists, Cleveland, Tenn.

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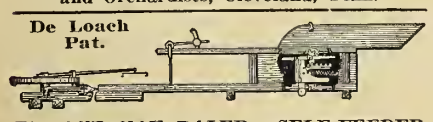


TRIPLET HAY BALER.. SELF-FEEDER. Low in Price.. For Hand, Horse or Belt Power. Leverage 40 to 1. Bales quicker, easier and more solid than any other. Also Grinding Mills, Water Wheels, Saw Mills, etc. Cat. Free. **DE LOACH MILL MFG. CO.** New York. **Box 939 Atlanta, Ga.** St. Louis

BERRY GROWERS Why not use our Pickers' Tally Tickets, with your name and address on them. Samples and prices for the asking. Address
THOMPSON, "The Printer," R. F. D. No. 6, Oswego, N. Y.

OUR SPECIALTIES

APPLE, PEAR and FOREST TREE SEEDLINGS. APPLE and PEAR GRAFTS for the planter as well as the nursery trade, also a FINE GENERAL STOCK OF TREES AND PLANTS at very favorable prices. Get our prices. General catalogue on application.—J. A. GAGE, Beatrice, Neb.

in any of the reports of the treasurer, where any withdrawals have been made from this fund, which, on July 17, 1901, amounted to $1,071.20, and which, two and a half years later amounted to $992.62, or a loss of $78.58, whereas, with the fund at interest of 4 per cent, there should have been a good increase.

While this matter will likely be explained to the committee which will investigate the fund, one can readily see how there has been complaint at the way the reports have been made. The executive officers may have known the condition of the fund—although some of them say they did not—but the members of the society were entitled to know it, and, besides, good business management would require that regular reports be made. No business house would have conducted its affairs in this way, nor should the society officials have conducted the society's business in this manner.

The resolution which was adopted will change this condition of affairs. It requires that this special fund be at once placed in the hands of the treasurer of the society, who is the proper custodian of the same, and who will of course make report as to its condition when he submits his regular reports of the society. A committee will investigate the history of the fund, from its beginning down to the present date, and will report later. It is to be hoped, for the benefit of the officers involved, and for the good of the society generally, that this committee will investigate the matter fully, and that hereafter the books of the society will be kept in a proper manner and regular reports submitted, so that the members shall all know of the condition of the funds, and that there shall be no more complaint.

First and Third Tuesday of Eaeh Month.

The Chicago Great Western Railway will sell Homeseekers Tickets at one fare plus $2.00 to points in Alabama, Arkansas, Colorado, Florida, Georgia, Kansas, Kentucky, Louisiana, Mexico, Mississippi, Missouri, Nebraska, New Mexico, North Carolina, Oklahoma, Tennessee, Texas, Utah, Virginia and Wyoming. For further information apply to M. F. Montgomery, City Passenger and Ticket Agent, 414 Felix St., St. Joseph, Mo.

Hauling Manure to Garden.

Dear Sir:—While I may not have done anything very smart, yet I have solved a problem satisfactorily to myself that has been a trouble for several years, namely, to get the manure from my barn or cow stables out to my small fruit with the least amount of labor.

I built a "stone boat" 3 feet wide by 8 feet long and sides 12 inches deep, slant for front end 6 inches high and running back 2 feet, back end 2 1-2 inches high and running forward 2 feet. This leaves about 4 feet straight on the bottom. The bottom is made of 1-inch fencing; on the outside of bottom are nailed 2x6-in. pieces flat to serve as runners and set in 6 inches from the sides. A small piece of trace chain is fastened permanently to each forward corner, with a hook in the end, so it is always ready to hitch on to with any kind of harness. This "stone boat" is placed where my manure pile used to be and when filled from cleaning out the barn is hauled out right to the place where I want to use it. I have received so many suggestions from your valuable paper I thought I might reciprocate.

B. F. C.

Keokuk, Iowa.

Homeseekers Excursions.

The Chicago Great Western Railway will on the first and third Tuesdays up to October 18, sell tickets to points in Alberta, Arizona, Assiniboia, Canadian Northwest, Colorado, Indian Territory, Iowa, Kansas Minnesota, Missouri, Nebraska, New Mexico, North Dakota, Oklahoma, Saskatchawan, Texas, Utah and Wyoming. For further information apply to M. F. Montgomery, City Passenger and Ticket Agent, 414 Felix St., St. Joseph, Mo.

The Royal Fruit Picker.

It has been observed by all fruit-growers that often the very best specimens of fruits grow in the highest and most inaccessible parts of the trees How to get these fruits is a question. Mr. W. S. Morgan, of Hardy, Ark., appreciating this condition, has perfected a fruit picker which will secure these choice fruits without bruising or injuring them in any way. Mr. Morgan is a practical fruit-grower, and his picker has been devised with a knowledge of what is needed by practical growers. Mr. Morgan calls his picker the Royal Fruit Picker, and advertises the same elsewhere in this issue of The Fruit-Grower. Look up this advertisement and write W. S. Morgan, Hardy, Ark., for any further information, mentioning The Fruit Grower when you write.

Cheap Round Trip Rates for Vacation Trips

From St. Joseph, Mo. via Chicago Great Western Railway., $15.00 to St. Paul or Minneapolis, $19.00 to Duluth, Superior, Ashland or Bayfield. Equally low rates to Summer Resorts in Minnesota and Michigan. Tickets on sale every day to September 30, good to return until October 31st. For further information apply to M. F. Montgomery, C. T. A., 414 Felix St., St. Joseph, Mo.

Cutaway Harrows.

E. G. Mendenhall, general western agent for Clark's Cutaway Orchard and Farm Tools (Cutaway the Mortgage), reports a splendid trade this season, and every one well pleased at the good results received from using the tools and the extreme simplicity of them.

Mr. Mendenhall is also eastern agent (east of the Rockies), for the best apple picking bag ever made and has been used in California for years in the orange and lemon business. Don't wait to get on to this wonderful device, double the work done and no bruising. Send for a circular at once or a sample for $1.25 and see for yourself. So you can order in time to have on hand when needed; equally good for pears.

Cheap Round Trip Rates for Vacation Trips. From St. Joseph, Mo., Via Chicago Great Western Railway.

$15.00 to St. Paul or Minneapolis, $19.00 to Duluth, Superior, Ashland or Bayfield. Equally low rates to summer resorts in Minnesota and Michigan. Tickets on sale every day to September 30th. Good to return until October 31st. For further information apply to M. F. Montgomery, C. T. A., 414 Felix st., St. Joseph, Mo.

The advertisement or the Pure Culture Spawn Co. appears in this issue for the first time. They invite the attention of all mushroom growers to their new "Tissue Culture Pure Spawn" grown after improved methods fully described in their interesting circular on the origin, history, and improvement of "Mushroom Spawns."

OUR FREE PAINT SAMPLE OFFER

Cut this ad. out and mail to us, and we will send you **FREE** by return mail, postpaid, our **Big New Paint Color Sample Book.** This free book contains samples showing the **exact color** of every shade of ready mixed **House, Barn, Graphite-Creosote, Floor, Roof, Mineral, Enamel and Buggy Paint,** also everything in paint and painters' supplies, including **oils, lead, varnishes, dry colors, stains, brushes, sundries, etc. The free book contains a big fund of information on how to paint,** how to select colors, kind of paint to use for different work, just how much paint is required to cover a given space, makes everything so plain that anyone without previous experience can do almost any job of painting. **The free book shows a number of buildings in colors,** intended to aid you in selecting colors for body, trimming, inside, etc.

50c PER GALLON for highest grade Seroco Weather-proof MINERAL, BARN, ROOF and FENCE PAINT.

85c PER GALLON for highest grade ready mixed house paint, our Seroco, our own special ready mixed paint for houses, for wood, brick, stone or iron surfaces, for finest inside finish or coarsest outside work, is sold under our **binding guarantee as the best paint made,** will cover double the surface, last twice as long, at one-half the cost of other paint, never cracks, peels or blisters, **guaranteed for five years,** and will look better at the end of five years than other paint will after one year. Testimonials from painters everywhere and color samples of Seroco in our free color sample book. **IF YOU WANT TO PAINT YOUR HOUSE, BARN OR OTHER BUILDINGS,** don't fail to get this **FREE PAINT SAMPLE BOOK and SAVE ONE-HALF ON THE PAINT YOU NEED.**

Address, **SEARS, ROEBUCK & CO., CHICAGO, ILLINOIS.**

Sandusky & Co.

General Commission

116 South Third Street and 115 Market Square **St. Joseph, Mo.**

Wholesale Fruits and Produce
Berries a Specialty

Dealers in Berry Box Material, Grape Baskets, Egg Case Material. All kinds of Baskets in stock. Established 1864.

A Good Market. **None Better**

COYNE BROS.

Commission Merchants
161 Sonth Water Street, CHICAGO

Solicit Consignments of all Kinds of FRUIT AND PRODUCE

References: Mercantile Agencies; Corn Exchange National Bank, Chicago.

WE WANT
Watermelons

When will you begin shipping? Write us at once.

Frank C. Schilling

Green Bay, Wis.

Prompt **Safe.** **Conservative.**

WANTED IN CAR LOTS
Peaches, Tomatoes
CABBAGE, ONIONS, MELONS

Correspondence from shippers' and associations solicited. References furnished upon application.

The Callender-Vanderhoof Company
General Commission Merchants Minneapolis, Minn.

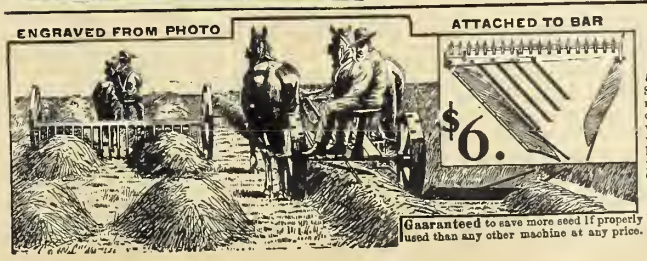
Budders Wanted

For our Nurseries at Farmington, Washington County, Arkansas. Long season. Address
STARK BROTHERS, Farmington, Ark. or Louisiana, Mo.

Apple Barrels

Cider and Sorghum Barrels and Kegs. Write for prices

J. A. Schroer & Co. St. Joseph, Mo.



BUNCHER AND SEED SAVER

Saves cost on one acre. Fits any mower. Moves left side of swath out, placing it between horses and wheels, (no tramping out seed) and when raked is left in forkfule with heads in the center, the best way possible to save the seed. Made for clover, alfalfa, flax, oats, cowpeas.

Price complete $6.
Agents Wanted.

Guaranteed to save more seed if properly used than any other machine at any price.

W. I. Short Mfg. Co.
Box 165 Quincy, Ill.

THE WESTERN
FRUIT-GROWER
ST. JOSEPH MISSOURI

Address all Communications and make Remittances Payable to "The Fruit-Grower Company," Seventh and Charles Streets, St. Joseph, Mo.

W. G. Campbell, Jr., General Manager. James M. Irvine, Managing Editor

Advertising Rate—Per Agate Line, 15 Cents. Fourteen Lines to the Inch.

No advertisement in class generally termed "objectionable" received under any conditions. Editions mailed on 15th; Forms close on 10th; i. e., January forms close January 10th, etc.

Subscription—One year, 50c; 3 years in advance, $1. Foreign Countries, $1.

Remit by U. S. Coin, Postoffice Money Order, Express Money Order, Registered Letter or Bank Draft. Send stamps only as last resort. All remittances at our risk.

Unless otherwise ordered, subscriptions will commence with month following date of remittance, and continue until ordered stopped and arrearages paid. If you desire paper to stop when time is up, notify us. The letter "S" after date on your address tag signifies that paper will stop on that date. The address tag stands as a receipt for your remittance.

In compiling a list of over Thirty Thousand subscribers it is an easy matter to make mistakes, but we guarantee fair treatment to everyone. If you find an error in your address tag, or do not receive paper promptly, write us and we will trace matter up at once.

Entered as Second-Class Matter in the Postoffice at Saint Joseph, Missouri

Volume 15 ST. JOSEPH, MO., JUNE 15, 1904. Number 6

A Fruit-Grower subscriber living in Florida writes as follows: "If circumstances and conditions do not prevent, I wish you would give us an editorial on the prospects for the peach grower for the next ten or fifteen years. That is to say, the financial prospects; whether peach growing will be a profitable business or not."

The Fruit-Grower hardly feels competent to forecast the experience of peach growers for the next ten or fifteen years. Too many things enter into the matter. We do not think, however, that the American people have reached the limit of consumption of good peaches—nor have they reached the limit of their ability to buy this fruit. Heretofore the chief trouble has been to get the fruit properly distributed when there was a large crop. There are those who think peaches are now being over-planted, simply because this fruit has to be marketed in carlots, and therefore many of the smaller cities and towns have to be neglected. Some system must be devised to reach these neglected markets, and once this is done, the entire peach crop can be handled profitably. It is likely true that the Elberta is being too largely planted, because the market will be flooded while the Elberta season is on, and will be bare before and after its season. On the whole, in answer to the question asked, we would say that whether peach growing for the next ten or fifteen years will be profitable depends on the man—whether he is able to grow good fruit, whether he is able to properly pack and market it. The demand will likely be here, but not every man can meet this demand.

The question of apple barrels is agitating the minds of those who hope for an apple crop this season, for they do not want to get caught as the New York growers were last fall. In Northwest Missouri growers are already placing orders for at least a portion of the barrels they expect to need. Coopers are encouraging this action on the part of the growers, for, as a rule, coopers have not room to store large quantities of barrels, but by selling at least a portion of the barrels the growers will need, they can keep their forces at work all summer, and the farmers can store the barrels in barns, etc. The matter is a very important one, and deserves the attention of everyone whose orchard promises a crop. Even though growers may contemplate selling their fruit on the trees, to be picked and packed by the buyer, a supply of barrels should be laid in early, for the man who buys the crop will be only too glad to take the barrels at not less than was paid for them originally. And, too, it frequently happens that if the grower has a stock of barrels on hand he can sell his fruit where otherwise he might fail. This happened in Northwest Missouri a year or so ago. Buyers were unable to get barrels at any price, yet if the growers had laid in a supply early in the season, the buyers would have been only too glad to get the fruit and the packages. Prices will rule lower earlier in the season. Coopers report that stock seems to be a little more plentiful this year than a year ago, but that prices are well maintained. Opening prices for barrels are expected to be around 33 or 35 cents for good barrels, but these prices will not hold good after the rush opens later in the season.

If the apple crop which was promised early in the season matures, there will be a great scarcity of storage space for this fruit next fall. Eastern states have plenty of storage room, but this will scarcely help the Western growers who want to put apples in cold storage. But the shortage of storage space should at least do one thing: It should induce packers to put only the very best fruit in storage, leaving the inferior fruit to be worked off early in the season, or made up in vinegar, evaporated apples, etc.

Old Uncle Ben Davis is now getting the hardest roast he has ever received, and it is from those who have stood up for him in the past, too. It must grieve the old man to see his old friends go back on him—but it is perhaps only temporary. Disgusted with old Ben's poor quality? No, not that. It is because Ben Davis trees in some of the states in "the Ben Davis country" promise such a light yield of fruit. Truly Ben Davis has been a little off for several years in a great many places.

Were your strawberries smaller this year than they were a year ago? Was it not due to the fact that last year frost killed many of the blossoms? Of course it may not be practicable to thin strawberries every year, but you can at least do this: Give each plant more room and more sunshine, and the fruit will have a better chance to develop. Many of the berries on market this year show that they were overcrowded, and did not bring the prices which better-sized and better-quality fruit would have brought.

The July issue of The Fruit-Grower will contain full report of the meeting of American Association of Nurserymen, to be held at Atlanta, Ga., the latter part of this month; also an account of the trip through the peach orchards of Georgia which will be taken by those who attend this convention. Among other orchards to be visited will be those of J. H. Hale, Berckmans Company and others, and the trip will be most interesting and helpful—and we will tell about it next month.

In some states a great row has been stirred up because of what is called "police work" which must be done by persons connected with the state agricultural colleges. Particularly is this true in New York, where the Geneva Experiment Station has been subjected to all manner of abuse from the friends of a certain fertilizer company. The law of New York requires that fertilizers which are sold in that state shall be marked as to their fertilizing qualities, and frequent tests must be made by the experiment station officials to determine whether or not the fertilizers are up to the required standard. Samples of a certain fertilizer made by a New York firm were secured, which, upon analysis, proved to be deficient in certain respects. Attention of the attorney-general was called to this condition, and the fertilizer company paid a fine, to save "unwarranted publicity." The experiment station officials were simply performing their duties under the law, and yet a fight was made on the Geneva Station when the appropriation bills come up in the legislature, by friends of the fertilizer company, who are very influential people. It is suggested that the better way to handle this matter is to place this work in charge of the state agricultural department, and then no fight could be made on the colleges through the legislature. In some other states the same condition has occurred through the inspection of nurseries by the entomologists of the agricultural colleges. If, in the exercise of his duties, the entomologist declines to issue a certificate of inspection to certain nurseries, because of some insect or disease which is prevalent in the nursery, the friends of the nurseries from whom certificates were refused, will fight the agricultural college in every way. By taking this police work from the hands of the colleges it is believed the danger of injury to the schools would be much less. Of course if all men had backbone enough to stand behind and support an official who does his full duty, regardless of who was hurt, there would be no need of any action of this kind. But, alas! not all men have enough backbone to do this; a great many of the men sent to our state legislatures have hardly sufficient backbone to stand upright.

How to Kill Canker Worms.

Recently Wm. J. Henry, Lowemont, Kan., sent us a list of five new subscribers, and said they were all large fruit-growers and had never seen The Fruit-Grower until he showed them a March issue, and they all subscribed, because they appreciated the articles on the subject of spraying. Mr. Henry adds: "I did not find but one man who would not subscribe, and he said he did not need any information regarding the canker worms, as he 'killed them with a stick!'"

To be sure! Why not with a stick? Or why not use the remedy proposed for the codling moth? Every hear of the use of brick dust to kill codling moth? Simplest thing in the world. Pound a soft brick to a fine powder, and then, acording to this method, you proceed as follows: Take a pinch of the dust between the thumb and forefinger of the left hand and a broomstraw in the right hand. Approach the codling mouth carefully, and with the straw tickle him under the ribs until he laughs heartily, and then when he has his mouth wide open, throw the pinch of dust in his mouth and strangle him. Very simple thing.

If this gentleman cannot kill the canker worms with a stick, we would recommend this remedy. But Mr. Henry says there was only one of this kind in the neighborhood. In regard to the March issue Mr. Henry says: "It was the best paper I ever read. The information in that one paper was worth more than the subscription price. The truest logic I ever heard on spraying and canker worms was brought forth in that article."

Peach Leaf Curl.

Much complaint has been made this spring of injury to peach trees by peach leaf curl. Not in many years has the disease been so prevalent in the Missouri River Valley as it has been this season. The disease—for it is a fungous disease—is recognizable from the name. The leaves present a curled appearance, and the leaves are also discolored. Near St. Joseph it has been noticed that the leaves take on a reddish tinge, and the leaves are curled and gnarled almost the entire length.

The leaf curl has been more prevalent during the last few years than ever before, and yet the present season has seen a great increase in the spread of the disease. Ordinarily the trees have not been enough infested to cause serious injury, and but little attention has been paid to it. This year, however, it is feared the leaves will fall off shortly, and this means the falling of whatever fruit may be on the trees.

The remedy for leaf curl is to spray with normal strength Bordeaux mixture just before leaf buds open in spring. This is of course not possible at this time. The foliage of peach trees is very susceptible to injury from spray mixtures, and now the Bordeaux mixture should be made by using two pounds of copper sulphate, two pounds of lime, to fifty gallons of water. At the same time the trees should be given good cultivation, to induce new growth, and thus help the trees outgrow the effects of the disease. Perhaps the disease is worse this season on account of the wet seasons of the past two years.

Treatment of Crown Gall on Apple.

The March number of your paper gave a number of treatments for crown gall on young apple trees and the most of the experiments given, killed many of the trees, but did not prevent the growth of gall.

Two years ago this spring I grafted about 100 roots to reset trees where they were missing in my orchard. Last spring I set them out. When I took them up I noticed that about one-fifth of them were affected with crown gall, and I did not wish to throw away such nice thrifty year-old trees, even if affected by crown gall, and in their place use inferior looking trees. So I concluded if Bordeaux mixture is good for fungi on the apple trees, why should it not be good for destroying crown gall? So I cut off closely all crown gall with all the roots affected by it and dipped all the apple trees just before planting them, in a bucket which contained a strong solution of Bordeaux mixture. I did not lose a single tree to my knowledge, and they did not get as good cultivation and care set among bearing trees as if set in a new orchard. I did not mark the trees that were affected with crown gall, so I do not know if my treatment destroyed it or not.

This year I set out 300 apple trees in a young orchard all treated with Bordeaux mixture, a part of them I put an extra portion of bluestone in the mixture. There were not many that were affected with crown gall, but some with wooly aphis, and I concluded the treatment might be good for both. One short row I planted only with those trees that had been affected with crown gall; so by another year I think I will be able to tell the result of my treatment.

The sample copy of The Western Fruit-Grower you kindly sent me I must confess is very good; and am about persuaded it must be a regular visitor at my home; although I take four other papers treating on fruit-growing and farming and write for these papers. A. J. UMHOLTZ.

Turner, Ark.

Washington Fruits.

I enclose you names of new subscribers to the Western Fruit Grower which I gathered in about one hour. One man said he was taking the —— and thought that paper quite good enough. Just then Mr. Brown, a subscriber to your paper, came along and said that he also read the other paper, but it was not nearly as good as the Western, so I got his name immediately. I intend that every fruit grower in this section shall read the Western Fruit-Grower, as far as I am able to reach them.

Strawberries, peaches, pears and apples will be immense crops. Spraying for codling moth has begun. A few of the ranchers are trying the dust spray this season and if the results are satisfactory, very many of the fruit men will get dust machines for next season.

I shall begin thinning my fruit in a week or two, as the apples and peaches are so heavily loaded that the fruit would be small and the trees would never stand under the load. Thinning will be more generally done this year than any former year, as the few orchards that were thinned last year produced so much more uniform and larger fruit, especially Elberta peaches, that the market was very much better than it ever had been.

Our union has secured a deal on boxes with the Cascade Lumber Co. of this city, which will materially reduce the price formerly paid and has had the effect of breaking the back bone of the trust which controlled the box market on the coast, as the Cascade refuses to join the combination.

The outlook for the fruit growers of the Yakima Valley for the coming season is exceptionally good.

T. W. CLARK.

North Yakima, Wash.

"The Fruit-Grower is the best fruit paper published."—Oscar Offerle, Offerle, Kan.

Notes by the Way

John Thompson started early to the polls on the morning of the primary election. He had held to the theory that good citizens ought to vote at the primaries, and after he had heard a strong sermon on this subject, he concluded he would do even better—he would not only vote, but would spend the day at the polls working for the nomination of several men for different offices. And that is why John Thompson started early to the polls.

The polling place was about two miles away, and he decided to walk the distance, but was soon overtaken by a nice-appearing man who asked him to ride. The offer was accepted, and at once the conversation turned to the primary election to be held that day. Thompson volunteered the information that he was going to work for a certain candidate, and the man who had given him a lift handed him a card, showing that he was on his way to the polls to work for the opposition candidate. But why not? Thompson believed the opposing candidate was a pretty good sort of fellow, although not so good a man as his own candidate, and there need be no reason why the two workers should not get along well together during the day.

When they reached the voting place there were few persons there; it was early in the day, and the farmers were very busy planting corn, and could not come until they "turned out" for the day.

It was Thompson's first experience at this kind of work. He had never worked at the polls before, but everything went along so nicely he could scarcely believe that politics was so corrupt as had been reported. His good opinion of the system was rather strengthened by the experience of the morning. The rival workers had little to do; voters were slow in coming to the polls, and when one was seen coming up the road the workers waited until he had hitched, and then they handed the cards of their respective candidates, asked the support of the voter for their favorites, and that was all there was to it.

Voting at this precinct was very informal; when the judges and clerks began to count up for the first time, the workers gathered at the back end of the room, and "kept tab" on the vote their candidates received. At noon, the race between Thompson's man and the rival candidate was about even. And the race had been friendly in every way. Some of the workers had boxes of cigars, which were distributed among the voters, but there had been no sign of liquor being used, nor did there seem to be any undue influence at work. On the whole, Thompson felt good when the votes were counted from the first installment at noon.

But the polls were not to close until 7 m., and in the afternoon things warmed up. The one man who was working against Thompson was reinforced by others, and it soon became apparent that the man who had given Thompson the ride early in the day was becoming under the influence of liquor. Where the whisky came from was a mystery. But it had been freely distributed. Where a few workers had been present in the morning, there was now a large crowd; there were more cigars, and there were more evidences of the use of liquor. Opposed to Thompson were a crowd of fellows, some drunk, some sober, and all working tooth and nail. One of them was a road overseer, and his methods were most adroit.

Voters came in greater number during the afternoon. Here comes one now. He has barely time to hitch until the road overseer, whom we shall call "Bill," greets him cordially.

"Hello, George," says the overseer, and is greeted in like manner by the new comer.

"How's your folks?" asks Bill, and the health of the various members of the family is discussed and then the road overseer and party worker begins his system of soliciting votes.

"I'm coming down to work the road by your place, George," he says. "It needs it badly, and I will fix it up in good shape, just as soon as the soil dries out a little." All of which is good news to George, who knows the road does really need attention. And then, after a further discussion of the road situation, with especial attention to the needs of the road past George's farm, the road overseer, who for the time has been changed into a worker for a certain candidate, calls the voter to one side and then solicits his support for the candidate for whom Bill is working. Perhaps George has little choice in the matter; he knows that Bill's candidate has failed to make a success of his own business, and that he drinks to excess; he had thought, before coming from home, that he would not vote to entrust the county's business to a man who could not attend to his own. But perhaps he was too severe. Here is Bill, a neighbor, who asks as a personal favor that he support his candidate. Then, too, Bill is coming down to fix up his road—at least, he said he would—and he perhaps owes it to Bill, if it will do the latter any real good, to vote for his man. And again, perhaps he had best be charitable; perhaps Bill's candidate, who now is a hard drinker, will feel the responsibility of his position, in case he is elected to office, and will reform.

"Who am I?" George asks himself, "that I should judge my neighbor?"

And he goes to vote for Bill's man. And yet when he left home, after having decided the matter calmly, he had intended to vote for the other candidate—Thompson's man—who was a better, a cleaner man.

Here comes another man from Bill's road district, and the same program is repeated. This late comer seems a little harder to work, but Bill is persistent; he has to talk about the road situation a little more earnestly, and finally the two men go back behind the building, and when they reappear the voter is wiping his mouth with his handkerchief. Thompson has been an interested witness of the whole procedure; he hands the voter the card of his candidate, and asks a vote for him. But Bill has followed the man, and when he turns and looks back at the road overseer as though he were hesitating, Bill says in a loud voice, as he looks at the sky:

"I don't think it will rain before Monday, and if it doesn't I am going to get out the road machine, and go to work; the primary election will be over then, and I can fix up the roads before summer."

And then Thompson knows another vote has gone against his man.

This continues throughout the afternoon. The road overseer and his associates are very busy. Here comes a man who is not known to Bill, and he is turned over to another worker.

"Hello, my friend," says the partner of Bill; "how do you come on?" The worker shakes the hand of the voter, puts his hand on his shoulder affectionately, and at once begins operations. He is very smooth, is this new worker. He compliments the horse the man has hitched to his buggy; he asks about the family, none of whom he has ever seen; he asks about corn planting and other farm work, and when he feels that he has established himself with the voter, he asks his support for a certain candidate. All during the conversation he has studied the new-comer, and now has outlined his plan of action.

He will try to stampede the voter, by bluffing him.

"We just had word from town that our man is far in the lead, and the vote will be almost unanimous. And this is right, too, for he is a good fellow, and the fact that everybody is voting for him shows him to be the man for the place."

He continues along this line, with a talk about there being no opposition, and all that; it's all over but the shouting, he says.

Now, perhaps this voter has made up his mind before he left home he would vote for the best man—for it was admitted generally that Thompson's man was the best man. But why throw his vote away? It would do no good, so what was the difference? He did not want to "throw his vote away," he said, and he voted with the majority.

How many of these persons came to the polls that day? Lots of them, Thompson found. Men who had convictions when they left home, but who had so little backbone.

Thompson was getting discouraged. His ideals had been sustained during the morning, but now they were being subjected to a severe trial. The only thing which gave him any encouragement was occasionally when some farmer approached whose every move indicated him to be a man of decision. While he hitched his team the workers studied him carefully, but his movements were so decisive that when he came up the steps they simply handed him the cards of their candidates, which he accepted, but which he did not read. These men gave encouragement to Thompson, for though he knew very few of them personally, their bearing was that of men with convictions—and backbone.

The afternoon passed rapidly. By and by two men drove out from town, and greeted the workers who were opposed to Thompson. They did not tarry long, but after their departure Thompson noticed there were more frequent trips to the back part of the schoolyard. And following these frequent visits there was more drunkenness. That nice-appearing man who had in the morning given Thompson a ride was now beastly drunk. Another of the workers was in the same condition, and had struck one of the election judges. Voters who had been invited to the backyard stayed around during the remainder of the afternoon and there were oaths and frequent brawls.

Farmers are now quitting work for the day. Here comes two young men casting their first vote. They are greeted by the half-drunken fellows in the yard, and the whole crowd joined in loud talking, followed by a visit to the backyard. And the privilege of voting, for which these young men had waited twenty-one years, was exercised for the first time, and was absolutely controlled by a few party workers by the use of the most dishonorable practices.

Thompson was getting sick. He was tired physically, and sick at heart. This had been his first experience at the polls, and his lesson had been a bitter one. But he would stay until the end. At 7 o'clock the polls closed. The road overseer was drunk and had gone home long ago; others had followed the same way. The bull-dozing worker, who was so positive in his statements, was there; he had not drank a drop—he was too smart for that. The votes were counted, and Thompson learned how badly his man had been beaten—and he knew by what means.

As he walked home in the twilight Thompson scarcely noticed how beautiful the country looked. He was wondering what the future of the country will be. How long can these things continue? When men who know what is right have not the courage of their convictions; when they have not enough backbone to stand upright; and when all that is vicious is solid against the best elements of society, what can the result be?

Thompson was a changed man when he came home at night from what he was when, with hopeful feelings he had gone to the polls in the early morning. His lesson had been a severe one.

Now, is this a fanciful story? Not by any means. Our readers can insert the name of almost any county, and can change the names of the parties, and even of the political parties, to suit the local conditions—and this story will be true, or at least fairly representative of conditions which may be somewhat altered for that particular locality.

How long will they continue? Until men have sufficient desire to do what is right, so that they will study the candidates; and then they must have strength of character to vote for the best man, regardless of any selfish motive, and they must vote for him, even if his is the only vote the candidate receives. J. M. I.

The Family Circle

We can tell that the members of The Fruit-Grower Family are very busy now, because our subscription department shows the effects of this. During the summer months there is always a lull in this department, which is but natural. But we want the members of The Family to help us to make this lull this season as slight as possible. Of course, everyone is very busy now, but notwithstanding this, now is a good time to get subscriptions to The Fruit-Grower, and we hope as many as possible will send in clubs during the summer months.

Interest in fruit culture is increasing at this time, and many persons will subscribe now who might hesitate during the winter months. Show your friends and neighbors copies of The Fruit-Grower, and try to get them to subscribe.

Someone has suggested that members of The Fruit-Grower Family ought to have some sort of a button or badge, so that those who visit the horticultural exhibit at the St. Louis World's Fair may know each other. This probably would have been a good plan, for doubtless there will be times when several hundred members of The Family will be in the horticultural building at once, and scarcely a dozen will know any of the others personally. It can be safely said, we believe, that those persons who are most interested in the horticultural exhibit, and who will get the greatest good from it, are members of The Family. So if you see any persons taking a particular interest in the fruit exhibits, it will be safe to conclude that they read The Fruit-Grower.

How do we know this? Simply because so many of our readers write us that all the progressive fruit-growers in their respective neighborhoods are members of The Family. And these are the persons who will most appreciate the splendid fruit exhibits which are made at St. Louis.

And another thing: You will find that those who have the fruit exhibits in charge for the respective states are not only members of The Family, but are great friends of The Fruit-Grower. You can safely use The Fruit-Grower, we believe, to open a conversation with any of the superintendents in charge of these exhibits.

Commencing with F. W. Taylor, chief of horticulture, we have a great list of friends in this building: Prof. John T. Stinson, in charge of pomological exhibits; Messrs. Goodman and Evans, Missouri; Stanton, Illinois; Wilson, Murphy and others from Iowa; Hadkinson, Pollard, et al from Nebraska; Schell and Holsinger from Kansas; Moore of West Virginia; Mrs. Shute of Colorado; Galloway of Oregon—in fact, there are lots of them, and all our readers will know that these men, at least, are members of The Family. We hope to have copies of The Fruit-Grower at many of these exhibits during the summer, and if you find a stranger who is interested in fruit culture, and yet who does not know The Fruit-Grower, we hope every loyal member of The Family will try to get a Fruit-Grower to give him.

And in regard to this horticultural exhibit we want to mention one other thing. The horticultural building is at one corner of the grounds, and a great many farmers and others who attend the fair will not visit it at all. Every fruit-grower who is proud of his vocation—and what one is not?—should make it a part of his business to insist that everyone who visits the exposition should visit the horticultural building. You will be doing these persons a kindness if you can get them to go—and at the same time you will be increasing the interest in fruits of all kinds, and that means increasing the consumption of the same.

You would have been surprised to see how many letters we have received from our readers asking that their names be not taken from our list, but that they would renew their subscriptions and send good clubs "when the strawberry crop is sold." This was varied in some cases, other crops than strawberries being mentioned by some persons.

Now that these crops are being marketed, and good prices being received for same, we hope all the members of The Family will remember this matter. Renew your subscription today, if your time has expired, and send a club of new subscribers with your renewal. Let Brother Jonathan join with you in celebrating the sale of your crops. Don't neglect this—attend to it today.

THE FRUIT-GROWER CO.

B. H. Bower, Provo City, Utah, writes that Utah expects to give away a carload of fresh Utah fruits on Utah Day at the World's Fair, which will be October 10. If the fruits are as good as some we have seen from Utah, it will certainly be worth a visit to the fair to see them on that day. But why not send some Utah apples for Apple Day, September 27?

Gardening Dept.

Fodder Crops on Vacant Ground.

As fast as pieces of land become vacant in June and July they should be put into crop again and a good plan is to put them in fodder crops for winter feed. I drill sorghum and kaffir corn between the rows in the early sweet corn, peas, and beans, the last time I cultivate, and by the time they are big enough to bother the early crops are out of the way. The best thing I have found to drill them with is a one-horse wheat drill, the kind that has 5 holes and is used for drilling wheat in standing corn. Then as fast as I dig out the early potatoes I follow with the drill and put in sorghum. The early radish and turnip ground I disk and plow and get it planted. By using these odds and ends of patches of ground I get plenty of fodder to keep the teams all winter and some to sell. The horses seem to do better on it than on hay and it is certainly cheaper. Millet could be used the same way, but does not yield as much and I do not like it to feed as it seems to have a bad effect on the horse. Pencillaria is good and I have a suspicion it would be better than the sorghum.

Stake the Tomatoes.

Try at least a few hills of tomatoes trained up on stakes or racks. I doubt if it would pay to do a large field of them that way, but for a small patch it is certainly a success. Train the vines to a single stem and keep them tied up. The ordinary kinds will run up a pole for 6 or 8 feet. The fruit will hang in great clusters and you have no idea how much nicer it will be. It seems to ripen better up in the open air, and sunshine and has a flavor and color and size that is never equaled on the ground.

A Valuable New Radish.

One of the very few really valuable new things that appear from time to time, is the new radish Crimson Giant Forcing. I got a packet of the seed from Germany (where it originated) last year and was so well pleased with the dozen or two radishes I got from it that this year I got about a pound of it at a big price and gave it a thorough test under market conditions. I must say that it is by all means the finest radish I ever saw. In appearance it somewhat resembles the Early Scarlet Globe, but is more uniform in shape and size. Color about the same. It is very early and is ready to use at the same time as the other first earlies but here is the peculiar part of it; it keeps on growing to nearly the size of a teacup without getting either pithy or strong. Just think of it.

We sold off of ours for three weeks steady and only abandoned them then because they were getting too large to bunch handily and smaller ones were coming on. Most of them were about three inches in diameter, of a perfect top shape, smooth and true as if turned with a lathe, absolutely solid and brittle, and so sweet and tender that they were eaten without peeling.

I expect to make successive plantings and have them coming on all summer. It is to be hoped that they will be listed in all the leading catalogues next spring and you should all try them. If you get the genuine article you will use them in preference to any other sort. In fact I do not see why they will not drive out most other early red radishes. Remember when planting it that so large a radish must be thin in the row.

Set Late Cabbage Now.

Now is the time to set late cabbage. It is not too late yet and you can set the plants any time up to the 10th of July. Use good rich soil, moist but not wet, and have it in the best of condition. Make the rows three feet or three and a half feet apart and set the plants about three feet apart in the row. That gives them plenty of room and it is what they must have if you are to have big cabbage. Hoe or rake the ground around the plants as soon as they are set and keep well tended all the time. Don't let a weed start. Kill them before they get through the ground. Cabbage will respond to good soil and good care quicker than almost any other crop. For varieties use any of the big late sorts. I prefer Surehead, Flat Dutch, and the new Cornbelt cabbage. If you do not have the plants you can get them from any good seedman at a reasonable price. I sell hundreds of thousands of them every year. The plants are easy to get to live and they are no more trouble after that than potatoes and they always sell at a good price at cutting time. Last year I advertised my late cabbage at 1c per pound for trimmed cabbage at the patch and sold it mostly to farmers who came often 10 to 15 miles for it. A cent a pound looks like a low price, but when you come to count up that those big heads would average nearly 10 pounds each and several thousand to the acre, you will see it is bigger than it looks. As near as I could estimate, I sold about 30,000 pounds off of an acre last fall. It will take about 5,000 plants to set an acre and they can be bought for about $1.75 per thousand or you can grow them yourself for less than that. Try it.

Time to Set Celery.

Celery is another crop that can be set now. It needs much the same soil and treatment as the late cabbage and can be set at about the same season. Put the rows 4 feet apart and the plants about 4 to 6 inches in the row. Hoe and tend well till large enough to bleach and then hill up and keep hilling up so that only the tops of the leaves stick out of the dirt.

Notes From Seedsman's Trial Grounds

The first vegetables to pass in review in the trials are the radishes, and they have mostly given a good account of themselves. Of the new ones the Crimson Giant Forcing is by far the leader. It seems to me it is the best new radish of the last ten years. It is in fact very near perfect in every way. The Icicle is hard to beat for a white radish. It is long and slim like the Ladyfinger, but is earlier and more tender and sweet. If you like a long white radish, by all means plant the Icicle. Of the round white the new Hailstone seems to be the best. The Triumph and Rosy Gem are good, but I do not like their color. The new Mikado Japanese winter radish or rather late summer radish is good for those who like the big coarse type of radishes. For my part I would rather have the little early ones.

We have a fight to keep the striped bugs off of the melons and cucumbers and squashes, but by using plenty of tobacco dust and keeping everlastingly at it, we kept them away till the plants got a start and got ahead of them. There may be other things that will knock these pesky little striped beetles but the tobacco dust is the best thing I have ever found.

The corn tests are coming on finely. I planted about 80 samples of one ear each. I took the best ear I could find of each variety and planted the good middle part of it. It is in little blocks with Mexican Giant corn in between for partitions. Out of all the eighty kinds there was only one failure to get a stand. That was some red glazed corn from Michigan. It must have got frost-bitten.

A big gray squirrel had preempted a place in my corn test grounds but I made short work of him. A little ball of cotton saturated with carbon bisulphide was rolled into his hole and the mouth of the hole stopped up with dirt. He never opened it. This is the best plan I have ever found to get away with squirrels. It is safe, sure, and not expensive.

It is rare in this climate for beans to lay over out doors in the ground all winter and come up in the spring, but one variety (the Missouri Wonder) has done that every year for me. It sure is hardy. Where I had it in the trial grounds last year the beans came up thick this spring before I had thought it was time to plant beans. I took a few plants and moved to a place in the block of bean tests and they did not seem to mind the change at all. It was the first time I ever tried transplanting beans. After fussing along with some kinds of beans to get them to grow and bear at all it is a comfort to have one kind that is able to take care of itself.

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Shenandoah, Iowa.

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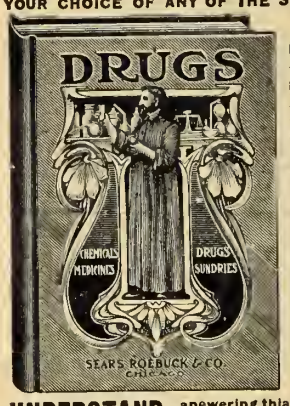

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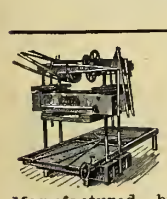

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Hereby wishes to announce to his patrons, that he is now located at Quincy, Ill., and is ready to fill all orders for fruit trees and ornamental stock, also will be pleased to make very reasonable prices on application, all correspondence should be addressed to

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Answers to Queries

D. S. J., Siloam Springs, Ark.—What causes peaches to rot on trees as some are doing now? First a small brown spot will appear, then in a few days half of the peach, or more, will be rotten. Some remain on the tree and dry up, and all are hard to pull from the limb, though they may be almost entirely rotten. Does this trouble confine itself to one variety or many, and early or late sorts? Does dry or wet weather affect the trouble? Does it affect freestones worse than clings? Those peaches adhering to each other seem to be most affected, though isolated fruits are also attacked. Would pulling off the affected fruits at an early date and destroying them be any advantage? What variety does best as a commercial peach both early and late?

Answer.—The rotting of the fruit is due to fungous disease, which is worse in a wet season than in a dry one. Some varieties are more susceptible to rot than others, and where the peaches touch they are more apt to be attacked. Thinning the fruit will help to prevent the rotting, and fruits which have been attacked should be removed and destroyed, to prevent, in some measure, a spread of the disease. The remedy is to spray with a weak Bordeaux mixture, commencing the work early, before the disease has gained a foothold. Greensboro is a good early peach for commercial orchards, and for a later sort the Elberta is most generally planted. Some of the newer sorts, such as Waddell, Carman, Hiley, etc., should be tested.

—

J. R. T., Harriman, Tenn.—(1)—What is the value of ashes made from tanbark, as a fertilizer? (2)—What variety of sweet potato is best, quality and yield considered?

Answer by Dr. Whitten: (1)—I have not been able to find any data concerning the actual value of ashes from tan bark. (2)—It is impossible to state what variety of sweet potato is best for a given locality, as equally successful commercial growers get their best results with entirely different varieties. Both the red and yellow Nansemond, Southern Queen, North Carolina and the vineless varieties are among the best known sorts. It is perhaps safest, however, to recommend that each grower try the leading sorts in his particular soil and then select those which suit his conditions and his particular market the best. The place where sweet potatoes are marketed has much to do with the variety which one should choose; for instance, the northern markets all require a dry, mealy sweet potato, while the southern markets are just as partial to moist, pasty varieties.

—

R. R., West Fork, Ark.—I would be pleased to have you tell how to raise Angers pear stocks. Can you tell me where I can get quince seed?

Answer by Dr. Whitten: By the "Angers pear stocks" I understand the correspondent to mean the Angers quince, which is the quince root usually employed upon which to grow dwarf pears. Angers quince plants can be secured from any leading nurseryman and planted out eight feet apart each way and cultivated. They should be headed low, so they will branch from the ground up. As soon as they have made good branches, a mound of earth can be drawn up around the base of the shoots in the spring, and during the season the limbs covered by this mound of earth will take root. In the autumn these rooted twigs can be taken away and grafted with the pear scions. The usual method is to employ the whip graft in the cellar, to wax the wounds, and plant out the grafts in early spring. Moist sawdust is the best medium in which to pack the roots and grafts after they are made in the cellar through the winter.

—

W. S. H., Marshall, Mo.—Something has killed all our apples here within the last five or six days. The twigs, on which the blooms grow, are all dead and look very much like the pear blight. A week ago the trees and the fruit blooms looked as well as I ever saw them. Is this the work of an insect or has the cold weather of the past month caused all the apples to blight? I have been reading The Fruit Grower for the past six years and could not get along without it and hope to see something in its columns next month that will enable me to figure out what has caused our apples to blight within the last few days. ,

Answer by Dr. Whitten: The twigs of the apple trees are no doubt affected with fire blight, which has been quite abundant in this state during this spring. Probably on account of our unusual weather conditions the trees have been less resistant of blight than usual. It is not likely that we will have a frequent return of this unfortunate scourge of blight on the apple. In the pear, as is well known, this blight is frequently quite destructive. The apple, however, usually resists it. This is especially true of the leading commercial varieties of Missouri, although some of the Siberian crabs are more frequently injured by the blight. In the case of the apple trees there is probably nothing which can be done now, as the blight has practically run its course at present and the trees will no doubt recover from it during the season and be in good shape for subsequent crops. While the prevalence of this blight is very discouraging for the present year, fortunately we need not expect a visitation of it again in our apple orchards except at very rare intervals.

—

J. P., R. F. D., No. 10, Lawrence, Kan.—Please tell me where I can obtain arsenate of soda, required in the making of arsenate of lead. I have failed to find the arsenate of soda here or in Chicago.

Inquiry at the wholesale drug houses develops that none of them have the arsenate of soda, which, with acetate of lead, makes arsenate of lead. They say there has been no demand for same, and it has not been carried. We would recommend writing to Meyer Bros. Drug Co., St. Louis, Mo. If arsenate of soda cannot be secured, arsenate of lead can be obtained already prepared, the Bowker Insecticide Co., offering it under trade name of Disparene, and the Merrimac Chemical Co., 75 Broad Street, Boston, Mass., furnishing it under name of Swift's Arsenate of Lead. The former company has a Western agency, the Missouri Valley Seed Co., St. Joseph, Mo., and the latter has a number of branch houses, among them the J. L. Merrill Drug Co., St. Louis, Mo.

—

J. M., Hendersonville, Tenn.—Can you tell me what is the matter with these grape shoots? I have them every season, just as soon as they leaf out, but this year it is worse than usual. I spray with Bordeaux mixture some six or seven times, but it seems to have no effect that I can see. Some of the vines are all like these, and on other vines one side will be affected and the other side of the vine be good and healthy.

The shoots seem to be affected with a fungous disease, which should have yielded to spraying with Bordeaux mixture, if the spraying were done in time and the mixture properly made. We would recommend that our correspondent send specimens to the horticulturist of the Tennessee Experimetn Station, Knoxville, Tenn.

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Our Acme Wickless Kerosene Oil Stove at $3.80, as illustrated, will do all the work of a coal range without trouble, without heating the room, and is **absolutely safe.** Delightful for summer cooking, laundry work, etc. Furnishes quick meals, cheap and clean. No wick is required and we have the only guaranteed and successful blue flame wickless kerosene oil stoves made. **Absolutely free from odor and smoke.** Do not become greasy. No dirty wick to trim. A gallon of kerosene will furnish a hot blue flame gas fire in the burner for about eighteen hours. No more hot, fiery kitchens or carrying coal, ashes or wood if you buy an **Acme Kerosene Oil Stove.**

In Our Free Stove Catalogue, sent on application, we show a larger illustration and complete description of this **Acme Wickless Blue Flame Kerosene Oil Stove** and also about twenty-four other styles of kerosene oil, gasoline and gas stoves for summer use, all offered at about one-half the prices others ask. For full explanation of the great advantages of these stoves for summer use, big illustrations and descriptions, our liberal terms, binding guarantee, trial offer, low price offerings, write for our **Free Stove Catalogue.** Address, **SEARS, ROEBUCK & CO., CHICAGO, ILL.**

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Apple and Pear Seedlings and Graft. Also General Stock for Nurserymen and the planter. Address J. A. GAGE, Beatrice, Neb.

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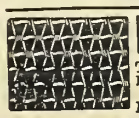

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This cut is exact size of 75 cent strong knife. To start you we will send you one for 48c 5 for $2, postp'd. Best 7-in. shears, 60c. This knife and shears, $1.00. Pruning, 75c; budding, 35c; grafting, 25c. Pruning shears, 75c. Send for 80-p. free list and "How to Use a Razor."

MAHER & GROSH CO., 97 A Street, TOLEDO, OHIO

Holsinger's Department

Curl Leaf in Peach.

Curl leaf was never so in evidence as at present. As to the cause, we are in doubt, for a good and sufficient reason; as many theories as are advanced for pear blight are suggested for the blistering of the peach leaves. This condition is not dangerous to the life of the peach, and may be overcome by good cultivation even though the crumpled leaves may have fallen. By good cultivation, new and healthy foliage may be encouraged and the tree may thus assert new energy and overcome the apparent injury. I incline to the theory that "curl leaf" usually follows seasons of excessive moisture.

The Fruit Prospect.

What a change has come over the fruit conditions since our last appearance! We are now in strawberries or would be if the weather conditions were such that we could pick. Rain, rain, and hundreds of crates of the luscious berries are rotting in the fields. The raspberries and blackberries are promising well as are the few currants and gooseberries. With the orchard it is different. Apples, pears and plums have dropped badly and a short crop of these fruits is the result. With cherries conditions are not much better. Peaches alone promise a satisfactory crop. Nearly all varieties are full enough and in some instances thinning should be practiced if good sized fruit would be had. Of varieties with a light crop the Elberta and Salway have the least. As these varieties are among the largest varieties, they may still be full enough. Just what the crop may amount to depends largely upon the season. Should this rainy season be long protracted it may injure the prospect. I feel assured that the cherries are now suffering from excessive moisture. A number of trees with me show decline. Many others may live to ripen their fruit. On the whole the fruit conditions are far from satisfactory. The season is fully 10 days late as compared with past seasons.

The meeting of the Missouri Valley Horticultural Society at the home of L. A. Goodman on May 21 was the first out door meeting. The attendance was not as large as some we have attended, but the representative fruit men were in evidence. President G. W. Holsinger was in the chair and M. Chandler acted as secretary; Mrs. F. Lee Adams had a most excellent paper on "Spring."

Prof. Howard Dean gave a very full and instructive talk on "Pollination of Fruits and Flowers."

W. D. Cellar offered the following on "Picking and Packing Small Fruits."

The discussions were interesting and entered into with the usual warmth attending the meetings of the Missouri Valley Society, but a wind storm coming up suddenly which had a threatening appearance, caused an adjournment.

Picking and Packing Small Fruits.

"There is nothing new to report in fruit packages. I have thought that a folding box which would come in the flat and could be opened in the field without the aid of hammer tacks or anything else except the two hands, would be a valuable acquisition. Several attempts have been made to introduce such a box but it has always had some serious fault—too flimsy, or costly, so that growers would not accept them. I think, also, a folding crate could be constructed, so that it could be shipped back at little or no expense, to be used again.

"We use tickets for keeping the accounts with the pickers. Our ticket has a double row of fives and tens around the margin to be punched out, and is good for five dollars when all used. The picker's name is written on it so that no one else can get it cashed. In theory, the picker carries it with him and has it punched whenever he turns in a tray of fruit. In fact, it is punched after the day's work is done, and the picker keeps it simply as a memorandum of what he has done. We find the old fashioned tally system the most convenient of any, and a crate cover makes the best tally board.

"I have never had any success in repacking strawberries. I have sometimes had the pickers grade them as they picked them, but my experience suggests that it is better to leave the berries in the boxes where the pickers put them till they are taken out for the table. In some markets it pays to top the boxes, that is, not to put the biggest on top, but to so place the berries as to give them the best appearance. With us—our market is in Western Kansas and Colorado—it doesn't pay. On the contrary, cherries well repay the extra expense, about 10 cents per crate, of turning the stems down and making the top of the box as attractive as possible.

"In picking strawberries, as well as raspberries and blackberries, we find that it is best to put a picker on each side of each row unless the rows are very narrow. Otherwise, in the desire to keep up or to get ahead they are liable to miss a good many ripe berries. We sometimes assign a block of several rows to each two pickers. In this way we can easily fix the responsibility for bad work.

"We pack plums in berry crates. The native plums we shake on the ground if it is not too hard, otherwise on a canvas and sort the bruised and overripe from the firm fruit as we pick them up. I have thought that it would pay to pack the fancy grade of Japan plums in basket carriers, but have never yet had enough fruit to try the experiment. Shall do so this season if Providence fulfills present promises.

"We keep a strong man among the cherry pickers to handle the ladders. Most of the pickers are not strong enough to handle a ladder, and would not probably be careful enough if they were strong. We have a packing shed for berries, but in the cherry orchard we use a large carpenter's bench, and move it about, picking a block four by eight, or thirty-two trees, at each set. The trees shelter the packed fruit from rain. As for the pickers, they are supposed to be immune to both sun and rain. The pickers, except when picking from the ground, use gallon tin buckets, strapped to the waist or shoulders so that they can have free use of both hands. A berry box tray is too clumsy to carry on a ladder, besides the boxes must be topped anyway, so there is no loss in handling them over . The girls are sometimes prone to use their aprons pinned up at the corners to pick in, but this must not be permitted or the fruit is sure to be bruised. This leads me to remark that there are several things for which berry pickers seem to have a decided penchant, which must not be permitted. They must not be permitted to cheat. They must not be permitted to quarrel. They must not be permitted to use profane or vulgar language, nor engage in loud talking in the berry patch. They must not be permitted to put leaves or other trash in the boxes, nor leave the ripe berries, nor pick the green ones. They must not be permitted to visit too much nor in any other way to idle away their time. As a rule the fast picker is best and most faithful picker. There is no place where the cardinal virtues shine with a more brilliant lustre than in the berry patch. It may truly be said of some berry pickers as was said of the Jews by the prophet of old, 'Their lips have spoken lies, their tongues have uttered perverseness. They conceive mischief and bring forth iniquity. The way of peace they know not. Their feet run to evil, and wasting and destruction are in their paths.'

"I do not mean to convey the impression that berry pickers as a class are worse than berry growers. Mark that I said some berry pickers, and there are some berry growers whose virtues are not their most prominent attributes. If one could have his pickers made to order, or could get plenty of the better sort, he might get along with them pretty well, but take them as they come, some good, some bad, some indifferent, and it takes more of the quality of generalship than most of us possess to obtain more than a tolerable degree of success in their management."

W. D. CELLAR.

Edwardsville, Kan.

E. A. Riehl says that the best remedy for the melon louse is to at once pull up and destroy infested vines, before the insect can spread to other plants. He also advises early planting, after having started the plants inside or in hotbeds. He changes his fields and uses tobacco dust to keep the pest away.

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THE FRUIT-GROWER CO., ST. JOSEPH, MO.

A Visit to Arkansas Strawberry Section

Recently Mr. R. H. Cadwaliader, of Louisburg, Kan., who is extensively interested in strawberry culture, visited some of the strawberry sections of Arkansas, with a desire to study the methods of the growers down there. Mr. Cadwallader's plan was to go among the growers, and, if need be, to hire as a berry picker, so as to become better acquainted with their methods, hoping thereby to learn something which would help him in his work at home, his season being several weeks later than the season in Arkansas. This strikes us as being an excellent plan, for there are many things about picking, grading and packing which growers of one section can learn from growers of another. After his return Mr. Cadwallader sent us the following notes concerning his trip:

"I have just returned from Benton County, Arkansas, where I went to study the methods of the strawberry growers there, and for a rest.

"I did not get over to Bentonville and Rogers, but in the west part of the county nearly the only variety planted is Michel's Early, and main mode of cultivation, the double shovel plow. We had two tents and a wagon cover. Camped near a strawberry patch. Rain kept us from picking, Friday and Saturday morning, but Saturday afternoon, our crowd helped pick 11 crates of strawberries that went into boxes, not to mention what went into their mouths. We also bought a lot for table use and brought 36 boxes home with us.

"The strawberry growers in western Benton County grow Michel's Early almost altogether, in order to get their berries on the northern markets ahead of the berry growers of Neosho, Sarcoxie and other southwest Missouri points. Later varieties bring low prices, often as low as 75 cents to $1 a crate on track. A heavy freeze, last week in March, killed the blossoms on the Michel's, and as there are few later sorts, there will be only about a third of a crop. Last year, late frost cut down their crop about one-half. The tendency now is to plant more late sorts.

"Raspberries, dewberries and blackberries do well there and promise a full crop. More money in these than in strawberries. The soil is light timber land, gravel sub-soil, surface covered with rock and gravel, yet plants are very thrifty and free from disease. I should judge that not half as much cultivating is done here as at Neosho, and fields do not show the care. Little work is done with the hoe, the double shovel plow being the usual tool used. In most fields stumps are plentiful and I noticed that the biggest berries grew nearest the stumps.

"At Gentry, probably ten acres is the largest strawberry field, but so many people are engaged in strawberry growing that the total exceeds 500 acres. Of this, owners of 425 acres have formed the Gentry Fruit-Growers' Association, with O. W. Patterson, secretary. They have built a berry house near the depot, on a spur, 20x100 feet, where growers deliver their crates every evening at 6 o'clock and get receipts for them from the secretary. The berries are shipped by car loads and net returns prorated among the growers. The secretary gets $3 a day for making the sales, shipping and collecting.

"More berries are grown around Gentry than at any other point between Neosho and Fort Smith, but all the country between Neosho and Fort Smith is especially adapted for fruit growing, probably the best berry country in the United States. Temperature never gets below zero nor above 100 in the Ozarks, the altitude making it a delightful climate. I met many Iowa, Nebraska and Wisconsin men there.

"I believe the best advice I could give anyone engaged in fruit-growing would be to take the Kansas City Southern and go down into Arkansas to see what nature does for them there. The Kansas City Southern runs north and south. No other road in the country runs so emphatically north and south as does the Kansas City Southern. As soon as the Indian Territory gets filled up, Oklahoma being already full, our surplus population will go to Arkansas. For every 100 miles you go south spring comes a week earlier, northwestern Arkansas being Ozark country, 1,500 feet elevation, has an ideal climate. Our folks will make a winter resort of Sulphur Springs, some of these days. The country between Kansas City and Sulphur Springs is not very interesting, but when you get into Benton County, Arkansas, it looks better.

"Thirty or forty acres is all any man needs down there, all he can take care of properly, and on forty acres he will make a good living. This is a fruit country, just as Iowa, western Missouri and eastern Kansas is a corn, grass and hog country. If you want to grow fruit go where nature will help you best. Many men in Arkansas have a $1,000 annual income off ten acres of fruit, and there is plenty of work on the ten acres to keep the whole family busy.

"Sulphur Springs is the best point I know of to go to for a week's rest. Splendid place to camp out, fine spring water, pure mountain air, shade and grass. Beautiful scenery. A quiet and restful retreat. Sick people ought to get well and strong there. If you are nervous and 'run down,' try a few weeks at Sulphur Springs. It will tone up your system and make your bread and butter taste good.

"The winters seldom hurt fruit in Arkansas, but late frosts in the spring often kill fruit in the blossoms. This year the Elberta peach crop is killed. About the only peaches in Benton County will be seedlings. The main variety planted is Elberta, with some Fitzgerald, Salway and Krummel October, etc. Ben Davis and Gano are the principal varieties of apples raised, and they, also, have been cut short by the late frosts.

"I wanted to learn what those fruit men knew about the small fruit business, which is now my main enterprise. I went into the patch, read the rules for picking as posted on the berry shed, took my four box carrier, and went at it. Was called down for picking some berries too small and 'monkey faced,' and threatened with an order to go back and pick my row over if I did not get them cleaner. Picked eighteen boxes in four hours, got 27 cents for same when I cashed in my tickets. Considered the lesson worth $10 to me—pretty good pay for an afternoon's work."

In connection with the foregoing notes it should be said that the crop at Gentry was much smaller than had been expected. This was doubtless due to the fact that a late frost caught the Michel's Early, the variety most largely planted. The association had advertised for berry pickers, and a great many responded. The Kansas City daily papers published accounts of the condition of many of these persons, who had spent all of their money to reach the berry section, and then when the crop failed they were without work and without means to get back home. Truly, there are many chances for the failure of a fruit crop.

Later I spent a day with Dr. E. L. Beal, the leading strawberry grower of Republic, Mo., 15 miles southwest of Springfield. There are 600 acres of strawberries around Republic, Dr. Beal having 80 acres of bearing fields.

The early varieties were a short crop, owing to frost, but later varieties were ripening when I was there. Out of all the varieties I saw in Dr. Beal's fields the following made the best showing: Commander, Sample, Aroma, Bubach and Gandy. Splendid, a good variety in Kansas, is poor here.

I was also much pleased with Enormous. Dr. Beal is using Commander as his main fertilizer now. Gandy is the leading variety among the majority of growers here and is a reliable sort everywhere.

Farm lands valued at from $20 to $75 an acre. Few new plantings of berries were made this spring, the feeling generally being that the acreage is already too large. There is difficulty in getting pickers and the markets probably will be unable to take the southwest Missouri crop without very low prices and many of their berries will doubtless be sold this year below the cost of production.

The main strawberry points of Southwest Missouri are Republic, Marionville, Logan, Monett, Pierce City, Sarcoxie and Neosho.

Brandywine is not much liked at Republic, mainly because its large hull turns black after picking, giving the berries a damaged and stale appearance.

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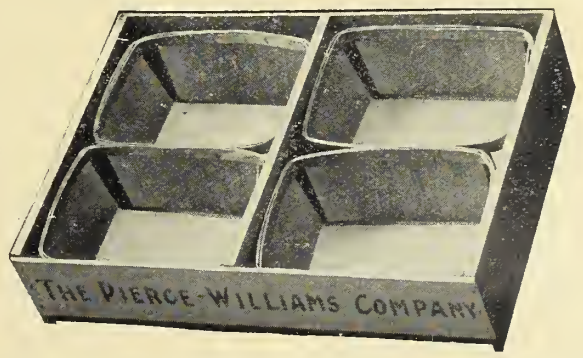

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Prospects for Fruit Crop.

Since The Fruit-Grower last published reports concerning fruit prospects there has been a marked deterioration in the apple crop over the Middle West. What at first promised to be a heavy crop has dwindled to a crop estimated from one-third to half a crop, with prospect for still further decrease. Wet, cold weather during and immediately following blooming time is the cause assigned. Scab has attacked the fruit, and at the time the reports were written the outlook was somewhat discouraging. Since then, however, the weather has been more favorable, and growers feel better. Other fruit crops generally promise well, and even the apple crop is all right in many places, particularly in the Eastern states. On the whole, the fruit crop situation is far better than it was a year ago, as is shown by our reports. Small fruits, cherries, etc., are in good condition, and even peaches will yield much more fruit than was at first supposed. Our reports follow:

Glenwood, Ala.—Shipping peaches now; will ship Elberta about July 1 to 6 in car lots. Have fine fruit crop, and cotton bids fair to be best crop for years.—W. S. D.

Bentonville, Ark.—Strawberry crop was fair and prices low. Raspberries promise well, and are ripening. Blackberries are loaded. Seedling peaches full crop, Elberta 20 per cent, other varieties better. Cherries full crop. Wild Goose and Chickasaw plums full, no Japan plums. Apple trees in excellent condition. Fruit set light on Ben Davis, but heavy on other kinds. Think we will have 60% of crop. June drops is on, but will likely not be worse than usual.—I. B. L.

Gravett, Ark.—Strawberries yielded one-fourth crop. Raspberries and blackberries promise good crops. Peaches will have one-fourth crop. Plums full. Apple trees in good condition, and will have about one-third crop; fruit is clear of worms and smooth.—P. A. R.

Canon City, Colo. — Strawberries two-thirds crop; prices $1.50 to $1.75 crate. No peaches for market. Fair crop of plums. Large crop sour cherries. Average crop of apples—100 to 125 cars. Colorado's apple crop will run from 1,500 to 2,000 cars. Grapes promise full crop. Summer apples dropping, but winter fruit holding on well.—J. W. W.

Rocky Ford, Colo.— Raspberries, peaches and grapes were somewhat damaged last November, but strawberries, gooseberries, currants, cherries, plums, prunes, etc., are fine. Otero County promises the best apple crop she has ever had. The drop is about over; was heavy on Grimes, Maiden Blush and Bellflower. All kinds of crops look well. Beet thinning in full blast. Canteloupes looking well, with larger acreage than usual. I used 16,000 gallons of spray mixture while the calyx of the apple was open, using arsenate of lead and Disparene.—J. H. C.

Savoy, Ill.— Raspberries promise full crop. No plums and few peaches. Apples are fairly set and promise perhaps 75 per cent of crop.—R. L. D.

Hamilton, Ill. — Fine strawberry crop, and all other small fruits promise well. Very few peaches. Cherries good. Apple trees in good condition with fair prospects for crop. Don't think there will be much scab.—H. D. B.

Kinmundy, Ill.—Strawberries good crop, and raspberries and other small fruits promise fair crop. Peaches 10 per cent of crop. Apple trees in fair condition, with light crop—perhaps 15% of crop of 1902. Continued cold, wet weather caused apples to perish at setting stage.—A. V. S.

Clayton, Ill.—Largest crop of strawberries ever known. Raspberries good crop. Blackberries only fair; grapes good. No peaches; cherries a light crop; plums free. Apple trees in fair condition, with poor prospects for fruit. Will be perhaps one-fourth of crop.—G. A. S.

Alton, Ill.—Very large strawberry crop, prices low. Raspberries promise very good crop, with gooseberries and currants light. Perhaps one-fourth crop of peaches; cherries, one-fourth crop; plums, one-half crop. Apple trees in good condition. Orchards are uneven, some with good crop, others with scarcely any fruit. Too much rain for everything except grass. Strawberries were soft, making low prices, as they were in poor condition for shipment.—E. A. R.

Quincy, Ill.—Strawberry crop good; other small fruits promise fair crops. No peaches. Apple trees in excellent condition, with fruit well set in well-cared-for orchards, but with little fruit in others. Will have about half a crop.—C. H. W.

Jerseyville, Ill.—Apples promised an abundant yield, but now the indications are for a light crop. Is this not due to the continued cold, wet weather?—W. E. C.

Centralia, Ill. — Strawberry crop fair to good; prices $1.00 to $1.75, f. o. b. Raspberry crop very promising, and other small fruits good. Peaches are a failure, except on high points. Summer apples promise fair crop, winter apples generally a very light crop, less than 25%. Some blocks set full, but fruit has dropped so badly there can be only a light crop.—W. S. P.

Pendleton, Ind.—Present prospects are for good crops of fruits of all kinds, except peaches.—A. G.

Vinton, Iowa.—Raspberries promise half a crop; cherries two-thirds of crop; plums, two-thirds of crop. Grapes promise well, but cannot say as to apple crop yet.—F. E. D.

Des Moines, Ia.—Strawberries promise 82 per cent of crop. Red raspberries, 53%, black raspberries, 60%. Peaches 17%. American plums, 67%; domestic plums, 48%. Cherries, 60%. Blackberries, 56%. Pears, 49%. Grapes, 76%. Apples, 78%. This estimate is for the state.—W. G., Sec.

Villisca, Iowa.— Strawberry crop good. Raspberry crop good, but few grown here. Other small fruits also promise good crops. Seedling peaches and some budded sorts are all right; others poor. Apple trees in good conple trees bloomed and set well. Young Ben Davis trees seem to be off this year, as are some of the older Jonathan trees, but generally the prospects are good.—H. S. A.

Glenwood, Iowa.—Strawberries 90% of crop. Raspberries, 50%; blackberries, 60% . Seedling peaches will have 50% of crop; budded trees 15%. Cherries, 90%; plums, 50%. Apple trees in good condition. Summer and fall varieties better than winter sorts. Crop as a whole will not be over 50%, if that much.—J. P. J.

Osage, Kan.—Berries promise full crop. Cherries, 30 per cent. Ben Davis and Gilpin apples, full crop; Jonathan, 10 per cent; Missouri Pippin, 25 per cent; Winesap, 25 per cent; Janet, 25 per cent—H. L. F.

Delphos, Kan.—No apples promise full crop except Jonathan, trees of which variety are full.—W. B. E.

Altamont, Kan.—Strawberries ripe, three-fourths of crop; gooseberries, raspberries and blackberries promise full crop. Peaches one-third crop, and apples one-fourth crop.—C. E. H.

Leavenworth, Kan. — Strawberry crop full and fine; will last until June 20. Raspberry and blackberry crops are most promising. Not many peaches, but cherries and plums will be fine crop. Apple trees have blighted considerably; trees set very full, but fruit has dropped until there will be not over 25 per cent of crop.—E. J. H.

Wathena, Kan.—Strawberries yielded half a crop. All berries are inspected, and many which would have been shipped in former years are rejected this season, but inspection is generally satisfactory. Raspberries promise 95% of crop; some blight appearing. Blackberries, 60%; canes healthy, but made few fruit buds. Seedling peaches full, Alexander class 80%, other budded sorts, 10%. Japan and Domestica plums, 100%; natives, scant 50%. Cherries, depending on location, from 25 to 75%. Apple trees in good condition. Jonathan, 70%; Missouri Pippin, 35%; other varieties, 10%. Present prospects indicate an average of not to exceed 25% of crop of all varieties, if that is not too high. Prospects declined up to June 7, but at that time rains ceased. —J. B., Jr.

Atchison, Kan.— Strawberries full crop, bringing $1.25 crate. Raspberries, currants and gooseberries full crop. Peaches 15% of crop. Cherries fair, plums small crop, pears very poor. Apple trees in good condition, with fruit set only fair. Probable crop, 50%.—O. H. P.

Troy, Kan.—Strawberry crop somewhat late, but lots of fruit. Other small fruits good. Peaches scarce. Cherries and plums half a crop. Apple trees in good condition, but fruit set is poor, except in some localities. Will have about same crop as in 1902. Wet, cold weather prevented blossoms fertilizing properly.—M. J. R.

Holton, Kan.—Strawberries, 25 to 80%; too wet. Raspberries, 50%;

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blackberries, 75%; grapes, 100%. Peaches, 5 to 75%. Apple trees in good condition; will have perhaps 25% of crop. Orchards on right soil and in good location promise well, but most orchards are dropping badly.—F. W. D.

Topeka, Kan.—Large crop of excellent strawberries. Raspberries uncertain; other small fruits good. Peaches plentiful, excepting Elbertas and a few others. Cherries excellent. Plums not up to average. Apple trees in excellent condition; fruit set not heavy over the state. Crop will be about an average, but with more bearing apple trees than in any previous year our total crop will be greatly increased.—W. H. B., Sec.

Wichita, Kan.—Early strawberries half a crop, late sorts full. Raspberries promise fine crop, as do blackberries. Grapes good; plums half a crop; very few peaches; apricots few and falling. Apple trees blighting some, but otherwise in good shape. Some varieties are loaded with fruit, others from one-third to three-fourths crop. We look for a quality crop this season, with perhaps 60% of full crop. Hail has hurt some orchards very much. Ben Davis and Missouri Pippin heavily loaded; Grimes Golden, Jonathan and other varieties shy.—E. G. H.

Rosedale, Kan.—Strawberries are watery and soft. Raspberries full crop; gooseberries, 70%; blackberries, 75%. Peaches, 70%, unless weather conditions interfere. Plums very unsatisfactory. Apple trees blighting everywhere, as are pears, including Kieffer. Apples promise 20% of crop.—F. H.

Americus, Kan.—Summer apples fair crop: later sorts will be light crop, except Ben Davis, which will have half a crop. Wet weather caused fruit to drop badly.—J. C. F. W.

Amherst, Mass.—Fine crop of strawberries; other small fruits somewhat injured by winter. No peaches, but a remarkable crop of plums has set. Apples promise only fair crop. Spring very backward.—F. A. W.

Watervliet, Mich.—Strawberries, 90%; raspberries, 50%; peaches, 25%; plums, 75%. Apple trees in good condition, with 75% of crop set; will have perhaps 60% of crop. Have a large number of peach and plum trees which were killed by winter.—R. H. S.

Jefferson City, Mo.—Prospect for apple crop declined at least 50 per cent during past two weeks. Small fruits all right.—A. J. D.

Lexington, Mo.—Apple trees had heavy bloom, but just as little apples were forming they blighted, withered and dried up; pears and cherries are about the same, all having fallen badly. Peaches promised about 10 per cent crop, except on seedling trees, which promised half crop. But in all my experience I never saw leaf curl so bad as it is this season. I believe this condition is due to the excessive wet weather. Berries promise well, except that I fear strawberries will be rather undersize.—J. L. M.

LaPlata, Mo.—Strawberries full crop; other small fruits also full crops. No peaches to speak of, but other stone fruits promise 75% of crop. Ben Davis apples full, summer and fall varieties also full; other varieties shy. Weather favorable for scab, and I look for unsprayed fruit to drop badly.—J. E. M.

Oregon, Mo.—Strawberries half crop, having been injured by rain; raspberries three-fourths crop, other small fruits full crop. Peach crop about 10% full crop; too much rain, causing leaf curl. Other stone fruits, 75% crop. Apple trees in good condition; fruit set well, but crop injured by too much rain. Prospects indicate 25% crop, with the fruit considerably injured by scab.—N. F. M.

Koshkonong, Mo.—Strawberries, 70% crop, with prices low. Raspberries, 60%. Peaches promise 60% of crop, principally Elberta and Family Favorite. Apple trees in good condition, with 40% of crop of commercial varieties.—T. M. C.

Springfield, Mo.—Strawberries had full crop, but were injured 30% by rain. Prices one-third less than in 1903. Raspberries and blackberries, 80% crop. Peach crop not over 10% about Springfield, with other stone fruits a little better. Apple trees in good condition, with 25% crop. Greene County should have 30,000 barrels of apples for shipment—G. A. A.

Columbia, Mo.—Strawberries above an average crop, and raspberries promise best crop in three years. Very few peaches, except in south part of county near the river. Cherry crop full, plums abundant, but rotting. Apple trees in excellent condition. Fruit set well, but twig blight and cold, wet weather causes dropping. Probable crop, 25% to 35%. Cold weather has favored the development of scab and other diseases.—J. C. W.

Odessa, Mo.—Strawberries full crop, with prospects for full crop of raspberries and other small fruits. Peaches, 50% crop. Plums light crop, cherries good. Apple trees badly blighted. Cold rains at blooming time injured the fruit, and prospects indicate not over 25% crop, with fruit of poor quality.—S. H. P.

Lebanon, Mo.—Strawberries full crop, prices $1.00 to $1.50 crate. Black raspberries full crop; reds winter-killed. Other small fruits full crop. Peaches all killed, except Salway, Old Mixon and seedlings. Pears and plums dropped badly. Apple trees in good condition; fruit set well and then dropped, until we will have perhaps one-fourth crop. Early apples growing nicely. All fruit is free from scab and codling moth.—A. T. N.

Richards, Mo.—Strawberries full crop, $1.00 to $1.50 crate. Peaches light to fair crop. Apple crop light, 20%. Entirely too much rain.—W. H. B.

Rushville, Mo.—Peaches will have light crop, 15 to 20%; older trees badly damaged with leaf curl. Cherries good crop. Plums promise well. Hard to estimate apple crop. Much fungi has developed, and some of the apples will yet fall. The crop is in bad condition, and will be very light.—B. F. S.

Tecumseh, Neb.—Full crop strawberries, late in ripening. Raspberries promise full crop, other small fruits fair. Peach leaf curl very bad. Other stone fruits full crop. Not more than half crop of apples, the county over. Cherry trees badly killed.—W. G. S.

Onondaga County, N. Y.—Strawberries good crop, and 90% of raspberries, with normal crops of other small fruits. Peach trees very badly injured in Central New York. Plums, 50% crop. Apple trees in good condition; fruit set 95% of normal, with prospects for full crop of apples.—F. E. D.

Brockport, N. Y.—Apple trees generally in good condition. Had 80% of full bloom, but some are not setting. Too early to say as to probable crop, but if I should hazard an opinion now it would be about 60%. Will be better able to say later.—F. U.

Hall's Corners, N. Y.—Prospects good for all fruits except peaches. Some injury to apple trees from frost. Prospects for nearly as good an apple crop as we had last year. Damages by insects very slight.—T. B. W.

Adams Basin, N. Y.—Small fruits very promising. Plums and cherries only fair; peaches injured one-half by cold. Apple trees in good condition generally. Greenings have not set well; too early to form a reliable estimate; will be better able a month later.—C. O. B.

Rockwood, Ohio.—Strawberries fair crop, price about $2 per bushel. Other small fruits fair crop. Peaches excellent crop and a full crop plums. Apple trees in good condition where sprayed. Crop light in most orchards; my own orchard has 60% of crop, but the average for this district will be about 25%. Fruit free from injury where well sprayed.—U. T. C.

Yukon, Okla.—Light crop of small fruits; grapes good. Peaches an entire failure; cherries half crop. Apple trees in good condition, but crop was injured by frost; perhaps 25% crop left.—A. S. P.

Forest Grove, Ore.—Heavy crop of small fruits. Peaches, pears, prunes and grapes light crops. Apple trees are set too full and must be thinned; fruit in good shape where sprayed. The cherry is a profitable fruit here.—W. R. H.

Portland, Ore.—Small fruits full crop. Peaches, 60%; prunes, 50%; cherries, 60%; apples full crop.—G. H. L.

Punxsutawney, Pa.—Prospects for apples, pears, plums and cherries are for about 90 per cent of crop; berries and peaches 75 per cent.—S. L. H.

Tidal, Pa.—Peaches almost a failure; full crop of plums. Apples promise 85% crop; wet weather has caused dropping.

Harrisburg, Pa.—Very short crop of strawberries; winter-killed. Blackberries in like condition. Peaches had fair bloom, but very short crop. Good crop cherries, short crop plums. Good growth on apple trees. Trees blossomed well, but fruit dropped badly; on trees which did not bear last year there will be fair crop; on other trees a light crop.—G. H.

North East, Pa.—Small fruits below average. Peaches light crop. Plums light crop, cherries 20%. Apple trees full near the lake. Grapes main crop and in fine condition. Probable shipments from this station, 1,200 cars.—A. I. L.

World's Fair Visitors

can make a quick trip to Southeast Missouri, Arkansas, Louisiana or Texas at very little expense after they reach St. Louis.

On first and third Tuesdays of each month, a rate of one fare plus $2 for the round trip is made by the Cotton Belt Route, with stop-overs and liberal return limits, enabling homeseekers to investigate the country and pick out a location.

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From 1 to 40 H. P. Also Bone Cutters, hand and power, for the poultryman; Farm Feed Mills, Graham Flour Hand Mills, Grit and Shell Mills. Send for catalogue.
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Poultry Department

High Prices for Poultry.

During the last few years prices for all kinds of poultry have ruled very high, and there has been an increased interest in the rearing of poultry. Particularly is this true among persons who have small farms near cities and towns, as is usually the case with those persons who grow small fruits for local market. Many of these persons are paying more attention to raising poultry than they have ever done before, and this is proving to be a profitable addition to their business. Certainly if any farmer can afford to give attention to poultry raising, the fruit farmer can, for the two industries work well together.

The Fruit-Grower published several articles on the subject of keeping fowls in orchards, and we are sure these articles were of interest to a great many of our readers. We will be very glad to hear from others who have grown fruit and raised poultry together. Send us your experience. If the plan was a success, tell us about it; if not, give your report, and perhaps the cause of failure can be found.

One gentleman told us of his experience in keeping poultry among young cherry and peach trees, and his experience was not favorable. He found that the poultry packed the soil about the trees after every rain, so that the soil had to be stirred more frequently, or would dry out in an incredibly short time. The trouble with this plan was that the yard in which the chickens were confined was too small for the number kept therein. If the fowls had had greater range, they would likely not have packed the soil so much. Or if the trees were older and had become well established, there would likely have been no trouble. The plan in general is all right—in the details of the same was developed this local objection.

How do members of The Fruit-Grower Family handle their fowls in orchards or fruit plantations? Let us hear from you.

Controlling Egg Production.

A writer in Michigan Farmer says that the successful poultryman, who expects to make money by selling eggs, must so handle his fowls that he will have eggs to sell when there is a scarcity on the market. In the spring time when all kinds of hens, handled in just any kind of fashion, are laying, prices are always low—often below the cost of production, if only farmers knew just how much their eggs cost per dozen. According to the writer mentioned, he avoids marketing eggs at this season. Concerning his plan he says:

"In my locality I take note of the time of year when eggs are cheap and during that time I try to have no eggs or at least a very few. Then when other hens take their vacation I start my hens up and force egg production as rapidly as I can. For instance, I keep my hens laying all winter by furnishing them all the conditions of summer. As spring approaches I stop feeding ground bone, vegetable matter, meat scraps, etc., and confine them to wheat bran or wheat. I keep them shut up where they get no grass, and where they cannot scratch for worms. Many of them are wanting to set and I furnish them either real eggs or China eggs and let them stay upon the nests as long as they like.

"In about two months, or three at most, there will come a time in this locality when other hens will be taking their vacation. By that time mine have been rested up and I start them up by feeding everything they need for three or four weeks before this period. When they have a few months at laying the moulting season will be close at hand and as soon as they commence to drop off in egg production I fatten and kill them before they shed their feathers.

"About the time the last of them are marketed, or about the first of October, my spring pullets commence to turn out the eggs. From that time on through the winter I push them and make them keep it up until spring comes in again. Then I give them a rest as described above. During the past two years I have not sold an egg for less than 20c per dozen in summer, and I get from 25c to 35c in winter. That is the only way I can make eggs yield a profit. Any man who knows poultry thoroughly can make hens lay at any time, or check their laying at any time of year except during the period when they are moulting. I have had hens lay during the period, but that is a rare exception to the general rule."

150 Hens—$350 Profit in 9½ Months.

The hens and pullets were pure, high-class Brown Leghorns, hatched in April and selected October 20 from something over 200. They were of my stock that won at Sedalia at our first state show. All undersized or objectionable specimens were discarded. I reserved these 150 highest scoring birds as breeding and exhibition fowls. They were all choice, large, healthy, well-matured birds. They were put into their permanent homes with no males and had free range. They were near a running stream of water and a patch of rye was sown between their house and the stream of water. An egg stimulating diet was given them from the first and on November first they were furnishing a good supply of eggs. The actual cost of production up to this time was estimated at 25 cents per head, but on counting up the actual outlay, was $15. I was offered 50 cents per head for them November 20th, but refused to sell them. The average number of eggs for the nine and one-half months was 16½ dozen, at an average of 26 cents.

On the first fall of snow and severe weather they were put in a 12 by 34 foot house, with plenty of south windows; the nests all along the south side under the windows. This made a warm, sheltered location. Two inches of dry white sand and gravel had been placed in the house, completely covering the floor, then plenty of wheat straw and chaff was put on this, for the grain to be scattered on, that they might scratch and exercise, thus keeping up their vigor and health. On stormy days they were inclosed in the house, but on mild days when the snow was gone they could go to the rye patch for green food. When inclosed in the house cabbages were hung where they could help themselves.

From December 15 to March 26th the first thing done for the hens in the morning was before or about daylight, after the fire was started under a large kettle, filled with a pail of mixed grain, that had been selected from the threshed straw in the fall, and cracked corn, was put over the fire with small potatoes, turnip peelings, cabbage leaves, etc., and all cooked well. This was thickened to a crumbly state, and allowed to cool. While this was cooking they were hunting the grains scattered in the straw at night or very early in the morning. Immediately after this the drinking troughs were washed out and filled with warm water. This was a very important part of their care, as it brought the hens into vigorous exercise as soon as they came off the roosts, instead of standing around cold and hungry, while waiting for their warm breakfast, and then gorging themselves, then drinking to excess, as is often the case when the hot mash is the first thing given them. If fed judiciously they will scratch for the grain, drink, and then scratch and hunt until almost every grain is found.

Our morning mash did not consist of any stated or "fixed rule" quality, but was about the same in quantity, and the potatoes washed clean made the bulk of the food. When we did not have a full supply of potatoes we could get them for from 10 to 25 cents per bushel. The whole mass was cooked in the kettle until the potatoes were well done, then thickened with bran and shipstuff to a crumbly mass. After it was all done we added red pepper, meat scraps, sulphur, etc.; when fed. We used sulphur once in two weeks, 1½ pounds for the 150 hens; the cayenne pepper daily. The meat scrap twice a week.

A box was kept in the house with grit and oyster shell and all the roasted and broken bone we could get. A dusting box filled with dust and a can of insect powder mixed in, kept them free from vermin. At roosting time what whole corn would be eaten up clean was given them, the drinking troughs emptied and put up to keep clean, the eggs all gathered in, and the house closed up and work done for the day.—Mrs. Ella Thomas in Rural World.

Dr. A. P. Hanchett, Council Bluffs, Iowa, writes: 'I am more than delighted with The Fruit-Grower, and each number is a pleasant surprise in the amount of valuable information upon all sorts of fruit matters, and the growth and evident improvement of the paper is quite remarkable during the past few years."

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Write, or call, and I will tell you what the cost of a ticket is to any point east, west, southwest or northwest. I will also let you know the best way to reach it, when you will arrive, whether or not a change of cars is necessary, and why you should take the Rock Island System.

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Please impress upon the members of clubs that this is a ***Special Offer,*** and that ***Single*** renewals will not be accepted on the 20c basis. This offer is made merely to attract ***New Subscribers,*** for we find that very few readers will discontinue after having read The Fruit-Grower one year. We want to increase the size of "The Family" to fifty thousand by this time next year. Will you help?

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"Your paper is certainly the best of its kind published, and one copy contains more up-to-date and instructive matter, than a whole year of some of the other fruit papers. Your contributed articles are the best of their kind I have ever read. JOHN REIS, Ithaca, Wis.

"I received $10.00 worth of information out of the March number of the Fruit-Grower. It seems to me that my investment of 50 cents for a year's subscription was a pretty good one.
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kills all lice and mites. No injury to birds or feathers. Handles any fowl, smallest chick to largest gobbler. Made in three sizes. Pays for itself first season. Also *Lightning Lice Killing Powder, Poultry Bits, Lice Murder, etc.* We secure special low express rates. Catalog mailed free. Write for it.
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By keeping them until prices are high. Can keep eggs two years if necessary, absolutely the same as a fresh laid one. Send 2 cent stamp for circular telling **HOW**, also handsome **ART FOLDER** of the largest **FANCY POULTRY FARM** in this country. Address Dept. C, **J. C. HEATH'S IMPERIAL POULTRY FARM**, Valley Junction, Iowa.

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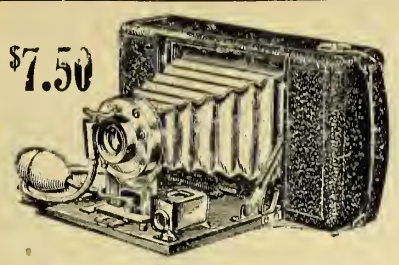

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The Deming Power Spraying Outfit.

The gasoline engine has of recent years come into use in many lines of work on the farm. It finds no more useful field than in orchard and other large jobs of spraying. For this work it seems especially well adapted, having already to a large extent supplanted every other means of supplying the power in spraying, and this, too, notwithstanding many fairly well adapted power appliances which were supposed to be satisfactory to sprayers.

One of the most satisfactory gasoline spraying outfits is the one lately brought out by the Deming Company, of Salem, Ohio, the well known manufacturers of spraying appliances. We reproduce this model outfit complete, engine, sprayer, and tank mounted on a wagon all ready for use. The pump is double acting and may be speeded to 50 revolutions per minute. Safety valve and pressure gauge are fitted to the air chamber which may be re-

lieved at any desired pressure up to 125 pounds. The tank is provided with mechanical agitator to secure a perfect mixing of spraying material. The engine is perfect working and has every provision for safety. It is water cooled, water being supplied by an ingenious piping and doing away with the necessity for pumping. The base of the outfit is a tight tank for the cooling water. It is provided with strong electric igniter and its current is furnished by improved dry batteries. The oiling is simple and there is easy access to every part.

The great advantage of this Deming outfit is the certainty of having ample power at all times to carry the spray to any desired height and spray perfectly the largest trees. Many of our readers have been made sick of spraying jobs with make-shift devices. The coming of this Deming Sprayer means better methods, more effective work, certainty of work at all times, and consequently better returns in fruit. It is an outfit that makes strong appeal to orchardists, park superintendents and whoever is engaged in large spraying operations. A large number of sales have already been made to the fruit-growers of New York, Ohio, Colorado, California and other states. Full particulars of this and all other of the famous Deming all purpose sprayers, may be had by writing the Company at Salem, Ohio, mentioning the Western Fruit-Grower.

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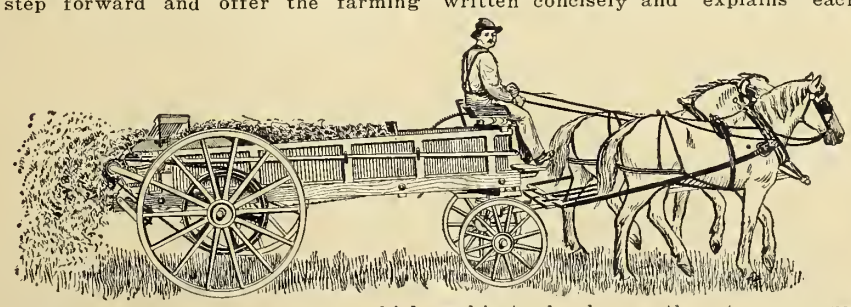
One can hardly think of manure spreaders without having called to his mind the Kemp & Burpee Mfg. Company, who were the pioneers in introducing this class of farm machinery, and have remained in the lead from the first. The Kemp & Burpee Manure Spreaders have always been the standard machines of this sort and have always embodied the latest and best in this line. Now they have taken a long step forward and offer the farming



public their newest spreader, which they have named "Success" and it is well named, for it is so immensely superior in every way to anything ever before offered that it has proven to be a success among farmers. It is lighter in draft than the old machines, handles manure of all kinds and fertilizers with perfect ease of accuracy and may be so arranged as to spread a given quantity of manure with evenness and exactness. Wet, strawy manure, light strawy manure, manure tramped in the feed lot by cattle, fresh stable manure, sheep manure, cornstalk, corn cobs, ashes, lime, salt, commercial fertilizers or anything else that is used for fertilizing purposes no matter what it is. It has attachments for distributing commercial fertilizers on drills in the rows in any quantity per acre.

The hard work of hauling out manure has disappeared since the Kemp & Burpee machines appeared, and the new "Success" has widened the field of usefulness for such machines until now there is nothing lacking. The new catalogue of this Company illustrates and describes the "Success" as well as the older machines made by it, and contains besides many useful hints as to saving and preparing farm manures to secure the most benefit from them. It would not be hard to find farmers who are quick to claim that manure goes twice as far when spread by one of these spreaders as it would if spread by hand in chunks and forkfuls. It will pay anyone needing a manure spreader, and every farmer needs one unless already supplied, to send for the Catalogue of this Company and give it a careful reading. It is sent free to all inquirers. Address, Kemp & Burpee Mfg. Co., Syracuse, N. Y.

Mandy Had Trials, But—

No doubt, you have read about Mandy. But if you are not one of the three hundred thousand who have enjoyed her story, "The Thousand-Dollar Egg and the Hen That Laid It," send a postal to the Geo. H. Lee Company, Omaha, Neb. You'll get one by return mail.

This is a story of devotion shown by a sweet, practical girl toward her father who was struggling under the burden of a heavy mortgage. It gives an interesting outline of the results Mandy obtained from a flock of poultry; how she saved, economized and practiced self-denial till one Easter morning her father cracked open his egg at breakfast and, lo! the mortgage was a thing of the past.

This booklet brought the Lee Company a host of inquiries. The correspondents were so greatly interested in Mandy and her success that they wanted the details of her management. Since the story was a true one, the Lee Company set to work immediately and obtained the whole story in detail and have now published it under the name: "Mandy's Poultry School."

It tells in a lively, interesting style how she made sanitary, cleanly poultry houses, how she sold her eggs and fowls; how she ridded roosts, laying boxes, hens, chicks and her hen house of lice and mites; how she advertised. It gives instructions in egg packing; on feed for hens and chicks; on incubators, etc,

In fact, "Mandy's Poultry School" is an excellent guide for "old hands" or beginners in poultry raising. It is written concisely and explains each subject clearly as the story moves along. It gives figures and estimates so that anyone can obtain a similar success—a profit of $2,000 to $3,000 per year. Mandy had "setbacks" and disappointments but these made her all the more determined to push ahead.

Get this book from the Geo. H. Lee Company, Omaha. It is free. Study in Mandy's school. Learn how to avoid her failures and mistakes; listen to her warnings and be guided by her instructions. Then success in raising poultry for profit will be the reward for every persistent student.

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is where you can get the best trees at right prices. This you can do by buying from us. Our trees are propagated direct from choice bearing, re-selected trees, they will produce fruit of highest color, richest flavor, most uniform size, and the trees are hardy, early and prolific bearers. We guarantee our trees and prices to please. If you want an apple that will keep until the new crop comes in, plant the Missing Link Apple.

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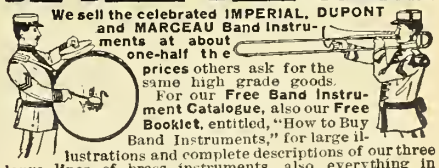

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LATE DEVELOPMENTS

Concerning Black Ben Davis and Gano

A Statement Signed by the Executive Committee of the Mo. State Horticultural Society

TO WHOM IT MAY CONCERN:—In view of the present status and trend of the Black Ben Davis-Gano controversy, the undersigned members of the executive committee of the Mo. State Horticultural Society and the ex-members of the committee appointed by the society to investigate the facts obtainable concerning the origin, dissemination and characteristics of Black Ben Davis and Gano, feel it is due themselves, the parties directly interested and affected, also the public in general, that the following statement be made:

OBJECT OF THE COMMITTEE

When the committee was appointed it was the understanding of its members, as well as of the president of the society by whom they were appointed, that the demand for this investigation was a perfectly legitimate one, coming from the actual fruit growers of the state, being interested as such only, therefore a demand that the society could not well refuse; further that the legitimate function of the committee was simply to secure, before they might be forgotten, any existing record of known facts concerning the origin and characteristics of Black Ben Davis and Gano. The investigation was pursued with the idea that the findings would be reported on account of any bearing they might have upon the origin of the varieties and for their historical value, should they possess any. This was regarded as being the only legitimate function of the committee. The work was done in the same spirit in which one might trace the origin of a cultivated plant in order to determine if possible whether it was an indigenous or an introduced species. It was not designed to in any way affect commercial interests, nor was it intended to antagonize the opinion of those who, through intimate acquaintance with Black Ben Davis and Gano were already satisfied as to their origin and characteristics.

NOT FOR COMMERCIAL INTERESTS

Unfortunately, since the report was made, its legitimate function seems to have been lost sight of by many. Instead, the report seems to have been considered from the standpoint of its alleged bearing upon commercial interests and to have been made the means and basis of repeated attacks upon the introducers of Black Ben Davis, subjecting them to criticism underserved, inflicting upon them an injury which we regard as entirely unmerited and unwarranted; all of which to the practical exclusion of the legitimate purpose of the report. In public statements it has been used as evidence in upholding and emphasizing individual opinions in the controversies that have followed. This condition of affairs has placed the officials of the horticultural society and the individuals who composed the committee in the position of having promulgated and abetted partisan opinion on one side of the controversy. This we regard as intolerable and wish to emphaticially disclaim any such position.

QUESTIONABLE INFLUENCES BEHIND THE DEMAND FOR INVESTIGATION

Justice also demands the further statement that had we been in possession of all the facts as we now know them, and had we known as much concerning the sources and influences behind the demand for investigation on the part of the society, realizing as we do now that the purpose was more to injure the introducers of one of these varieties rather than to settle a question of nomenclature, we would have opposed any official action whatever. In short, we believe an unintentional wrong has been done by the society in attempting to determine a question which rather should have been left for the verdict of the actual fruit growers, who in the end must finally pass upon and determine all questions of this character.

IDENTITY STILL AN OPEN QUESTION

We recognize that horticulturists and fruit growers of unquestioned integrity have failed to concur with the opinion given in the report of the committee; also recognize that **later evidence brought out by a subsequent report, later testimony, which we did not secure, throws more light upon this question,** which at least makes it **an open and debatable question and worthy of further investigation** by all who are interested. The committee submitted only their individual opinion, based upon their findings from the evidence procured by them during the time investigation was made, based upon a comparison of the leaf, twig and fruit of each variety, samples of both having been obtained as stated in report. The origin of the samples of Black Ben Davis we are sure of, as they were taken from the orignal Bain trees. **The origin of the Gano which were used we cannot be positive of** as the source from which trees were obtained was not traced. Others of equal personnel have expressed opposite views. We recognize the right of everyone to form his own personal opinion, and in answer to the numerous inquiries for an explanation for the conflict-ion of opinion of this controversy, we invite everyone interested in the matter to consider impartially the complete evidence as brought out upon both sides and to make up his own opinion, unbiased by ours.

IN JUSTICE TO THE INTRODUCERS OF BLACK BEN

To some it may seem strange why no varietal difference between Black Ben Davis and Gano should be observed by some horticulturists when very apparent difference is reported by others. To others who are more familiar with the many different phases of the matter it is not hard to understand how men both honest and capable should differ on this question. No more remarkable than honest difference of opinion that has existed for a time on similar questions before, which questions have finally been settled to the satisfaction of both parties. We believe the present discrepancy of opinion concerning the Black Ben Davis-Gano controversy is capable of being explained to the satisfaction of all parties concerned, that subsequent observation will bring such an explanation about. In the meantime we wish to avoid any over-zealous defense of personal opinion which might lead to partisan strife and misunderstanding, deprecating especially the many partisan exaggerations made as to time and labor expended by the committee in this investigation and the comparison drawn in this connection, realizing that any such participation in the discussion, so far from straightening out the difficulty, can only retard the time when a common opinion can be reached by all. Our purpose, therefore, in issuing this supplementary statement, is to do justice to the introducers of Black Ben Davis, who we believe have been not only wronged, but subjected to an abuse which was not warranted, and in justice to the Missouri Horticultural Society, which has been placed in a position which it was never intended it should occupy.

Signed, D. A. ROBNETT, Pres't Mo.Hort. Soc.
C. H. DUTCHER, 2nd V. P. "
L. A. GOODMAN, Sec'y "
W. G. GANO, Treas. "

J. C. WHITTEN } of the B. B. D.–Gano Com.
J. C. EVANS, }

In explanation of above statement, which was signed by all of the members of the executive committee of the Missouri State Horticultural society with the exception of one, also the members of the Black Ben Davis–Gano committee with the exception of one, we desire to make to the public the following recital of facts:

On March 7 we received the following letter from Dr. J. C. Whitten, then president elect of the Missouri Society, also late chairman of the Black Ben Davis–Gano Committee:

COLUMBIA, MO., March 6, 1904.—Mr. Stedman has just returned from your nurseries and I have had the pleasure of a few minutes chat with him concerning his visit. I am now even more fully convinced than ever that you fully understand my attitude in this apple controversy. Not that your frank and straightforward letters left any room for doubt that you believe I was acting with honest intent, but sometimes a spoken word can have more foree in impressing ones mind than could any number of letters.

I have been more fully impressed and have been giving more thought to this matter since receiving the letters which were written by some of the officers of the Society, and which I returned to you yesterday. These letters have served the purpose of putting me for the first time in actual touch with the attitude of some of my colleagues in the society and on the committee. I appreciate the fact that you sent me those letters, more than I can tell. So far as I know, those men are, most of them at least, my personal friends; I also realize that you were aware of that faet when you sent me their letters. The faet that you sent me the letters under those eireumstanees emphasizes the fact of your straightforward dealings and that you believed I would take no advantage of the confidence.

Heretofore I have not been sufficiently eognizant of the aetual attitude of the soeiety officials on this question. I have very little opportunity to see any of them except Mr. Robnett, who lives here in town, and who, I am convinced, takes essentially the same view that I do, viz., to refer all inquirers to the evidence on both sides of this matter and ask them to make up their own opinion unprejudiced by the opinion expressed by our eommittee. This has also been one of the busiest years of my life . . . so I have hardly had time to give serious thought to anything outside my professional duties here in the University.

I can now see, however, that the fixed opinion of some of the men, being so positively enforced, can have the effeet of retarding the time when the fruit growers can reach a fair and unbiased opinion that shall be shared by all. Personally I try to believe that much of this is due to over-zealousness in defending one's personal opinions. To my mind, evidence on either side of a question is worth nothing, yes, is worth less than nothing, if it fails to contribute toward an eventual proof that shall be satisfying and conclusive to all. The personnel of the Arkansas committee, composed of such men as the director of the station and two of their most respected fruit growers, the business and social standing of the introducers of Black Ben Davis, and the quality of the men, generally, who take the opposite view from that expressed in our report, leads us as gentlemen, to acknowledge that this question is simply one of a difference of opinion, and that men may honestly differ in opinion and still be gentlemen, yes, even friends. To my mind the question is never settled until it is settled to the satisfaction of all eoncerned, until we have gotten together on the proof, until the proof becomes convincing to all. It can never be settled to the satisfaction of all until the parties who raised the controversy become willing to acknowledge these points and set about looking at the queestion through impartial eyes.

Understanding as I now do, the position of the men whose letters you sent me, I am determined to set about trying to undo the injury to your firm, which I have somewhat unwittingly been a party to doing. I am willing to begin work on the individual men who are interested in this thing in the society and see if the above position, stated just as frankly as I have stated it to you, eannot be taken by them. Of course I realize the magnitude of the job. I am aware that my official eonnection with the thing ceased when our committee was discharged. My moral responsibility does not cease however, nor does the moral responsibility of any of us cease until we get right on the matter. I have several possible schemes in mind to take in bringing this settlement about. I would like much to have a few minutes personal talk with you before taking any steps, in order that I may have your advice and that you may know and sanction what is to be done. Would it be possible for me to secure a conference with you if I were to go to Louisiana during this week? I know you are buried with work as I am, but I ean see ahead the possibilities of results that may in the long run more than undo the injury and annovance that this matter has brought about. Meantime I want to talk the matter over with Mr. Robnett, with whom I feel as free to talk frankly as I do with you. I do not know how much influence I may have with the society members, but having a right motive on my side, I am convinced that there are enough right-minded men in the society that tact and diplomaey, coupled with gentlemanly motives, can win them over to taking a non-partisan view of this case. A conference with you would enable me to go about this with a hetter understanding of how to do it. If this strikes you favorably I shall look for an answer setting a date. Of course you will treat this letter as personal, sinee what is done must be done without anything to prejudice it. Very sincerely yours,—J. C. WHITTEN.

OUTSIDE THE PROVINCE OF THE SOCIETY

To this letter we replied stating we would be glad to see him at any time, also suggesting that he bring President Robnett along. This was followed by a visit from both gentlemen a few days later. While here the action of the society, together with the report made by committee, was discussed quite fully; also the individual acts of officials, etc. Both of these gentlemen expressed themselves as regretting exceedingly their personal connection with the matter, greatly deploring the fact that the society had taken any action whatever, stating that they now recognized it was a matter entirely outside the province of the society, should have been left severely alone and a question which should have been left to the actual fruit growers for a decision; in short, both stated that they realized **the society had done a great injustice, had been the aggressor** and owed it to both Stark Bro's and itself to right the wrong at once. They were so strongly impressed with above views that they said they would **voluntarily** take the initiative with the executive committee, also with the Black Ben Davis–Gano committee to the end that a statement be made setting the matter right. Both expressed themselves as now realizing the influences behind the investigation, the license which the report had given competitors to abuse and misrepresent, and that the society had put upon us an imputation of dishonesty which was undeserved and which stigma should be removed.

A WRONG THAT SHOULD BE RIGHTED

Following this visit we were advised of a meeting at Columbia with L. A. Goodman, secretary of the State Horticultural Society a few days later, at which time Messrs. Whitten and Robnett stated their views to him as they had stated them to us; that Mr. Goodman fully concurred that this action should be taken at once; that Dr. Whitten should prepare a statement submitting it to us for approval, which was done. The statement we did not consider covered the facts in the case and so informed Dr. Whitten. In reply we received from him the following letter:

COLUMBIA, MO., April 12, 1904.—Your letter of yesterday has just reached me. The idea I meant to convey in my letter of April 9 was this: Knowing that an official act of the society has resulted in an injustice to your firm, which injustice has been intensified by attempts to privately defend that act, it oeeurred to me that the society, in justice to itself and in justice to your firm as well, should make some attempt to right that wrong. Ordinarily I should have considered that I was in no way responsible for the acts of the society. Sinee I was a member of the committee whose report was the cause of the mischief (though eertainly, **on my part at least,** the mischief was not intentional) I took the liberty of suggesting, first to the president, and then by letter to the seeretary, that something ought to be done to right the wrong. It seemed to me that whatever was to be done should **come primarily from the officers of the society. Mr. Robnett agreed with me heartily, and later a letter from the secretary expressed the same view, admitting that much had been done that ought to be undone.** A few days later, in my office, Mr. Irvine being present, they exp ressed the same desire I felt to right the wrong that had been done. The statement that I sent you, looking toward plaeing each man concerned in a position where partisan, private letters could not well be indulged in was the result.

This statement, as I can now readily understand, was not deemed sufficient to right the wrong by those who had so over-zealously (that is the strongest expression that I care to put on paper) defended the position of the report, though, much to my satisfaction, you said that it was sufficient so far as Mr. Robnett and myself were concerned.

Not knowing how mueh stronger statement than that might be assented to by the officers of the society, and not feeling that I could suggest to them that they ought to do something that would be an acknowledgment that some of them had been unduly partisan, it occurred to me that it was best for me to let them frame their own statement. I took this position, not because I am any less anxious to have the wrong righted, but because I thought it would be the quickest way to secure righting the wrong. I believe that when they see that I have done what I consistently can, not knowing what they may be willing to do, they will set about doing the right thing themselves. So long as I am not an officer of the society I do not see that I can for the present do anything farther to secure a statement on behalf of the society itself. So far as I am personally concerned I shall continue to refute the partisan charges that have been made during this eontroversy, so far as my acts can refute them, by referring to your firm and to the varieties you handle whenever asked by fruit growers to mention reliable nurseries in the state where they can get rellable treatment, and by so framing my answers to numerous enquiries concerning this controversy as to put your side of the question in a perfectly fair light.

In case there oecurs to you anything that I can do to right the wrong that my own participation in the report has helped to be the means of I shall be glad to receive a statement of it from you, as I assure you I regret that I have been concerned in a report that has been taken advantage of to cause you so much annoyance and would gladly do any right thing to undo the matter. Very truly yours,—J. C. WHITTEN.

REVISED STATEMENT NOTHING BUT THE TRUTH

On receipt of above letter we made an appointment with Dr. Whitten and President Robnett, visiting Columbia on April 15, returning at that time the statement with a few modifications made by us, stating if so signed we would accept so far as the society was concerned, considering all personal differences an outside matter, to be so handled, and the society in no way to be held responsible. The statement as submitted with changes made was accepted without hesitation by both Dr. Whitten and President Robnett, both stating that they were willing to sign it; the latter saying it was much milder than he expected or considered our due; after which they agreed to take the revised statement to Kansas City on Saturday, April 16, President Robnett to wire call for meeting there for the purpose of discussing statement and securing signatures. Both agreed with us at this time that there was **nothing in the statement except the truth,** nothing that any member of either executive board or the Black Ben Davis – Gano committee could object to signing, and were sure that they would be able to obtain signatures without any trouble; that they were sure Mr. Goodman would sign because on being notified that first statement submitted was not satisfactory to us he had asked Dr. Whitten to go to Louisiana and fix up such a statement as would be accepted, making stronger, more comprehensive, if necessary.

On our return from Columbia we received the following letter from L. A. Goodman:

MISSOURI BUILDING, ST. LOUIS, MO., Apr. 14, '04.—I write to you because you are the one I know best. I want to come up and talk with you about our matter if you will be kind enough to let me come. I am sure that a conference should have been had before and now will be glad to come up any day you may say.—L. A. GOODMAN.

On Monday, April 18 we received letters from both Dr. Whitten and Pres't Robnett, with the information that **statement had been signed "in a spirit of general willingness"** as stated by the former, **"with little trouble"** as stated by the latter; signed by all except two who were unable to be present at Kansas City meeting; with the further information than Mr. Gano had been sent to secure their signatures. In order to make plain the feeling and just what occurred at this meeting we give the letters of both in full:

COLUMBIA, MISSOURI, April 17, 1904.—I should have wired you from Kansas City that the statement was signed **without opposition** by all the men concerned who could be gotten together there for the purpose on Saturday. They were D. A. Robnett, Pres't, C. H. Dutcher, 2nd V. Pres't, L. A. Goodman, Sec'y, W. G. Gano, Treas., J. C. Evans and J. C. Whitten the latter two being members of the speeial committee. That leaves Mr. Tippin first V. Pres't and Mr. Flournoy the third member of the special committee to sign the paper. Some of the men were not able to get there until late in the day and it was too late for a wire to you when we got the work finished and had barely time to get to our train. Mr. Tippin and Mr. Flournoy failed to get to Kansas City but some of the men at the society meeting said they were probably away from home and did not get Mr. Robnett's wire in time. Mr. Gano went down to get them to sign the statement and now that all the other names are on it there is no doubt in the minds of the rest of us but they will willingly sign it. In fact there was a far more general willingness on the part of the party to sign the thing than might have been expected when we produced some of the evidences of how your firm were being nagged on account of that report. The general sentiment was that **it was not only due to your firm but was due the society** to place themselves in a position where no farther advantage might be taken of their aetion to wrong your firm. Personally I feel as if the disagreeable results of the thing were now in a way to be cleared up. You will be farther interested in knowing that Mr. Goodman showed me a copy of the proof of the society report which is now in type, showing that he put in a paper along the lines I told you he had mentioned, to the effect that the Gano apple was now shown to be a variable variety, on account of its promiscuous propagation and that the B. B. Davis was superior on account of its holding up to its true standard wherever it has been grown, due to the fact that it has been propagated from a true strain of bearing trees grown under conditions where they have developed high character and been kept pure by seleetion by a single firm who got stock from well developed bearing trees. I hope the matter will from now on develop to your satisfaction and that some of the mischief will be undone. Very sincerely yours, –J. C. WHITTEN.

L. A. GOODMAN ADMITS HE DID WRONG

COLUMBIA, MO., April 17, 1904.—It is with pleasure that I write to let you know about our meeting yesterday. Messrs. Goodman, Gano, Evans, Dutcher and Whitten were there. **We had but little trouble in getting the article signed** by all that were present. And that we might carry out your wishes, that is to get it signed and to you as soon as possible, we sent Mr. Gano to get Mr. Flournoy and Tippin to sign. After which Mr. Goodman will bring it to you in person. I want now to ask you to be as considerate of me as I have of you and give Mr. Goodman a chance to try and show you that in some things you have been laboring under a mistake. Only one illustration: The letter from Mr. Brackett said Goodman and Flournoy were in Washington, when he should have had Evans and Flournoy, for Mr. Goodman never was in Washington at any time with Flournoy. Also many other things he will be able to throw some light on. I never in my life had any occasion to talk to Mr. Goodman about this matter but after you had told me so much I felt it my duty and privilege to talk to him. I am sure he is not so bad as you think, therefore I ask you to give him a personal interview and a chance that he may try to disabuse your mind. He is **only too willing to admit he has**

pone you wrong and also after knowing what he now knows you have been led to believe that **you had a right to believe** all you do or did. Though you may not become reconciled altogether I do hope you will get to where you can make an agreement on some World's Fair Exhibit, for I believe it would be of benefit to the society and show that Whitten's and my work had been of good. Should you refuse to take part in the exhibit it would not look as though we had accomplished our end. Again, now is the time for you to get in some good work which I can better explain in person sometime. Yours hoping for harmony,—D. A. ROBNETT.

SOME PLAIN TALK

The next development is a letter from Mr. Goodman stating that he would visit us on the 23d. Letter herewith:

MISSOURI BUILDING, ST. LOUIS, MO., Apr. 20, 1904.—Yours to Tribune Pt. Co. sent to me here. I am holding it (State Report) open until I see you. Have been waiting to hear from you about going to Louisiana. I will be up there on Saturday a. m.—L. A. GOODMAN, Sec.

This letter was followed by Mr. Goodman's visit on the 23d, made, as he expressed it, for the purpose of making personal explanations, **acknowledging the wrong he had done,** with the hope that all differences might be adjusted. To this we replied that personal differences were an outside matter; we first desired to know as to the action of the society. This brought forth the information that Messrs. Tippin and Flournoy desired certain modifications made in the statement before they signed. Asking what these modifications were Mr. Goodman then submitted statement for our inspection, we finding that, as informed by Pres't Robnett and Dr. Whitten, it had been signed by Messrs. Whitten, Robnett, Dutcher, Goodman, Gano and Evans. Mr. Goodman explaining that some interlineations made by pencil were the changes asked for by Tippin and Flournoy before they signed. On noting these changes we refused to accept them as satisfactory, stating to Mr. Goodman that, however, this need not interfere or delay the matter as we would accept statement, acknowledging it as satisfactory as covering the society's action, leaving off the two signatures. To our inquiry as to whether Flournoy and Tippin absolutely refused to sign unless modifications were made Mr. Goodman would not commit himself but stated that he and others who had signed very much preferred that the signatures be secured, and that he was satisfied it could yet be arranged; leaving the impression throughout his conversation that with the adjustment of his personal differences everything would be made satisfactory, all signatures secured, etc. We accepted in good faith the assurance that in making this statement the signers were **actuated by a sense of justice and right,** wishing at the same time to set the society right, to repair the wrong which they freely admitted had been done; not a word having been said by anyone at any time concerning the statement being made conditional upon securing the signatures of all; therefore we considered the matter satisfactory so far as the society was concerned whether the two additional signatures were secured or not.

Covering personal matters and entirely aside from statement, we told Mr. Goodman plainly that we regarded him as the instigator and at the bottom of the whole trouble; that his actions for a number of years showed plainly his animus against our firm; that from reliable information he had lost no opportunity to injure us in every way, using his official position in the society to carry out this purpose; that we had heard from him at every point of the compass making the statement that there was no such a variety as Black Ben Davis apple, that it was nothing more than Gano; that Stark Bro's were practicing an imposition on the fruit growers, simply renaming an old and familiar variety for the purpose of securing an increased price for trees, and that it was the duty of the state society to make this investigation, exposing the fraud, protecting the fruit growers.

We reminded Mr. Goodman that he exhibited on different occasions sample apples which he stated were procured from the original Black Ben Davis tree, **although this tree had been destroyed years before;** that not satisfied with voicing his personal opinions, injuring us thereby in every way possible, he had brought this matter before the society, insisting that an official investigation be made, making it appear that there was a legitimate demand for an investigation coming from the fruit growers of the state; when in fact **he knew such was not the case.** Instead, he knew that it came from a few parties like himself actuated by other than legitimate motives, and from self-interested nurserymen; that by reason of his representation and influence our request for a fair and impartial committee, one outside of the influcnce of the state society was ignored, and instead, a committee of three appointed, **two of whom were openly prejudiced and had so expressed themselves** on numerous occasions; that it was a well-known and generally conceded fact that he was practically running the society, Pres't Robnett accepting his suggestions, not through wrong motives or incompetency, but for the reasons, as stated by him, of his implicit faith in the honor and his belief in the Secy's long familiarity with society matters, etc.; that even after committee was appointed his activity had not ceased, but instead every string pulled, every possible step taken to secure the report which was made; that while he had taken exceptions to **the admission of Col. Evans** immediately after his return from Arkansas **that they were two separate varieties,** taken exceptions to fruit journals carrying our paid advertisements giving as a reason that it tended to influence committee, we found him perniciously active all the time, injecting matter into the state report, making inquiries of pomological department at Washington, concerning samples submitted by other than committee, keeping in close touch with committee, visiting department at Washington, at which time an offense serious indeed was committed, all for the purpose of influencing the committee to bring in a report officially confirming his opinion as previously expressed.

We told him also of the statement frequently made by him that there had been "funny business" in Arkansas and sharp practice on the part of Stark Bro's prior to the time the committee and Prof. H. E. Van Deman visited the Bain trees. Further that we believed from information at hand that his trip to the Maryland State Society in December, 1902, was for no other purpose than for an excuse to visit the department at Washington where he might have the opportunity to utter this slander and pave the way for a visit there on the part of the committee; further, we told Mr. Goodman that his action in garbling the record of the state meeting in Eldon was purely an attempt to commit Stark Bro's to the personnel of the committee appointed; that his frequent statements made since report was published that the committee was appointed by request of Stark Bro's, that we had agreed to abide by the decision of committee, etc., his great haste in rushing out report accompanied by his official letter, his aid extended rival nurserymen at this time, referring to their circular matter when receiving inquiries concerning the report, together with many other actions along the same line which we might name, **all showed plainly his animus, his intent to injure us and the utter unscrupulousness of the methods employed.**

We plainly told him that **we could not compromise with actions of this kind** and that nothing would make this matter satisfactory to us except a statement acknowledging the wrongs which he now admitted, both to us and others, **this acknowledgment to be made equally as public as the wrongs inflicted;** also his resignation of the official position which he had both misused and abused.

Mr. Goodman stated that he was very sorry the matter had gotten into this shape; he freely admitted that he had wronged us and had done many things he ought not to have done; that he was now ready to acknowledge it and pay the penalty, but thought that we were blaming him for many things for which he was not responsible and that we were entirely too severe upon him; that while he had made statements to the effect that we were practicing an imposition upon the fruit growers, that he now realized, in view of later evidence, that he was mistaken, and at this time did not consider that we were engaged in sharp practice or practicing any imposition whatever; that in the light of investigations made it was his present opinion that we were justified in asking more for Black Ben Davis than for Gano, as according to his present theory, Black Ben Davis is a separate strain and the highest type of the variety; a strain we had kept pure, hence trees were more valuable, well worth more, customers could afford to pay more; stating further, that **he would consider his orchards worth double, or many thousands of dollars more, if containing the highest strain** rather than the trees he had.

In this connection he exhibited to us an article which he had prepared along this line to go in the next state report following the report made by the Black Ben Davis–Gano committee (this is the article to which Dr. Whitten calls attention in above letter), stating further that while, during all the investigations made, they had found only one type of Black Ben Davis; on the contrary they had fouud **many types of Gano.**

FINE WORK AT U. S. DEPARTMENT

On asking Mr. Goodman concerning the "striped apple" story as told at the department at Washington City on the occasion of his visit there in Dec., 1902, viz., that we had all apples showing stripes picked from the Bain trees prior to the visits of Prof. Van Deman and the Mo. committee, **he admitted that he had been guilty of a great wrong;** that he would be glad to make full explanation to us, but requested that it be made privately, to the members of the firm only, giving as his only excuse for this vile slander that he had just passed through a very serious railroad wreck, was in the greatest distress both physically and mentally and **was not responsible for his actions;** after leaving the department he said that he realized the enormity of the offense to such an extent that he could not sleep during the night; to such an extent that he requested Mr. Powell, one of the pomologists who had accompanied him on this trip, to ask the department that the story be dismissed from mind, no attention paid to it, as he wished that it carry no weight.

Mr. Goodman further admitted that during this visit **he talked over the controversy and the Mo. Society's investigation with members of the department; also talked of the probability of a visit by the Missouri Black Ben Davis–Gano Committee** for the purpose of securing an official opinion from the department.

SELF PRESERVATION

Mr. Goodman urgod that the statement of the executive committee could be made to include any matters for which we wished personal statement from him, saying he had no doubt that the other members of the executive committee would sign, including Tippin and Flournoy; he took the position that he thought we were making a mistake in asking for his resignation, as with the more complete statement he would be able to secure, fully righting the wrong done us, he would be in better position to give us assistance and correct the wrong impressions if allowed to retain his position.

In short, Mr. Goodman's conversation and actions showed that he was willing to give us about anything we wanted in the way of a statement **providing his resignation** and a **public personal statement were waived.**

EXPENSE ACCOUNT FOR THE MARYLAND TRIP

Mr. Goodman stated that he wished to explain in regard to expense account for trip to Maryland Society in December, 1902: That he had been sent there as a delegate by the Missouri Society, and on his return a warrant was drawn for $72.00 expense; that in January, 1903, he having received a warrant from the Maryland Society covering his expense, he refunded the amount to the Mo., Society. Asked if this amount had been refunded prior to June meeting following, he stated it had not as treasurer did not make report at mid-summer meeting but that it had been turned over to treasurer prior to December 1903 meeting. However, **Treasurer Gano had advised us that he had not received this amount prior to December 1903 meeting,** but that he had since received it and it would be reported at the next meeting, June, 1904—**nearly 18 months after the money was received by Sec'y Goodman.**

A PUBLIC WRONG CANNOT BE PRIVATELY RIGHTED

Being unable to accept the theory that a private repentance, a private confession, would undo the great wrong publicly inflicted, we again told Sec'y Goodman we could not compromise with conduct of which he had been guilty, repeating that we could accept nothing short of a public statement from him covering the admissions he had freely made to us. Mr. Goodman then said he would go direct to Columbia and after a conference with Pres't Robnett and Dr. Whitten would advise us definitely just what he would do, at the same time assuring us that he was certain the whole matter would be adjusted to our entire satisfaction and the two additional signatures be secured. We again told him that we accepted the statement as satisfactory on the part of the society without those signatures.

WHY ACCEPT AN UNTRUTH?

Just prior to his departure Mr. Goodman said he believed one vital mistake was made in not submitting the decision of B. B. D.–Gano committee to us prior to its announcement at Dec. meeting; that had this been done he believed we would have accepted the report. To this we replied **"No; we could never accept something we knew to be untrue and directly contrary to the facts;** that had we received any intimation that committee intended to bring in a report declaring them to be one and the same variety we would have requested that they **at least visit one orchard** in which the two varieties were growing side by side under same conditions, same soil, same cultivation, etc.; **interview at least one man who had grown the two varieties under such conditions. Had it been done such a report would never have been made.**

NO REASON WHY STATEMENT SHOULD NOT BE SIGNED

Hearing nothing from Mr. Goodman following the conference at Columbia, and having no confidence in any of his expressions as to righting the wrong further than necessary to shield himself, we wrote Dr. Whitten to know the result, receiving the following reply:

COLUMBIA, Mo., Apr. 26, 1904.—Your letter of April 25 at hand. Mr. Goodman, Mr. Robnett and I talked over the matter considered in your letter and concluded that there is no reason why the other two men concerned should not be perfectly willing to participate in the statement provided the matter was properly explained to them. Mr. Goodman left here with the understanding between himself and Mr. Robnett that he would wire Messrs. Tippin and Flournoy to meet him and Mr. Robnett in St. Louis at as early a date as possible this week and present the matter to them in such form that they would no doubt desire to add their signatures along with the rest. It was also agreed that just as soon as this could be done you would be notified. I have not heard to day what date has been set, although the understanding was that the men were to be wired in order that the thing be accomplished just as early as possible. Personally I shall be very glad to see these two men join us in this matter, and it seems that Mr. Robnett and Mr. Goodman are particularly anxious that they should. For that reason I think there will be no farther delay as soon as they can meet Mr. Robnett and Mr. Goodman in St. Louis. Mr. Goodman and Mr. Robnett agreed that in case Messrs. Tippin and Flournoy still declined to sign the paper as it is that they would wire me from St. Louis so I could have time to see them all there and have a chance at the matter before they leave. So that fixes things so they cannot get away without doing something. Very truly yours,—J. C. WHITTEN.

A SUDDEN CHANGE

We also wrote Mr. Robnett stating that we waived the signatures of Tippin and Flournoy, asking that statement be sent to us so we could avoid further delay; that Mr. Goodman's action was entirely an outside matter, and to this letter received following reply:

COLUMBIA, Mo., Apr., 26, '04.—Yours of yesterday at hand. I don't feel that I have any right to turn over to you the article signed by a part of the executive committee and committee on report, as the signatures were obtained on the ground that it was to be unanimous. For that reason we are trying to arrange for a joint meeting of the two committees. We have made concessions that I am sure were hard for some to make and now if you want Goodman to make other statements that would show all the other members of both society and executive committees to be a set of idiots I am not in. I never expected on recommending the signing of the article to have you exact of Mr. Goodman a whole lot more. I have authorized secretary to call a meeting as soon as he could be assured that all could attend. I don't want to place myself in shape to look as though I was working for you and against the society, Resp'y
D. A. ROBNETT.

This letter, indicating a remarkable change in the attitudo of Mr. Robnett, was a great surprise to us for the following reasons: First, we asked of Mr. Goodman no statement reflecting in any way or in any manner on any member of society or B. B. D.–Gano committee; instead, **asked only that the Sec'y acknowledge to the public what he had acknowledged to us** and thereby correct errors and wrongs which he had inflicted publicly and for which he alone was personally responsible. Second, this was the first intimation we had that any signatures were obtained on the stipulation that all should sign. We account for this change of attitude only on the supposition that Mr. Goodman misstated to Messrs. Robnett and Whitten the report of his conference with us while at Louisiana, misstated our proposition to him as to what would be satisfactory covering his personal actions. We had also written Mr. Goodman on same date, asking decision, and from him received the following:

HORTICULTURAL BUILDING, ST. LOUIS, MO., Apr., 30, 1904.—Yours was delayed a day because I am at the Hort. Bldg. now. At the conference with Whitten and Robnett it was thought best to not take any action until a meeting was held. The order was then made and Robnett said to ask you to meet them. The meeting will be held at the Lindell on Tuesday, May 3.
L. A. GOODMAN.

On receipt of this letter we informed Mr. Goodman we would attend the meeting at the Lindell on May 3, hut on reaching the hotel were advised by wire that meeting would be held instead at Horticultural Building, World's Fair Grounds.

LINED UP WITH THE SECRETARY

We finally succeeded in finding the meeting and learned that it had been in session for a day or two prior to our arrival. Instead of finding all ready to voluntarily right the wrong which they had freely acknowledged had been done, "set themselves and the society right," "placing responsibility where it belongs," (expressions freely used in correspondence and at other conferences) we found a committee whose manner and whose intentions with the exception of Dr. Whitten, bad undergone a complete change. Inquiring the purpose of the meeting we were informed by President Robnett that it was for the purpose of seeing if any agreement or understanding could be reached; that it was his understanding when he took statement to Kansas City that if signed, that should settle all matters, personal or otherwise, and that he had **secured signatures with this understanding** and **only after arduous labor, the exercise of great persuasive powers, devoting the larger part of the afternoon to this task.** This we could hardly understand in view of representations made to us before in Messrs. Whitten's and Robnett's letters as reproduced above, saying that statement had been signed **"with a general willingness,"** they having **"little trouble"** in getting signatures. We asked Dr. Whitten if he so understood when statement was agreed upon at Columbia, and he stated that he did not, his understanding being the same as ours that **personal differences were not waived** and that we expected to settle them as an outside matter. We found from the discussion which followed that the faithful had lined up with the secretary and were determined to protect him at all hazards; further that it was their intention to deliver statement in question only on the condition that we join in mutual admiration of the secretary, condone his offense, etc. This we could not do, believing it a duty we owed ourselves, the public in general, the members of the state society in particular, to let them know the record of this man. We made the request that he repeat before the officials of the society the admission he had made to us concerning the "striped apple" story, told at the U. S. Department. He answered that he had already told each of them, making same statement to them that he made to us at Louisiana. We again made the request, stating if he had told the same story there could be no objection to repeating it in the presence of all. **This he declined to do.**

During the discussion some stated that they had about reached the conclusion that those present had no authority to take any action, that it was a matter which, instead, should be referred back to the society. We called at-

tention to the fact that this position was untenable and at variance with their representation up to this time; that the statement was made by individuals of the executive and B. B. D.-Gano committees, **that it was their own proposition,** they having taken the initiative, etc. Becoming convinced that the program had been arranged prior to our arrival, we reminded them that we were there **only by invitation;** that evidently we had no business there and would at once retire that they might discusss the matter among themselves and advise us definitely what they intended to do; that we would then know whether their oft declared intention to right the wrong and injury done us, their intention of setting themselves and the socicty right meant anything, or whether we must look for vindication in another way. A few minutes later we were informed hy Pres't Robnett that the committee had adjourned, having reached the decision that the statement would not be delivered, but they would refer matter back to the society, taking no action at this time; further that we might consider the matter in just the same shape it was prior to the visit made us by Dr. Whitten and himself, at which time they informed us they would take the initiative in this movement. We informed Mr. Robnett in plain words that if the executive committee desired to make Mr. Goodman the issue, preferred to protect him in spite of the full knowledge of what he had heen guilty, rather than right the wrong which they had freely acknowledged, we should give the public and the members of the state society a full history of the facts. This we now do.

One Among Several

In making puhlic these developments our greatest regret is on account of the connection of Dr. J. C. Whitten. We regard him as an honest, honorahle gentleman whose motives and pu. poses have been pure throughout the whole proceeding. We regard him as the only one of the three composing the Black Ben Davis-Gano committee who stood unprejudiced at the time of the appointment, hence the only one who had a right to serve. We know he has made a mistake in pronouncing the two varieties identical, a decision we believe he will reverse when he has an opportunity to pass upon true samples of each grown under similar conditions. We believe he has been mislead, has been both imposed upon and deceived through many phases of the investigation, and being a very busy man has left much of the "long and arduous lahor" expended, to other memhers of the committee—such as the trip to Washington City, submission of samples there, etc. Further, we know his desire to right the wrong was genuine; as an evidence we submit a letter received from him following the conference at St. Louis:

Columbia, Missouri, May 8, 1904.—I have just returned from St. Louis and while I have perhaps reached a point where I can do little or nothing more toward immediately helping to secure any action toward righting the wrong that has been done your firm as a result of our report, still I am prompted to bring two suggestions to you for your consideration.

After sounding all the horticulturists who were in St. Louis during the past week I am confident that there is a very general regret among them of the injury that has been done your firm as a result of the report and the use that has been made of it. Many of them are genuinely sorry that it has taken place and I believe would be glad to voluntarily take action at the next meeting of the society that would do you justice so far as the society is concerned. In fact I believe that there was never a time when so many feel keenly that something is due you on account of stings that have been given you by some of the individual members of the society. I believe that this feeling is strong enough that if you were to come to the society and call attention to the wrong done, even unofficially, and join in with the society that the time is opportune for you to get their support in an emphatic way that would hardly have been noticeable at any previous time. Most of them really want to do something that will atone and more too, for any injury you have suffered in the past. If there are any individuals who do not share this feeling they would be hopelessly in the minority. I might mention Messrs. Dutcher, Gano, Robnett, Evans and a good many others who would push any amicable movement on the part of the society in your behalf. While I realize that the statement may not appear sound to you, Mr. Goodman also would, I feel sure, work conscientiously for any amicable expression in your behalf. He told me that if you could eel your way clear to join the meeting on tbe same ground that some of the other nurserymen have done that the society could and would do you enough good to more than atone for this injury.

On the other hand, if action comes in a form to stir up animosity, it is a question in my mind as to how far injury to both parties may not be precipitated. If competitive nurserymen can make it appear that there is something coming that will tend to disrupt the society they may get sufficient strength on their side to do a lot of harm. Mr. Goodman has a good many friends who would support him in a rumpus, who would now voluntarily favor action in your behalf if it came in an amicable way. Understand, I have no personal motive in this suggestion. I am simply interested in bringing about two things—justice to your firm for the injury you have suffered and to save the society if possible from the disruption that might follow if charges are made and a rumpus should follow.

I do not know whether or not this side of the affair has come to your mind in the same form tbat it has to mine but it seems to me that if charges are preferred, and the society members get the idea that the affair is a fight, harsh things will be said and done. Two factions will be formed. Granted that you substantiate your charges and win out by a majority, there will still be a good many men who are more or less prominent among fruit growers who will feel bitter toward a fight that tends to disrupt the society and tney may continue to personally go on fighting and throwing reflections because they felt there was animosity behind the movement.

On the other hand, there are a good many men who, if the thing comes up in an amicable spirit, would heartily join hands with you, and make it a point to try to undo any injustice you have suffered, who would take the other side if they felt there was anything in the wind that would result in hampering the prosperity of the society.

Understand I do not for a moment myself consider that any charges you would make would be intended to disrupt the society. I do not for a moment think that you have any less regard for the prosperity of the society than has its most zealous supporters. I understand your motives fully as being simply to secure justice that is due you. I recognize that as your right as I have before stated and as I shall continue to contend. I fear however that there are some who would be led to look at it in that light and who might consequently lend their influence against you, who would favor you if the matter comes up in a way to lead to pacific action by the society rather than to antagonize it.

I hope I have made my point clear as it appears to my mind. I assure you that my motives in writing this letter are as much to ward off any farther action by society members that would be hostile to your firm as to avoid friction for the society itself. Sometimes a body of men will gladly do a thing voluntarily which they would not feel under obligations to do under severe pressure. Do you think it would be in keeping with your interests to sec, on the first day of the meeting, what action and what attitude the society will assume in your favor; and then if that is not satisfactory, you still have time to press your cause in any way that you find necessary? I do not press this against your judgment but only state it for your consideration. Assuring you of my best wishes in whatever action you take,

Very sincerely, J. C. Whitten.

A Concession

Knowing that Doctor Whitten was sincere in his suggestions, tho feeling that we could expect nothing further from the executive committee, we answered that it was our intention to go ahead and publish the facts. The letter, however, was followed by a visit from Mr. Irvine of the Western Fruit Grower, who strongly urged that we delay action and await the meeting at St. Louis, as he believed we would receive justice at that time; stating that he had just come from a conference with Dr. Whitten and that hoth urged that we take this course. Mr. Irvine urged that we waive the demand that Mr. Goodman give separate statement covering his personal acts and follow the suggestion made by Mr. Goodman that one statement be written so as to cover all points, this statement to be signed by executive and Black Ben Davis-Gano committees and presented to the society on the first day of the meeting with the recommendation that it be endorsed by the society.

Refusing to delay the matter further unless with reasonable assurance that something would be done, Mr. Irvine stated that he would go and see Mr. Goodman, laying before him the plan as suggested hy him and Dr. Whitten. Following this visit we were advised that Mr. Goodman fully endorsed the plan, stated he was sure the committee would act and everything be made satisfactory. On receipt of this advice we decided to await the action of the meeting, receiving an invitation later from the president of the society to meet with the members of executive and Black Ben Davis-Gano committee on Monday, June 6.

We met with them and soon found that delay had been useless; that the temper of the committee had again **undergone a complete change;** that instead of recommending to the society a statement more comprehensive than the one they had signed hefore, including points which we wished covered if we were to waive a separate statement by the secretary, it was their desire to issue a statement that meant nothing, that covered none of the unscrupulous acts, deliberate misstatements, etc., which had been freely acknowledged to us before—in short a statement which would not do justice. In this conference we called attention to the many actions which had put us in a wrong light, the many contradictory statements which had heen made by different members of the executive committee, all to no avail.

The Secretary's Hand Again Disclosed

At this conference, however, we elicited the information, the statement being made by Col. Evans, that the Black Ben Davis-Gano committee had **been instructed** to visit the department at Washington immediately after Mr. Goodman's visit there; that this instruction was given the committee by the **president and secretary;** that no member of the committee had made the suggestion that this visit be made the department, but **acted on instructions.** The further information was elicited that at the time instruction was given no member of the committee was informed or had any knowledge of the fact that Mr. Goodman had previously visited the department. This was news indeed, coming as it did from inside circles; surprising indeed in view of the fact that hoth president and secretary had stated to us personally that they had not attempted to interfere in the work of the committee, had offered no suggestions, in fact had left the committee severely alone after the appointment. The further information elicited at this conference was that apples submitted for the inspection of the department pomologists were from samples taken by Col. Evans, Mr. Flournoy's samples having been mixed up or lost in cold storage after his return from Ark. None of the samples taken had been in the charge of Dr. Whitten, neither did he accompany the committee to Washington.

A Milk and Water Statement

Having refused to accept as satisfactory the statement or resolution offered us, the conference came to an end. This resolution was offered in the meeting of the society the next day and passed, we taking occasion at the time to recite the initiative which had led up to the statement, reading the former statement which had heen signed by all except two, attempting to recite the full facts in regard to it, hut were denied this right, although stating that this was the first opportunity we had had as an interested party to present our side of this question to the society; stating that while we had suffered a great injustice at the hands of the society we believed this to be unintentional on the part of the society **as a whole;** however, did believe that the society had heen used by the secretary and other interested parties to secure this end; that if the society was determined to endorse this action, with a knowledge of a part of the facts refusing to hear the remainder, we would for our own protection publish the full facts that the members not present and the public might know them.

No Satisfactory Explanation

A further development of this meeting: When the treasurer's report was read we called attention to one item of receipts reported as simply "$72.00 received from L. A. Goodman," asking the treasurer from what source this $72.00 was derived; he stated that he did not know; that he had simply received it as a balance from L. A. Goodman on January settlement; this answer in spite of the fact that all expenditures for January were itemized, hence could not possibly be a balance; in spite of the fact that we had in our possession a letter from the treasurer stating that the $72.00 refunded from Maryland Society for expense account of L. A. Goodman **was to be reported at this meeting.** We further asked the treasurer if he had any other funds in his possession or knew of any other funds belonging to the society other than those reported; he stated he did not. Being unable to reconcile these statements we next appeared before the committee appointed to examine treasurer's report and endeavored to ascertain the source of this $72.00; could get no information concerning it. Inquiring further as to any additional funds belonging to the society which were not reported by the treasurer found some who seemed to have a vague knowledge that there were other funds but could not find out in whose possession they were, who was acting as custodian, who was drawing checks against this fund, by whose authority they were acting, etc. Hence, to secure this information we were obliged to make the inquiries in open meeting when the finance committee made report. This elicited the statement by the secretary to the effect that $72.00 had been returned to him from the Maryland Society exactly one year before treasurer reports it as having been turned over to him, the secretary stating that he had used it to cover payments made by him, but he failed to explain why it had not been reported to the society at the two meetings which intervened, although stating that he made settlement with treasurer each six months.

Committee Appointed to Investigate Funds

We also elicited the information that there were funds belonging to the society other than in the treasurer's hands, etc. The following motion was made by a member of our firm and adopted by the society: That a committee of three be appointed to investigate this fund of $1000.00 or more for which no report was made at this meeting by the treasurer, ascertaining who is the custodian of the fund and by whose authority they are acting; ascertaining from what source the fund was derived, tracing it from its incipiency down to the present date; informing the society who has been handling it, what additions have heen made to it, who have been drawing checks or warrants against it and for what purpose such dishursements have been made. This committee further to have authority to at once take possession of this fund and turn it over to the treasurer who is the proper custodian of all funds helonging to the society.

Space forbids giving a full report of what occurred during the meeting; suffice it to say that every effort was made to prevent the facts being hrought out concerning the $72.00 in question; also the facts concerning the unreported fund until the inquiries made in open meeting on the last day of session; further an attempt was made to put us in the position of having made charges, when in fact we had made none, but simply asked for information.

This recital of facts covering late developments we make known in order that the puhlic may view some of the details of the scheme conceived by the secretary of the state society and carried through by the aid of unscrupulous methods employed; a scheme conceived for the purpose of securing the official endorsement of his personal opinion and to injure our business. He found this easy by reason of the fact that he has been so long allowed to run the society, a fact well known to all who are familiar with the workings of the society; so well known, so well recognized, that even the present president when he made his speech of acceptance of the presidency at last December's meeting, stated that he hoped the secretary would continue to run the society in the future as he had in the past. He not only ran the society, but used it for years to punish those who refused to accept his dictation, but rewarding those willing to follow his call and do his bidding. That such conduct will be endorsed by the membership of the state society we are not yet ready to believe, although the select coterie who stand so close to the secretary are willing to hend every effort, stopping at no length to withhold the facts, prevent publicity, showing a desire to have the society endorse him, no matter to what extent he has been guilty of wrong-doing. This is evidenced by the many contradictory statements made, the many contradictory letters which have been written. That the Secretary has been guilty of wrong none can deny as he has admitted it, not only to us personally, but to the memhers of the executive committee; further admitting that **he has been mean** in his attitude toward us, to others beside ourselves. That he collected his expense account to the Maryland society meeting from both Missouri and Maryland he has admitted and the printed reports so show; he has admitted that although repaid in the month of January, 1903, that he did not return it to the treasurer of the Missouri society until January, 1904, although repeated settlements were made between himself and the treasurer in the meantime, and two state meetings intervening, at which such settlement should have been shown by the treasurer's report.

Now to those interested and who have not yet made up their minds as to whether Black Ben Davis is a separate and distinct variety from Gano we invite attention to the statement which was signed by the society officials and members of Black Ben Davis-Gano committee, with the exception of two, which statement we believe will remove any doubt hitherto entertained. We call attention to the fact that in this statement they recognize the influences which brought about this investigation on the part of the society and acknowledge the great mistake made when the society took hold of it; they further recognize that in addition to other societies, lead ng horticulturists, fruit growers, etc., differing from the opinion expressed, that the **later evidence, later testimony** brought out by a subsequent report, makes it, **even in their** own minds, an open and debatahle question and worthy of further investigation. We further invite your attention to the statement that while they had true samples of Black Ben Davis from which to make the test, that **they are not sure of the Gano,** as the source or origin of the trees from which they obtained them was not traced. We call your attention further to the statement to us personally that in all of their investigation but one type of Black Ben Davis had been found but several different types of Gano were found. If not satisfied when you reach this point we invite your attention to the indisputable evidence brought out by the Arkansas Society, proving beyond question that the original Black Ben Davis tree was of seedling origin, the further evidence and testimony of actual fruit growers who have grown the two varieties **side by side, in same orchard, under same conditions, who pronounce them separate and distinct and Black Ben Davis the superior of the two.** This testimony comes not from any one section, but scattered throughout the country. We ask further that you keep in mind the fact that with all of the investigations made, with all the publicity which this controversy has had, not a single person has yet been found who pronounces the two varieties one and the same who has made any examination other than of samples, the origin of which they did not know; not one has heen found out of the many who have fruited the two varieties side by side, under similar conditions, that does not pronounce them **separate and distinct.** This evidence we will furnish anyone upon request. We desire to say further that not a single statement has been made in this recital of **facts** which cannot be substantiated.

Only Fair Treatment Asked

In conclusion we wish to say as nurserymen that we ask no favors at the hands of the state society. We however, with two generations of memberships, as well as our business interests, do ask and insist upon fair treatment, hoth as members and as nurserymen. This we have not received for several years. So far as the society as a whole is concerned we are still satisfied that this admitted injustice has been an unintentional one. We believe rather that the society has been imposed upon and used as stated above. We emphatically deny the right of any officer, any individual, any set of men, to use the society for their personal ends and to the injury of others. Neither do we believe the rank and file of the membership will endorse any such procedure. It is to acquaint them with the facts in the case that we submit ahove statement. To the charge made by the opposition, that, feeling sore because decision went against us, we are now trying to make trouble and disrupt the society, we desire to enter the most emphatic denial. To a society run as it should be, for the purpose for which it was organized, with officials who will follow the constitution and by-laws, expending the funds appropriated by the state in the interests of the fruit growers, we yield in loyalty to none and none will give such a society heartier support.

STARK BRO'S NURSERIES & ORCHARDS Co
Louisiana, Mo.

THE WESTERN FRUIT-GROWER

ST. JOSEPH, MISSOURI

An Illustrated Monthly Magazine For Progressive American Farmers

JULY 1904
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Fruit Without Blossoms.

Over one year ago I noticed something in The Fruit-Grower with regard to a tree that bore apples, but never blossomed and if I recollect right the matter was passed upon as a joke, or perhaps I should say as a fraud. If by blossom the writer meant the flower that appears upon the tree, then I would say, No, it is neither a joke nor a fraud, but a real thing that has materialized and which I have been for over fifty years quite familiar with. In this same mail I send you a package containing a sample of what appears instead of the usual blossom. These I have taken from a tree in an orchard on the farm on which I was born and have lived ever since. When my father bought the farm in 1835 there was an old orchard on it, and near the center of it a large tree, then rather past its prime, to which my mother's attention was called by the following remarks of the lady of whom the farm was bought: There is a tree that bears apples every year, but never blossoms. Carefully watching the tree for several years my mother found that the lady's remark was a fact in the sense in which it was meant. This old tree stood until about twenty years ago when it was blown down in a severe wind storm. It was a prolific bearer of a large, sweet, juicy apple that ripened about the 1st of September and in my boyhood days I well remember the multitude of bees and all kinds of stinging insects that gathered there to feast upon the juice of the fully ripened apples that covered the ground and how valiantly they defended themselves against us boys as we gathered there in our bare feet, and I remember also of several nurserymen who over forty years ago got grafts and buds from this tree and sold trees in our county that were grown from them. Some of these are still living.

The apple was something in shape like the York Imperial, very many of them having one side fuller or larger than the other. The skin when ripe was of yellow color, covered with streaks of light red. In our orchards today we have a tree that grew from grafts taken from the original tree and set by my brother. This tree being in the decline, and fearing that we might lose the variety I wrote Messrs. Stoner Brothers of Battlefield Nurseries last summer, sending them apples to sample and wood from which to bud and they are now growing trees of the variety under the name of Johnston's No Blossom. In my humble way I can describe this apple as I know it no better than in the following language: You know there are some things in nature that were or seem to have been created for ornament alone, and other things that seem to have been created for what they were worth, without regard to beauty of appearance or in other words there are some th'ngs that seem to exist only for the show they make, whilst there are others that exist for the benefit of all around them (pardon me if I draw this division line down through humanity and even through the readers of the Western Fruit-Grower), without any special regard for the beauty of appearance that has been so lav'shly bstowed upon the former. This apple seems to belong to the latter class. It seems to possess nature's works, but to have been robbed of nature's beauty. It seems to possess all that is needful of the blossom but lacks the beauty of the flower to please the eye. In sending you these blossoms I would ask you kindly to explain in what way they are different from others, excepting the flower.

ED. C. JOHNSTON.

New Germantown, Perry Co., Pa.

This letter was received some time ago, and the blossoms which accompanied it were, as Mr. Johnston has said, without the petals, or the attractive part of the blooms. It is certainly a freak of nature, and, naturally, the blossoms are self-fertile, for there is no flower to attract the insects, thereby bringing about cross-fertilization.

In your April number on page 25, is an item (another specimen of free advertising), "A telegram in a daily paper from Grand Junction, Colo., annaunces that John T. Spencer of that place, after experimenting for many years, has produced a seedless apple, etc."

Now I write to tell you that the seedless, coreless and bloomless apples are all one and the same thing, and have been known for forty years or more. If you will write to Mr. L. H. Bredow, Strasburg, Ill., R. F. D. No. 2, or Mr. Hiram Russell, you can obtain specimens of the fruit this fall or wood for grafting, or buds in budding time. I have exhibited the seedless apple at the county fairs in Shelbyville, Ill., twenty years ago and sold trees of that sort to farmers and fruit-growers. The trees are hardly good growers, moderate bearers and must be planted among other trees to be pollenized. It is without blossoms, just forms buds, and develops a good sized fruit, greenish yellow, very open at calyx, seldom a sign of core or seed. Not one apple in a hundred would have a seed; in size and shape between a Yellow Bellflower and Grimes It is a real curios'ty of fair quality. I set out two trees eleven years ago on a new farm at Milo, Mo., but have not been on that farm to see if the trees are yet there. Will go soon and find out. Surely such an old thing ought not to be run onto the people with flourish of trumpets and wire messages. I know J. T. Wallace, Neoga, Ill., well and he can verify what I say, by inspecting Hiram Russell's orchard just six miles west of him. Perhaps L. H. Bredow still propagates the apple in his nursery.

A Mr. Louis Baumgarten first brough sc'ons with him from Ohio to Shelby County, Ill. Also Mr. Sam Moon, near H. Russell's, has as fine seedless persimmons as I ever saw or tasted. There is not very much new under the sun.

WM. F. NEHRING.

Milo, Mo.

A New Late Strawberry.

Mr. J. J. Reynolds, Maysville, Mo., recently brought to The Fruit-Grower office some specimens of a new late strawberry, a seedling, which he has named the Gilbert. According to Mr. Reynolds, this berry is a cross between Crescent and Nic Ohmer. It has the foliage of Nic Ohmer, and is a healthy, strong plant; fruit is somewhat the shape of Nic Ohmer; quality not so good as Nic Ohmer, but still very good; very prolific bearer; ripening season is later than Gandy, ten days later than Aroma, later than Rough Rider, Midnight, or any other of the late ones; fruit is light red in color, of splendid form, and very firm; plant is a perfect bloomer.

Mr. Reynolds has tested the variety for several seasons, and the samples he gave us show the berry to be very late and very firm, making it a good shipper.

The Gonzales Plum.

Some of the Texas nurserymen had some very fine specimens of this new plum on exhibition at the recent meeting of the American Association of Nurserymen. This plum is said to be a cross between one of the Japanese and of our native plums. It is large, a very dark red, and said to be of very good quality. Those who have seen the plum in Texas say it is one of the coming varieties.

Platte Purchase Society Meeting.

The August meeteing of the Platte Purchase Fruit-Growers' Association will be held at Bean Lake, Platte Co., Mo., on line of Kansas City, St. Joseph & Council Bluffs Railway. This will be the first outdoor meeting of the year of this society, and should be well attended.

Booklet on Bee-Keeping.

The Fruit-Grower has received a booklet, entitled "A Morning With the Bees," from the A. I. Root Co., Medina, Ohio, which will be found interesting to all bee-keepers, or to all who are interested in this useful insect. This is one of a series of booklets which the Root Company sends out free to those who inquire for same, and we would recommend that Fruit-Grower readers make application for them, for they cannot fail to be pleased with them. Address the firm as above, mentioning The Fruit-Grower when you write.

John Hagen, Chadwick, Mo., says he has a hard time trying to get subscribers for The Fruit-Grower in his neighborhood. "There are only two fruit-growers here; I gave them copies of The Fruit-Grower and they subscribed, and I have reached the limit. The Fruit-Grower is my friend; I find Major Holsinger, and from so many so much good from my old comrade, other good men."

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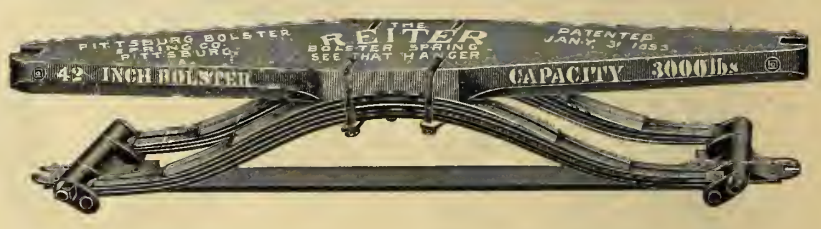

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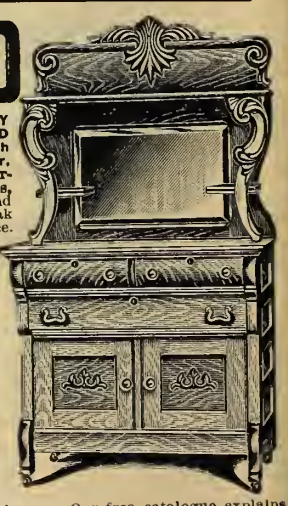

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The Western Fruit-Grower
An Illustrated Monthly Magazine For Progressive American Farmers
Volume Fifteen ST. JOSEPH, MISSOURI, JULY, 1904 Number Seven

Meeting of American Association of Nurserymen at Atlanta, Ga.

The twenty-ninth annual meeting of the American Association of Nurserymen, which was held in Atlanta, Ga., June 22 and 23, was one of the most enjoyable the association has ever held. This was because of the side trips taken by the members after the adjournment of the meeting. The attendance was perhaps not so large as usual, but it was very good, and more of the members brought their wives this year than for many years past. The social features of the meeting were enjoyable, and everyone seemed to have a good time. The side trips taken after adjournment are referred to in another article in this issue.

Officers elected for the ensuing year were: President, E. W. Kirkpatrick, Texas; vice-president, C. L. Watrous, Iowa; secretary, George C. Seager, New York; treasurer, C. L. Yates, New York.

The next meeting of the association will be held at West Baden Springs, Ind., this place having been chosen over Portland, Ore., which made a strong bid for the meeting.

The meeting was called to order by Mr. C. L. Watrous of Des Moines, Ia., who explained that President N. W. Hale has been nominated for congress in his district, and could not attend on account of political engagements. Vice-President Weber was to have presided, but had been taken ill, and was unable to leave his room. Mr. Watrous introduced Mayor Howell of Atlanta, who welcomed the members in a most happy speech. Mayor Howell is a typical Southerner, and in his welcoming speech he told of the growth and development of the new Atlanta, after the visit of the Northern army during the late war. Mr. Howell's speech was full of patriotism of the highest type, and it was responded to in like manner by Mr. Watrous, who told of the hard time he had in trying to get into Atlanta about forty years ago, and of the very warm reception he had received at that time.

Governor Terrell was to have delivered an address, but was compelled to be in his office, owing to the fact that the Georgia legislature met at the same hour as the opening of the convention.

President Hale sent his annual address. He said the past season had been a prosperous one for nurserymen generally, and the outlook is good for the season ahead of them. He recommended the pushing of the proposed national legislation covering the inspection of nursery stock and governing the shipment of the same. He also recommended that the dues of membership be increased to $4.00 per year. This latter recommendation, it may be said here, was afterwards reported unfavorably by the committee to which the address was referred, and the dues will remain $2 per year, as heretofore.

The reports of the secretary and treasurer showed the association to be in good financial condition. There has been a gradual increase in the receipts of the organization, and there is a snug sum in the treasury at the present time.

E. Albertson of Indiana read a paper on the subject of "Mutual Insurance for Nurserymen," which told of the work of his committee during the past year. Insurance rates for nurserymen are too high, and the members have been trying to devise some plan for mutual insurance, and the work of Mr. Albertson and his committee, it is believed, will lead to the adoption of a safe and satisfactory plan. Mr. Albertson's paper presented statistics showing there has been a very low loss among nurserymen, indicating that great care is taken to prevent fires. This committee was continued, and will investigate the subject further and report a year hence.

Prof. John Craig of Cornell University made an interesting talk on "The Influence of Nurseryymen in Regard to the Planting of Shade Trees." He told of the influence which can be exerted by a nurseryman, and of his responsibility along this line. The nurseryman should know what trees will succeed in a given location, and these trees should be recommended to planters. Many tree planters want quick-growing trees, yet these are not always the best, and the nurseryman should endeavor to secure the planting of those trees which will prove best in the end. An instance of the demand for the quick-growing trees is found in the planting of the Carolina poplar. It is a quick grower, but has many faults, and is not a tree which should be planted where better ones nursery grounds beautiful with artistic planting of trees and shrubs. Thus he can teach by precept and by example.

Mr. McFarland, too, made a plea for our native American shrubs and plants, stating that nurscrymen should secure these, and recommend them to their customers. Some of the most beautiful things which can be planted are growing wild in our woods, and yet when one wants to plant them, nurserymen are unable to supply them, and the planter has to go to the woods and dig them up. Nurserymen should get in line with this work at once, Mr. McFarland said, for beautiful America is coming.

After adjournment of the first session representatives of the different states met and nominated vice-presidents for their respective states. Among those chosen were the following: Missouri, W. P. Stark, Louisiana; Kansas, E. P. Bernardin, Parsons; Iowa, Samuel Lorton; Nebraska, George Marshall; Oklahoma, J. A. Lopeman; Arkansas, George W. Scruggs; Indian Territory, J. A. Taylor; Ohio, S. R. Fergus; New York, Theo. J. Smith; Michigan, C. A. Il-

ARRIVAL OF SPECIAL TRAIN AT J. H. HALE'S PACKING SHED.

genfritz; Illinois, Irving E. Spaulding.

Mr. Watrous, chairman of the committee on legislation, reported that a national inspection law would have passed at the last session of congress had it not been for the opposition of some of the nurserymen, particularly of Rochester, N. Y. The committee had investigated the matter of hostile legislation, and had found that the interests in some sections must be lined up before any progress can be made.

Mr. Albertson, from the committee on transportation, reported the work of his committee. He recommended the appointment of three special committees to meet with the classification committees of the Eastern, Southern and Western associations of railway men. One change which is very much desired, and which should be made at once, is changing tree seedings from the list of plants and placed in the classification of trees. This will mean a great reduction in rates, which are unreasonable when the seedlings are classified as plants.

G. H. Powell, of the United States Department of Agriculture, made a talk on the subject of "Picking and Storing Fruits." This was along the line of the address Mr. Powell delivered before the Missouri Horticultural Society last winter, and which was reported in The Fruit-Grower at that time. The points brought out by Mr. Powell were the following: Let the fruit come to full size and full color; wrap fancy fruit, cool quickly, store at once at 30 to 32 degrees, and sell before deterioration sets in. Fruit which has been forced in growth, or that which is overgrown, will not keep so well as normal size specimens. This extra size may be due to fertilization or to culture, but the result is the same. Fruit from young trees is usually larger than that from older trees, and accordingly there is a great difference in keeping quality; sometimes as much as five months difference in the period of keeping has been noted between fruit from young trees and that from old trees, grown alongside and under same conditions. Likewise it has been found that where there are few apples on a tree they attain larger size, and then do not keep so well as when the fruit is smaller. York Imperial apples from young trees scalded and went down in December in cold storage, while the apples from 26-year-old York Imperial trees keep in perfect condition until April.

"The character of the soil in which the trees are grown also has an important bearing upon the keeping qualities of the fruit," said Mr. Powell. "Apples grown in sandy soil are frequently larger and present a better appearance than those grown in clay soil, but they will not keep so well as the latter. Another thing we need to remember is that fruit will ripen much more rapidly off the tree than on the tree, at the same temperature. Delay in storing apples after they are picked will cause early ripening, and in the case of pears delay in storing will cause rotting at the core. A delay of even a few hours in getting peaches into refrigeration will cause loss. I have seen peaches loaded in cars while the fruit was at a temperature of 100 degrees. This is all wrong, and the fruit should be cooled as much as possible beforehand. Meat shippers would not put their meat into refrigerator cars while the carcasses are still warm, and if growers had some plan whereby they could lower the temperature of their fruit to, say, 45 degrees before putting in the cars, it would be much better for the fruit."

N. H. Albaugh indorsed all that Mr. Powell had said, and called attention to the fact that reports of fruit arriving in bad condition and selling at low prices are frequently due to the fact that the fruit was in bad condition when it entered the cars.

"Yesterday was a hot day," said Mr. Albaugh, "the sun being very warm; yet I saw a load of peaches which had been hauled seven miles in the hot sun, before reaching the loading station. The peaches were picked in the morning, handled during the day in the packing shed, then hauled seven miles in the sun, and when the load arrived at the cars it may be necessary to wait for a time before being able to reach the platform. Now, how can this fruit arrive on market in good condition? It was in bad condition when it left home. And yet some men plant orchards away from the railroad, with no shipping facilities, with apparently no thought of how they are going to market their fruit when they get a crop. Fruit and especially peaches, must be handled quickly, and the one who is not prepared to do this will fail. The first few hours after peaches are taken from the trees are most important."

James M. Irvine of The Fruit-Grower was on the program to discuss Mr. Powell's paper, and said the experience of practical men in the storing of apples has been the same as that of Mr. Powell; the fruit must be rushed to storage as rapidly as possible. He told of the method adopted by the Artesian Ice and Cold Storage Company of St. Joseph, which stores Jonathan apples on its own account. After years of experience, this firm puts the first-class Jonathan apples carefully into barrels, but does not even wait to head the barrel. Instead, the top of the barrel is covered with burlap, fastened down with the top hoop, and all are rushed to storage at once, the fruit picked each day being in storage before night, if orchard is near at hand, or by morning, if fruit has to be shipped by train. This fruit is never headed in barrels, if for local market, for the pressing of the apples causes considerable loss.

"This subject of storage for apples is an important one, from the nurseryman's standpoint," said Mr. Irvine, "for the reason that it will have an important bearing upon varieties which are planted in commercial orchards. With the introduction of cold

can be grown. Another is the box elder, a good tree in many Western locations, but not a tree which can be recommended in most places. A better tree is the soft maple, and a still better one is the hard maple.

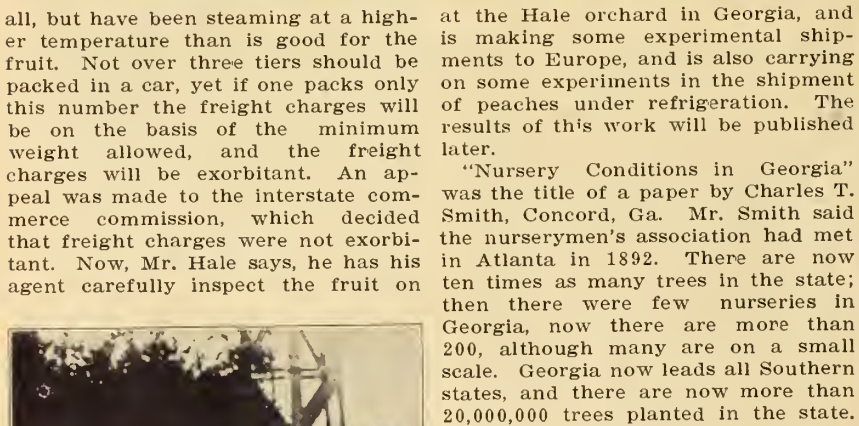
"I would make an especial plea for our native American trees," said Professor Craig. "The nurseryman can do a great work in pushing these native trees, which, as a rule, are better for us than the imported novelties so much sought after by some persons. In Atlanta I notice a great many Scotch elms, and yet our native American elms will be better in most places. One can tell whether a good nurseryman has been through a locality by the trees which have been planted, and the ways in which they have been planted."

Professor Craig concluded by asking if the nurserymen cannot do more than they are doing in leading the people to plant proper trees about their homes and in the parks. "Let us make a permanent crusade," he said, "against box elder, Carolina poplar, and trees of that sort, and instead recommend our best native American trees. Let the nurserymen show how these trees should be planted, and better results will be attained."

J. Horace McFarland, president of the American League for Civic Improvement, followed with a talk along the same line. He told of the merging of the organization of which he is president with the American Park and Outdoor Art Association, and predicted the coming of "beautiful America." In this work of improving and making our country more beautiful the nurserymen have a most important part. A good nurseryman can lead the people along right lines and can elevate the people, while a poor one can degrade his community. If there is an association in the community which is working to make the country more beautiful, the nurseryman should work with this organization. The good nurseryman will begin this work by making his own

storage a commercial planter now considers the storing qualities of varieties which he will plant. Formerly the Johathan was not largely planted, for its season was too short, it would not keep. Now that it has been proven to be one of the best storage apples the demand for trees has increased, and will continue to increase. Another variety which has been affected by this investigation is York Imperial. It was at first condemned by many because it was said the fruit would not store well; it 'scalded' in storage. Now, however, it has been found that if the York comes to full development on the tree, and reaches its full color, the fruit will store well; it is the immature, pale-color York appples which scald worst in storage."

J. H. Hale followed in a dicsussion of the paper, in which he complimented Mr. Powell's work very highly. When it began no one knew anything about cold storage; now a great deal is known, but there is demand for much further investigation. Mr. Powell's experience, he said, had proven that a peach which becomes fully ripe, and yet not soft, on the tree, will carry to market better than a peach which was immature when picked. Mr. Hale said his own experience had been that there is great room for improvement in refrigerator car service. The minimum weight allowed in refrigerator cars requires that the crates of peaches be packed five tiers high. When the fruit arrives on market the two upper tiers of crates will be in bad condition; they have not been in refrigeration at



VIEW OF PEACH ORCHARD, BERCKMAN BROS., MAYFIELD, GA.

all, but have been steaming at a higher temperature than is good for the fruit. Not over three tiers should be packed in a car, yet if one packs only this number the freight charges will be on the basis of the minimum weight allowed, and the freight charges will be exorbitant. An appeal was made to the interstate commerce commission, which decided that freight charges were not exorbitant. Now, Mr. Hale says, he has his agent carefully inspect the fruit on

A SNAP SHOT AT A CORNER OF THE BARBECUE AT BERCKMAN BROS.

arrival, and claim for damages will be presented for all fruit which has been damaged in transit because of poor refrigeration.

"I want to urge that we all work for a greater appropriation for this work which is being carried on by the Department of Agriculture," said Mr. Hale. "It is a great work, and requires more money. Mr. Powell's work should have $50,000 for this year, and we must help the Department to get it."

Mr. Powell was asked as to the profit of shipping peaches from this

PRETTY PEACH PACKERS, ALBAUGH FRUIT FARM.

country to Europe. He said it was promising. If one can get the fruit into refrigeration here in good shape, it can be exported safely, and has brought good prices on the other side. The matter is yet untried except in a small way, and one must not jump at conclusions. It may be said here that Mr. Powell is spending the summer at the Hale orchard in Georgia, and is making some experimental shipments to Europe, and is also carrying on some experiments in the shipment of peaches under refrigeration. The results of this work will be published later.

"Nursery Conditions in Georgia" was the title of a paper by Charles T. Smith, Concord, Ga. Mr. Smith said the nurserymen's association had met in Atlanta in 1892. There are now ten times as many trees in the state; then there were few nurseries in Georgia, now there are more than 200, although many are on a small scale. Georgia now leads all Southern states, and there are now more than 20,000,000 trees planted in the state. Only about half are in bearing now, yet there will be between 4,000 and 5,000 cars of peaches shipped from Georgia this season. Formerly growers planted Elberta almost exclusively, but now are planting other sorts.

"The Elberta peach originated in Georgia," said Mr. Smith, "and has become the leader. The man who will introduce an earlier or a later peach as good as Elberta can move on Easy street. Several varieties have been tried, but none have quite filled the bill."

Mr. Smith said June-bud peach trees are an important item with Georgia nurserymen. Another new line is growing pecan trees, and all are now growing these in nursery, and the demand for the trees is heavy.

"The Nurseryman's Label" was the title of an interesting paper by Mr. John C. Chase of New Hampshire. He told of the development of the label, and the different styles which are used for different purposes.

The growing of stocks for nurserymen was discussed by Hiram T. Jones of New Jersey, Thomas B. Meehan of Pennsylvania, Andrew L. Causse, New York, and others. Mr. Jones said that in some lines we cannot compete with the foreigners in the growing of stocks. Mr. Meehan, however, took the position that in most lines better stocks can be grown in this country, and that more attention should be paid to this work, for it often happens that serious pests are introduced from abroad on imported stocks.

G. T. Taber of Florida talked about growing the nursery stock in demand in his state, particularly in regard to the propagation of the orange trees.

Mr. Kirkpatrick, president-elect, delivered his inaugural address, which, on motion, was recommended to all the Georgia papers for publication. The session then adjourned and the Greater Georgia Association met with the members and listened to an address by Mr. Sargent, United States commissioner of immigration, on the desirability of foreign immigration and the plans which should be made to care for it in the best manner.

At about 2 o'clock special street cars were provided, and the members of the association, together with the members of the Atlanta Chamber of Commerce, the Greater Georgia Association and the Georgia state legislature, became the guests of the Manufacturers' Association of Atlanta, and proceeded to Cold Springs, where an old-fashioned Georgia barbecue had been prepared. This was the last session of the meeting, and the next morning the nurserymen and their friends left on a special train over the Georgia railroad for a trip through the peach orchards of that section—but that is another story.

Atlanta is a beautiful and a progressive town, with a most hospitable people. The members of the association were made to feel perfectly at home, and everyone seemed to have a most excellent time. The meeting this year will long be remembered as one of the most pleasant the association has ever held. J. M. I.

Trips Through Georgia Peach Orchards.

After the adjournment of the regular meeting of the American Association of Nurserymen, at Atlanta, the members were guests of the Georgia railroad and the Gentral of Georgia for two days, on a trip through some of the peach orchards along their respective lines.

Early Friday morning, June 24, the party left Atlanta by special train over the Georgia railroad for a trip to Mayfield, where a stop was scheduled for the orchard of Berckman Bros. The party was in charge of Mr. S. E. Magill, general agent of the passenger department of the Georgia road, who looked after the welfare of every member. It might be said, in passing that the Georgia railroad is one of the oldest steam railway companies in America. It was the first American road to use sleeping cars, and has a record of having killed only one passenger since the first train was run. Think of that, as an evidence of careful railroading. Only one passenger killed in the history of the road, and that one was killed because of a load of iron pipe having been improperly placed on the cars, one pipe having slipped back into the coach of a mixed train and killed a woman passenger.

This is the road which had the party in charge the first day. Passing through cotton fields, with occasional small patches of corn, past Stone Mountain, a mountain of solid granite, we reached Mayfield shortly before noon. Messrs. Berckmans had wagons at the station to convey the visitors to the farm, some two miles away. The name of Berckmans is prominently connected with the horticultural development of Georgia, for, as nurserymen and fruit-growers, the elder Berckmans and his sons have done a great work in the state. Besides conducting a large nursery at Augusta, the family has large peach orchards, and at the time of our visit St. John and Mamie Ross peaches were being shipped in car lots.

Arriving at the Berckmans home the members of the party were left free to wander over the place until dinner was announced. The dinner proved to be another Georgia barbecue, in charge of a dignified-looking old colored man, who looked like a patriarch. The dinner was a great success, with barbecued meats, succotash, potatoes, summer squash, etc.

Peach Trees
A Specialty

On page 10 is shown a picture representing our budding force, which successfully budded 1,250,000 peach trees during the month of June. Our block of June Bud Peach gives every promise of being the best that we have ever grown. Commercial planters and others in need of June Bud Trees will do well to get our list and prices before buying.

We Guarantee Our Trees to be True to name, free from disease and well grown.

We have the following leading commercial varieties in June Buds, viz: Elberta, Bell of Georgia, Carman, Waddell, Slappy, Early Bell, Tillotson, Salway, Heath Cling, etc., June Bud and 1-year Plum. Also a large list of 1-year Peach, 2-year Apple, 1-year Cherry and Pear, Strawberry plants, etc., for fall and winter shipment. Write for Catalogue and prices.

Chattanooga Nurseries
Chattanooga, Tenn.

—a typical Southern meal. Here the members of the party were given their first good taste of peaches, for the Berckmans had piles of fruit on each table. After dinner Mr. Orlando Harrison of Maryland called the meeting to order, and, on behalf of Messrs. Berckmans, Mr. Cabinness of Augusta welcomed the visitors to

EXTRA FINE ST. JOHN AND CARMAN PEACHES, GROWN BY OHIO FRUIT LAND COMPANY.

Georgia and to the Berckmans farm. Response was made by Mr. Kirkpatrick, the new president of the association, and after Mr. Kirkpatrick's talk short addresses were made by Mr. Watrous of Iowa, Mr. Irvine of The Fruit-Grower, Mr. Chase of New Hampshire, Mr. White of Chicago and Mr. Smith of Georgia. All expressed themselves delighted with the reception they had been tendered, and expressed the warmest appreciation of Georgia and her people.

A visit to the packing shed was next in order. Here we found a force at work getting fruit in shape for shipping. Mr. Berckmans informed The Fruit-Grower that the Elberta season would not open until about ten days after our visit, and at that time the season would be on in earnest. At the Berckmans farm we noticed that pecan trees have been planted between the peach trees, thus preparing the way for a permanent orchard to follow the peach trees, when the latter have outlived their usefulness.

As the party was to proceed to Macon to spend the night, it was necessary to leave the Berckmans orchard early in the afternoon, after cheers had been given for the Berckmans and their hospitality. The special train proceeded on its way, and about 8:30 p. m. we reached Macon, one of the delightful old towns of the South. The management of the Hotel Lanier, named in honor of Sidney Lanier, who was a Macon man, had been advised of our coming, and notwithstanding the lateness of the hour, had supper ready for us. It was to be regretted that the party could not have reached Macon earlier in the afternoon, so that the members could have seen something of the place. Macon people are noted, even among the cordial people of the South, as being unusually hospitable, and certainly the short acquaintance with their Mayor Smith, Mr. George C. Smith, and others warrant this claim. But the party was inspecting peach orchards, and must not linger in the cities.

Saturday morning the party was taken in charge by the Central of Georgia railway, a special train having been prepared, which left Macon at 8 o'clock, sharp. Everyone was in good spirits, except two or three who had eaten too many peaches the day before, and who were left at the hotel until the return of the party in the evening. The Central of Georgia representatives, Mr. F. J. Robinson, assistant general passenger agent, and Mr. J. M. Mallory, of the industrial department, looked after the welfare of every member of the party, and accompanied them throughout the day.

The first stop was at Fort Valley, where the train left the main line and took the side-track for the Hale and Albaugh orchards. A ride of only a few minutes over this siding brought us to the Hale Georgia orchards. Although busy with the shipping of Waddell and Carman peaches, Mr. Hale had his peach wagons at the siding to meet us to convey us through the orchard. The seats were upturned bushel baskets, such as are used by the peach pickers, and each wagon was supplied with a basket each of luscious Waddell and Carman peaches, which had been kept on ice until perfectly cold. The Hale orchard consists of 2,000 acres, so that only a small portion of it could be covered during our stay. This trip was planned through the blocks in which the fruit was ripening, so that the visitors could see how the work is carried on. Most of the pickers are negroes, but in the packing shed only white labor is employed.

The trees were loaded with ripening fruit. No rain had fallen for three weeks, so that the fruit was in splendid condition to carry to market. In this orchard, and indeed, in all the orchards visited, trees are headed low, so that all fruit can be picked from the ground. In the older portions of the orchard trees had been planted 15 feet apart each way, but in his later planting Mr. Hale is increasing this distance. Clean cultivation is given, or cow peas are planted between trees.

After a short trip through a portion of the orchard, the packing shed was reached, and here a busy scene was presented. The full force was kept at work, to show how the work moved on. Here, too, the members of the party were introduced to a new drink—peach lemonade. Mr. Hale told The Fruit-Grower how this was made, as follows: Dead-ripe peaches were peeled and the seeds removed; these were placed in a barrel until it was filled. Then a barrel of good, strong lemonade was made, and the contents of the two barrels poured together. With a big lump of ice floating in each barrel, think what a delicious drink this must have been to about 200 travelers who had been out in an orchard, with a Georgia sun shining! Reaching into the barrel with a bright tin dipper, one secured a most excellent drink, and in the bottom of the dipper would be found large pieces of luscious peach, as cold as ice could make it. Oh, my! No wonder the party hated to leave the Hale packing shed. But the schedule called for a short stop.

SOME GOOD MULES OWNED BY TENNESSEE WHOLESALE NURSERIES, WINCHESTER, TENN.

The next stop was at the Albaugh Georgia orchards. Here Mr. N. H. Albaugh, with his family, met the visitors. Lemonade, cakes, etc., were served, and business was entirely suspended to give the visitors a good time. Mr. Albaugh is the pioneer in the commercial peach business in the Fort Valley district, it is said, having preceded Mr. Hale by about one year. The orchard is large and well kept, and everything run in good shape. The Fruit-Grower tried to get a photograph of Mr. Albaugh and some of his pretty peach packers, but some of the young ladies moved and spoiled the effort. The same siding that reaches the Hale orchard extends to the Albaugh orchard, the track passing alongside the shed.

The train then proceeded back to Fort Valley, and the trip over the main line was resumed. The next place visited was the home and orchard of Mr. S. H. Rumph, the originator of the Elberta peach. Here the reception was a repetition of those which had preceded it. Mr. Rumph met the party before we reached the house. On the wide veranda of the old Southern home—a typical Southern home, too—Mrs. Rumph and daughter had prepared a table, on which were loaded heaps of peaches, and from which they served fruit punch and cakes. The old homestead is surrounded by a magnificent box hedge, and the "camera squad" had an excellent opportunity to secure some good photographs.

Mr. Rumph is a most modest gentleman, and was plied with questions by the visitors, all of whom wanted to know if the original Elberta tree is still standing—they doubtless wanted to visit it and pay homage to it. Mr. Rumph said it had been cut down, however, so this extra pilgrimage was lost. In the course of his conversation, Mr. Rumph told how the Elberta originated. He planted some seeds of the Chinese cling, with the expectation of securing other trees of the same variety. One of the trees which grew from these seeds produced the first Elberta peaches, and as the Chinese cling tree, the parent stock, stood near a Crawford tree, Mr. Rumph concludes that the Elberta is a cross of Crawford on Chinese cling. And there you have the story of the Elberta, the most largely planted peach in America!

The next stop was at the Willingham orchard, the packing shed being back from the main line a short distance. Here Mr. Willingham presented baskets of peaches to the visitors, but it was noted that most of them had eaten so many peaches during the day that the fruit had ceased to attract them as it did early in the morning.

The orchard of the Ohio Fruit Land Company was the next stop. This orchard is at Myrtle, Ga., and was one of the handsomest orchards visited on the whole trip. The orchard is in charge of Mr. C. W. Withoft, and is owned principally by Ohio persons, we were told. The trees are all young, and in the planting and care of them the management has avoided many mistakes made in the first planting. Trees are planted 12 by 20 feet, and the orchard was in excellent condition. The party was a little behind the schedule at this place, so that, after a hurried inspection of a part of the orchard, we had to take our leave. Mr. Withoft had prepared light refreshments for the visitors, and had wagons to show them through the orchards. He told us that at one time he had a large pear orchard, but that it was unprofitable, and most of the trees had been cut down. The Fruit-Grower representative tried to get a photograph of some most excellent peaches in the packing shed at this place, but, because of inexperience in the use of the camera, was unable to get a good one. Here, too, could have been secured some fine photographs of a well-kept Georgia peach orchard, but lack of time prevented. Mr. Withoft has an excellent water system, supplied from springs and forced over the place by a hydraulic ram. This ram is made at Salem, Ohio, and Mr. Withoft says does excellent work.

THE END OF THE TRIP—IN THE SURF, NEAR SAVANNAH, GA.

The train proceeded back to Fort Valley, where dinner was served, at about 3 o'clock in the afternoon. After dinner a visit was made to the crate factory, where great logs are placed in a veneering machine, and in an incredibly short time are ready to be made up into crates. This factory was an interesting place, and shows how the Georgia growers are favored in having their shipping packages so close at hand.

Late in the afternoon the start on the return trip was made. The special train returned to Atlanta that evening, and many of the Northern members took the night trains for home. Messrs. Robinson and Mallory of the Central of Georgia road deserve great credit for their handling of the crowd during the day. Notwithstanding the many stops, at all sorts of places, no member of the party was left behind, and the itinerary was carried out without a break and on schedule time. On the way back to Atlanta the party was treated to some fast railroading; one run of seventeen miles was made in fourteen minutes—but everyone was brought back safe and sound.

The two-day trip had been a most delightful one. The weather was fine, the sun shining very hot, but with a good breeze blowing. The members of the party became better acquainted with each other, and everyone had a good itme. Everything was very informal. The men shed their coats and the women made themselves as comfortable as possible.

Write us for fine cuts of apples for your catalogue or stationery. We are preparing a full set of varieties, and now have Ben Davis, Jonathan, York Imperial, Bellflower, Huntsman, etc. J. H. CLARK, care Western Fruit-Grower, St. Joseph, Mo.

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is where you can get the best trees at right prices. This you can do b buying from us. Our trees are propagated direct from choice bearing, re-selected trees, they will produce fruit of highest color, richest flavor, most uniform size, and the trees are hardy, early and prolific bearers. We guarantee our trees and prices to please. If you want an apple that will keep until the new crop comes in, plant the Missing Link Apple.
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Everyone was well-behaved, and the railroad representatives told The Fruit-Grower they had never handled such a fine crowd of people, for every member fell in with the plans which had been made, and everything moved like clockwork.

The visitors were much impressed with the possibilities of this country. The soil, a red clay, did not seem productive to those who did not know of its value, but after an inspection of the orchards they had a better appreciation of its value. Mr. Hale showed the writer a tract of ground which had previously grown one good peach orchard, which passed away, then had been planted to peach trees in nursery, and now s in young peach orchard again, and trees making a fine growth. Certainly it must be good peach soil or this could not have been done. Some orchardists grow cotton between young trees, but this is regarded as a mistake by other growers, who prefer no crop at all, or to grow cow peas as a fertilizer.

A great many of the orchards have had San Jose scale in them, but the growers are not alarmed. They spray every year with lime, salt and sulphur and the pest is easily held in check, and the trees are the better for the treatment. San Jose scale does not alarm Georgia growers as it once did, but they prepare to fight it just the same as they would any other pest.

Much Northern money is being invested in peach orchards in this section, and the outlook is good. Some industrial department; Mr. J. G. Carlisle, commercial agent, and Conductor W. R. Dawson, the nurserymen feel especially grateful. These companies issued complimentary tickets and placed at the disposal of the excursionists fully equipped special trains which conveyed the nurserymen directly to the great peach orchards of the state, and quickly from place to place in the orchard district, so that the excursionists were enabled to see the most that was possible in the time at their disposal.

In no other state of the Union have the members of the American Association of Nurserymen been so cordially received and so bountifully and continuously entertained. Every member of the party has repeatedly expressed his or her hearty appreciation of the courtesies extended, and all desire to record their gratitude. The fine equipment of the railroads traversed on this occasion and the excellent time made on special schedule have been noted.

To Mr. R. C. Berckmans who arranged the excursion and who entertained the nurserymen at the Mayfield orchard of the Berckmans Brothers, and to all who assisted him in that novel and enjoyable entertainment, special recognition is given, and appreciation of the care needed to make such a trip a success is expressed.

It is desired also to thank Mr. J. H. Hale, Mr. N. H. Albaugh, Mr. Samuel H. Rumph, Mr. E. J. Willingham

THE RAILROAD AND NEWSPAPER MEN, AT HOME OF S. H. RUMPH, MARSHALLVILLE, GA.

and Mr. F. G. Withoft for courtesies extended by means of which the visiting nurserymen were enabled to view the great orchards and the packing houses at close range and under the most favorable circumstances.

Besides enjoying the trip to the fullest extent, the nurserymen have gained information which it will be their pleasure to use at every opportunity for the advancement of the interests of the State of Georgia and her most hospitable people.

E. W. KIRKPATRICK,
President American Association of Nurserymen.

Japan plums are grown, but are not so profitable as peaches. Melons grow to perfection, and a great many are planted—J. H. Hale has more than 100 acres of canteloupes. The two-day trip of the nurserymen will give them a better appreciation of the resources of Georgia as a fruit state, and much good will follow therefrom. J. M. I.

Resolutions Regarding the Trip.

By direction of the members of the association, President Kirkpatrick was authorized to issue a statement in behalf of the members in regard to the trip. This statement follows:

The members of the American Association of Nurserymen, one hundred and fifty in number, desire to express through the president of the National Association their deep appreciation of the many courtesies extended to them, through the agency of Mr. Berckmans, of Augusta, Ga., by the railroad companies and the peach-growers of Georgia, during the two days' excursion from Atlanta to Mayfield, Macon, Fort Valley, Marshallville and Myrtle on June 24th and 25th, 1904.

The trip was one of continuous hospitality of the heartiest and most generous sort and has given those who were fortunate enough to enjoy it an experience with true Southern courtesy that will be remembered always with the greatest pleasure.

To the Georgia Railroad Company through its general manager, Mr. Thomas K. Scott and its general agents, Mr. S. E. Magill, of Atlanta, and Mr. W. M. McGovern, of Augusta, who personally conducted the excursion, and Conductor J. R. Cosby; and to Mr. W. A. Winburn, vice-president and traffic manager of the Central of Georgia Railway Company, and Mr. F. J. Robinson, assistant general passenger agent, Savannah, Ga., who personally conducted the excursion, as well as to Mr. J. M. Mallory of the

House-Party at J. H. Hale's.

Instead of returning with the special train to Atlanta, after the trip through the peach orchards, the editor of The Fruit-Grower went home with J. H. Hale, who entertained a house party ever Sunday. Among the guests were Mr. and Mrs. Frank B. White and Mr. Hall, Chicago; Prof. G. H. Powell, Washington, D. C.; Mr. Powell, of Farm and Home, Springfield, Mass.; Prof. John Craig, Cornell University; Mr. J. Horace McFarland, Harrisburg, Pa., and the writer. These, with Mr. Hale's official "family," his bookkeepers, treasurer, time-keeper, superintendent, etc., made a house full. The writer left Saturday night at midnight, but not until after the negroes had sang and danced, according to old-time Georgia idea.

This short stay at Mr. Hale's gave opportunity to see more of the place. At the time of our visit about 800 persons were on the pay-roll, but this number will be greatly increased during the Elberta season. The handling of the fruit has been brought down to a fine system, and everything moves like clockwork. The fruit is graded at the shed, and packed by girls. Crate-tops are labeled beforehand, and each crate is covered with a top bearing the label of the particular grade—"Choice," "Fancy," etc. An improved loading device has been installed by Mr. Hale. Formerly the crates were hauled on trucks to the car doors, but this took considerable time, and, too, this plan pre-

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The only Rotary Washer with revolving steel ball gearing. Inside of the tub corrugated like a washboard. The wheel turns right or left, pin wheel or dasher reverses automatically, turning clothes back and forth through the hot soap suds. It does away with the wash day backaches. Go to your dealer's store and ask to see it. If he don't handle the O. K. send us his name and we will see that you are supplied with one.

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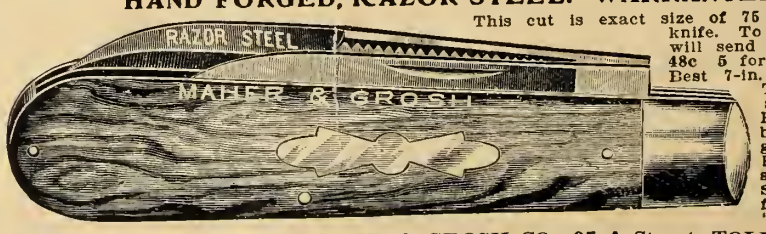

This cut is exact size of 75 cent strong knife. To start you we will send you one for 48c 5 for $2, postp'd. Best 7-in. shears, 60c. This knife and shears, $1.00. Pruning, 75c; budding, 35c; grafting, 25c. Pruning shears, 75c. Send for 80-p. free list and "How to Use a Razor."

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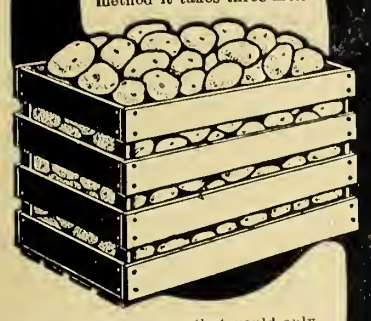
The testimonial below is a striking comment on the money and time saving value of the ventilated Bushel Crate. During the three months of the busy season you'll pay a hired man (at $1.50 per day) with his board at least $187 for 108 days. By the old method it takes three men



to handle the same crop that would only need two men and 200 of our

BUSHEL CRATES

Consequently, you save one man's time and board—$187. Our crates cost $9 per hundred. Invest 9 cents and save $9.

Our booklet No. 18 illustrates all the points. It's free. Send us your name.

Saved Hired Man's Pay.

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Gentlemen:—You enquire how we like your ventilated Bushel Crates. We cannot say too much in favor of them. They are strong and serviceable. They save one hired man during the Fall season.

C. R. KURTZ.

Geneva Cooperage Co.
Geneva, O.

vented the use of a driveway on all sides of the building, for the platform extended up to the car door. This year a chute has been formed, leading from the shed to the car door. The end of the chute in the shed is considerably higher than the other end in the car, so that crates will slide into the car of their own weight. This chute is elevated, so that teams with peaches from the field can pass under it at any time, and the work of loading will not be interfered with. As the crates are loaded into the chute by the negroes, the grade is called off to a "checker," who thus gets a record of the contents of each car. At the lower end of the chute stands a stout negro, who catches every crate as it comes down, and one never is allowed to strike the floor. Other men place the crates in position, and a car of fruit can be loaded in a very short time.

Mr. Hale also showed us his plant for cooking his spray mixture. It consists of a large boiler below a platform, on which are two rows of ten barrels each. Pipes from the boiler are placed over each barrel, which connect with an extension which reaches the bottom of each barrel. These extensions are made of gas pipe, with two cross pieces at the bottom, which are perforated in such way that the steam escaping through the holes keeps the contents thoroughly stirred. Alongside each battery of barrels is a large pipe, with an inlet and an outlet, both of which can be closed or opened as desired. This pipe also has an opening into the bottom of each barrel. When ready to cook the mixture, the main outlet, or escape, is closed, and the outlets into each barrel opened. Water is then turned into the pipe from a tank on a tower near by, and the barrels are soon partly filled. Then the water is turned off, and the contents of the barrels brought to a boiling point by means of the steam pipe inserted from the top. While still boiling the lime is dumped into the barrels, and the sulphur is at once placed therein also. The result is that the whole mass is soon thoroughly mixed by reason of the intense heat. The water is then turned in again, and when the barrels are filled the water is turned off. After further boiling the mixture is ready to be drawn off.

The other end of the large pipe is now opened—the escape vent, we would call it—and the mixture is drawn off from each barrel through the same pipe through which the water enters. The plant is most complete, and greatly simplifies the work of preparing the lime, salt and sulphur mixture. The spray mixture is drawn off in barrels and hauled to the various parts of the orchard for use.

Mr. Hale has 2,000 acres of land, nearly all planted to peaches. He showed the writer 60,000 Elberta trees in one block, all bending with a load of fruit. No rain had fallen for three weeks, and Mr. Hale said a good shower was needed to help swell the fruit at ripening time. This shower came the day after the writer left, as indicated by the following card from Mr. Hale, dated June 30:

"Fine shower Sunday night set things moving. Got eight cars peaches Monday, thirteen Tuesday, twelve Wednesday and eleven today. No time for coon songs now; just hustle while we wait. Elberta swelling fast now."

Mr. Hale is a believer in the use of cow peas, and said he has 300 bushels of seed yet to plant and he has a lot already growing, too. Much credit is due to the superintendent, Mr. Baird, who has had active charge of the work most of the time. Mr. Baird has perfected an excellent organization, and, as Bill, the negro who drove the writer to the station, said, "is a mighty fine man, sure."

The Fruit-Grower representative enjoyed the short stay at the Hale farm, with a congenial crowd of people, but hastened away Saturday night, to spend Sunday at Savannah, one of the most interesting cities of the South.

J. M. I.

Nurseries Around Winchester, Tenn.

While on the trip down South last month The Fruit-Grower representatives called to see a number of our nursery advertisers near Winchester, Tenn. This section is particularly noted for the number of peach trees grown there. It is the largest nursery center in the South for these trees, 8,000 bushels of peach seeds having been planted there last fall, to furnish stocks for budding this season. Junebudding is a feature of the business, for Southern peach growers mostly prefer June-budded trees. At the time of our visit the men were busy with this work.

We left Chattanooga early in the morning, in company with Mr. D. W. Hunter, proprietor of the Chattanooga Nurseries, most of whose stock is grown at Decherd, Tenn, three miles from Winchester. The ride was a delightful one over the mountains, after a good shower the afternoon before. Arriving at Decherd a team was secured and the start made for the nursery. The country around Decherd and Winchester is a good one—one of the best parts of the state, in fact. Soil is a dark red clay, which produces very fine nursery stock.

The Chattanooga Nurseries for many years grew small fruit plants almost exclusively, but lately have been growing peach trees, and now have quite a supply of other trees. A specialty is made of peach trees, however, which were found in excellent condition. Great quantities of seedlings were being June-budded, but at the same time large blocks were left for dormant-budding later in the season, these latter trees being for Northern customers. It is an interesting sight to see a large force at work budding peach trees. The force is divided into different squads, with different lines of work—strippers, budders, tyers, etc. It is surprising how rapidly the work can be done by experienced men and boys. The Fruit-Grower interrupted part of the men long enough to get a gang of them together for a photograph, which is produced herewith. Mr. Hunter is shown at the right of the group. Mr. Hunter could only show us that portion of his stock which was most accessible, as we were pressed for time. Everything was found in good condition, and a fine lot of stock will be ready for market next fall and for spring of 1905, and the announcement of the Chattanooga Nuseries will appear in The Fruit-Grower in due time.

Mr. Hunter kindly took us to Winchester, where J. C. Hale of the Tennessee Wholesale Nurseries took us

(Continued on Page Ten.)

FINE BLOCK OF KIEFFER PEAR, SOUTHERN NURSERY CO., WINCHESTER, TENN.

WONDERFUL STOVE OFFER.

$11.95 Buys our new, high grade Acme Bardick Steel Range in the latest 8-18 size, complete with high shelf, warming closet and deep porcelain lined reservoir, exactly as illustrated, the equal of steel ranges that others sell at double the price.

$8.15 For the same range without shelf, closet or reservoir. $9.90 for the same range with reservoir, but without high shelf or closet. For the most complete line of ranges ever shown, the greatest values ever offered in cast iron and steel cook stoves, ranges and heating stoves, for the most liberal offer ever heard of, for our free trial plan, our binding guarantee, our pay after received proposition, write for our Free Stove Catalogue.

$14.95 Buys Our Acme Hummer High Shelf and Closet Reservoir Steel Range, exactly as illustrated. This is a large, handsome, regular 8-18 size steel range, beautifully nickel trimmed and decorated, the equal of ranges that sell generally at double the price. Send for our Free Stove Catalogue and get our new prices on all kinds of steel and cast iron cook stoves, ranges and heaters. You will receive the most wonderful stove offer ever made, it will explain our liberal pay after received terms, our free trial offer, our binding guarantee, etc.

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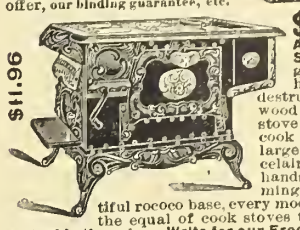

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$11.96 BUYS OUR Acme Favorite Steel Cook Stove, guaranteed the highest grade, non-destructible coal and wood burning steel cook stove made. A big steel cook stove with extra large oven, firebox, porcelain lined reservoir, handsome nickel trimming throughout, beautiful rococo base, every modern improvement, the equal of cook stoves that sell generally at double the price. Write for our Free Stove Catalogue, and you will receive a large handsome illustration of this and many other steel and cast iron cook stoves, ranges and heating stoves; will explain how in our own foundry we make a higher grade of cook stoves than is made in any other foundry in the world, you will get the most liberal offer ever heard of, our free trial proposition, our entire new line of cut prices. Don't fail to write for the Free Stove Catalogue.

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$17.33 Buys Our Big Challenge Nickel Trimmed 1904 Model Steel Range, equal to ranges sold by others at $30.00 to $40.00, one of the handsomest big steel ranges made. Comes complete with high shelf, warming closet, deep porcelain lined reservoir, the whole stove beautifully nickel trimmed and ornamented.

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$24.55 Buys our Acme Triumph Steel Range exactly as illustrated. Positively the highest grade steel range made in the world. A blue polished steel range in which heavier steel plate is used than in any other steel range made; has high shelf, warming closet, deep porcelain lined reservoir, heavy, rich nickel trimmings and nickel mountings, asbestos lining, handsome nickel trimmed rococo base, a big 505-pound steel range that combines all the good qualities of every high grade steel range made, with the defects of none, stronger, more lasting, handsomer, and in every way a better steel range than goes out of any other foundry in the world. Our stove foundry, located in Newark, Ohio, is the largest in the United States. In it we make all kinds and sizes of steel and cast iron cook stoves, ranges and heating stoves, positively the highest grade stoves made in the world. Write for our FREE STOVE CATALOGUE, and you will get a book containing a large, handsome illustration of every stove we build, full description and astonishingly low prices. We will tell you why we can make better stoves than you can buy elsewhere and at half the price others charge. In this catalogue we will tell you just what the freight will amount to on any stove to any point, you will get our free trial offer, our binding guarantee explained, you will get such a stove proposition as was never made before. Don't fail to write for our Free Stove Catalogue. On a postal card or in a letter simply say, "Send me your Stove Catalogue," and the big book complete with all the new prices, very newest offer, with our latest proposition, will go to you by return mail, postpaid.

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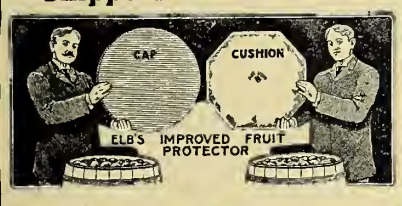

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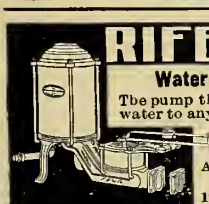

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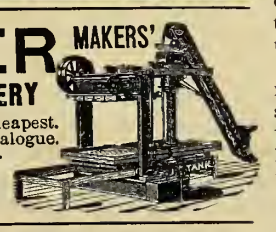

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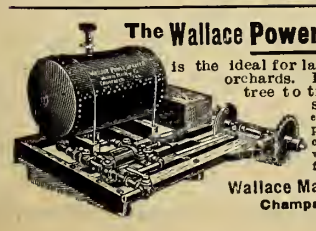

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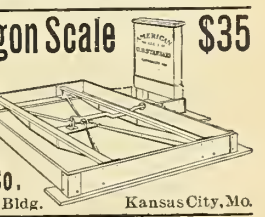

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THE FRUIT-GROWER
ST. JOSEPH MISSOURI

Address all Communications and make Remittances Payable to "The Fruit-Grower Company," Seventh and Charles Streets, St. Joseph, Mo.

W. G. Campbell, Jr., General Manager. James M. Irvine, Managing Editor.

Advertising Rate—15c Agate Line $2.80 inch. Fourteen lines to the Inch.

No advertisement in class generally termed "objectionable" received under any conditions. Editions mailed on 15th; Forms close on 10th; i. e., January forms close January 10th, etc.

THE JUNE EDITION COMPRISED 35,150 COPIES

Taking effect September 1, advertising rate will be advanced to 20c line—$2.80 per inch. Up to September 1 contracts for use of one inch or more per month, for 12 months, will be accepted at present rate.

Subscription—50c a year, 3 years in advance, $1. Foreign Countries, $1.

Remit by U. S. Coin, Postoffice Money Order, Express Money Order, Registered Letter or Bank Draft. Send stamps only as last resort. All remittances at our risk.

Unless otherwise ordered, subscriptions will commence with month following date of remittance, and continue until ordered stopped and arrearages paid. If you desire paper to stop when time is up, notify us. The letter "S" after date on your address tag signifies that paper will stop on that date. The address tag stands as a receipt for your remittance.

In compiling a list of over Thirty Thousand subscribers it is an easy matter to make mistakes, but we guarantee fair treatment to everyone. If you find an error in your address tag, or do not receive paper promptly, write us and we will trace matter up at once.

Entered as Second-Class Matter in the Postoffice at Saint Joseph, Missouri.

Volume 15 ST. JOSEPH, MO., JULY 15, 1904. Number 7

After the appearance of the June issue of The Western Fruit-Grower, we received a letter from a member of the executive committee of the Missouri Stat Horticultural Society, in which the charge was made that this paper was trying to disrupt the Missouri State Horticultural Society, because of certain matter which appeared in the June issue. As this charge has been made in various places, we desire to make a statement in behalf of this paper. Nothing could be farther from the truth; we believe everyone who knows anything of The Fruit-Grower will appreciate the truth of this statement. We do not know what occasioned this statement from the member, whether it was the statement by Stark Bros. or our own criticism of the financial management of the society. Just a word in regard to the first. At the meeting in St. Louis, Stark Bros. told the members of the society that if certain things were not done, the firm would issue a public statement on its own behalf, explaining its position. Later this firm told The Fruit-Grower representatives it would want several pages of space in which to give this statement the widest possible publicity. This space was used last month. No just criticism can be made of The Fruit-Grower's policy in publishing this statement from Stark Bros., for it was made over the signature of the firm, which is responsible for the same. The members of the executive committee of the Missouri Society, some members of which were subjected to severe criticism in this statment, were informed that the statement would be published, and space in The Fruit-Grower was offered them to make a statement on their own behalf. We told the members of this committee that Stark Bros. had engaged the space referred to, and at regular rates, but that if the committee wished to make a statement the same would be published without any charge. Could anything be more fair than this? The committee thanked us for the offer, and said a statement would be prepared for either the June or July issues. Not hearing from the committee for June, we wrote, on July 6, to Vice-President Dutcher, who, we understand, was to have prepared the statement, advising him that our July forms would close on the 13th, and to have his statement ready by that time. None was received, before we went to press. It is not the fault of The Fruit-Grower that both sides have not been heard. And we feel that the gentleman was not warranted in criticizing us along this line.

In regard to our own article in regard to the society's finances, we feel that no statement is needed. We said the manner of handling the funds has been unbusinesslike and lax—and it has. That this is so is indicated by the adoption of a resolution, introduced by a member of the executive committee, directing the secretary and treasurer to change their method of keeping the accounts of the society, and to require that all the funds of the society pass through the treasurer's hands. Another resolution was adopted providing for the appointment of a committee to examine into the special fund on deposit in St. Louis, "and to at once secure this fund and turn it over to the treasurer of the society." If the old methods were not unbusiness-like, to say the least, then why change them? This special fund may be in the hands of the treasurer, for aught we know. If it is not, then it ought to be, for he is the official who is under bond for its safe-keeping. And if it is in his hands, then a full report ought to be submitted showing the condition of this fund. We submit that it is not good business to have a fund of the society which draws 4 per cent interest, and which decreased from $1,071 in 1901 to $992 in 1904, without any statement showing the disbursements from the fund, for what purpose, etc. Any criticism of this policy cannot be construed as "trying to disrupt the society," for the best interests of the society require that the funds be kept in a proper manner.

No, indeed, The Fruit-Grower is not trying to disrupt any horticultural society. Rather, it wants them all to succeed and to number their members by the thousands. But at the same time it believes that no organization can do its best work unless it is conducted along right lines, with the least possible excuse for criticism. To that end we want to help correct any faults the Missouri Society may have, while at the same time recognizing the great good it has done. The society should have the support of every fruit-grower in the state, but in order to secure this the society must be conducted along proper lines.

The Fruit-Grower felt called upon to make this statement, that its readers may know it has tried to be perfectly fair in this matter. And we believe we have been fair. We wanted our position to be understood, for we know that certain persons have said some very unkind and uncalled-for things about The Fruit-Grower. It is really strange how some persons who have been so industrious in criticizing the policy of this paper for a long time, can stand so little criticism themselves while occupying a public position.

In connection with the various articles in this issue in regard to the trip through Georgia last month. The Fruit-Grower wishes to ackonwledge special courtesies received from Mr. Magill of the Georgia railroad, Messrs. Robinson and Mallory of the Central of Georgia railroad, from Mr. Bryan of The Peach Grower, Mr. Walker of The Southern Fruit-Grower, Mr. J. H. Hale, Mr. Hunter of the Chattanooga Nurseries, J. C. Hale of the Tennessee Nurseries, and others. The Fruit-Grower people had a great time in Georgia, and these gentlemen helped to make it especially enjoyable, to say nothing of the hospitality and cordiality of all the people, we met on the trip.

For the meeting of the Georgia State Horticultural Society, at Tallulah Falls, August 4 and 5, the Southern Express Company will furnish free transportation for all exhibits of fruits. This is certainly unusual in an express company, and yet there is not an express company in this country which could not profitably encourage the fruit industry to this extent. The building up of the fruit business along any line of railway, or in the territory of any express company, cannot fail to benefit these companies, and they are wise for encouraging the industry by every means within their power.

The Missouri State Fair, at Sedalia, Mo., August 15 to 19, should be one of the best the state has ever held. The fair should not be neglected on account of the World's Fair at St. Louis, for it is a permanent thing, and its usefulness should be increased every year. Missouri's state fair is a new institution, but already it has become one of the best in the country. The fair should be encouraged by Fruit-Grower readers, we believe, for two reasons: One because the fair is really a creditable one; and the other because the premium list contains this statement, which is rigidly adhered to: "No privileges will be granted for questionable or immoral shows, for any game of chance or gambling device, or for the sale of intoxicants, nor will they be permitted on the grounds." When so many county and state fairs are turned over to these elements, we should all the more seek to encourage an institution which has the backbone of the Missouri State Fair. It deserves the help and co-operation of every good man and woman in the state.

Did you ever think how easy it is to criticize the policy of a newspaper—or a farm paper, for that matter? If a paper does something of which you do not approve, how you find fault with it! Never stop to think of teh things the paper may have done, of which you would approve, but of which you have heard no mention. Here is an advertisement in one paper, of which you may not approve. Yet perhaps the publisher of the paper used his best judgment in accepting the same. He may have refused dozens of other advertisements because they were not thought to be worthy—but no credit is given him for this, for the public generally will not know of the facts. The Fruit-Grower has recently had an instance of this. Last winter a banking concern in New York sent an advertisement for our columns, offering to pay in advance. This advertisement sought deposits from our readers, under the plan of "banking by mail" which has worked successfully in many cases. Someway the bank did not look right to us. Not that we feared we would not get our money, for the advertisement was to be paid for in advance. But we feared our readers might send money to be deposited, which would be lost. And the advertisement was never inserted in our columns. It did appear in many other papers, however, and many persons sent money to be deposited, the deposits to draw good interest. But the bank was a fraud and failed, and the promoter has been sentenced to ten years in the penitentiary. Think of matters of this kind when you are tempted to criticize the policy of any publication. It is so much easier to tell how to run a paper—or to run a farm—than it is to do it. The one in charge has to simply use his own best judgment, whether in charge of a farm or a newspaper. That's the way we run The Fruit-Grower. Isn't it the way you run your farm?

The Fruit-Grower will issue a special World's Fair edition about the last of August or first of September. This will be apart from our regular number for September, and will be for distribution at the World's Fair. Arrangements have been made for placing copies in most of the fruit exhibits in the Horticultural building, for the benefit of visitors. The first edition will consist of 50,000 copies, and it will be unexcelled as an advertising medium. Advertisers should send copy at once, for the space is limited. And our readers should get a copy of this edltion when they go to the Fair, and they should urge their neighbors to call at the horticultural exhibits and get a sample of this special issue.

Fruit Culture in India.

The Fruit-Grower has referred several times to one of its subscribers in the heart of India, Colonel Rennick. This gentleman writes an interesting letter occasionally, and promises some notes for publication. A letter recently received from him reads:

"I consider The Fruit-Grower a most valuable paper and a great instructor, and I never lose a chance of recommending it to my friends. Fruit culture is 100 years or more backward in India, as compared with America. I have traveled all over Austria and Hungary (now at Carlsbad), and have found only a couple of orchards and nurseries, on the smallest scale of those in your great continent. I shall try to send you a few notes hereafter, when I have obtained some results from trees imported from a Missouri nursery. We have no pomologist or botanist, or even a proper entomologist appointed by the government to foster a growing industry. I have 1,000 or more almond trees, ten to fourteen years old, which every February are pinkish white with blossoms, but I never get more than a few pounds a year, instead of many bushels. What is the cause? The blossoms drop off entirely or when formed into small fruits. In my valley the bees are not very active in February, and we get some severe frosts in March, after the trees have blossomed."

Perhaps the loss of the almonds is due to late frosts, or it may be that the blossoms are not properly fertilized. Who of our California readers can advise Colonel Rennick, who is alone in his work?

J. H. Shawhan, Payette, Idaho, recently sent four new subscriptions to The Fruit-Grower, with $2 to pay for them. He explains this by saying: "I think The Fruit-Grower is worth the full subscription price, and will not accept any club rate. Will try to send some more subscriptions later."

"Please find inclosed list of five new subscribers and my own renewal. Friends, I don't think I could well afford to do without The Fruit-Grower, Who are a friend indeed.

July, '04

If the "date tag" in connection with the address on your wrapper reads "July, '04," or a date farther back, it signifies that your subscription has expired.

We continue sending The Fruit-Grower until notified by you to stop the paper, unless you instruct us not to do so. We ask, therefore, that you **renew at once** or notify us if you want the paper stopped.

In September we shall mail statements to all subscribers in arrears, and a remittance now will save that trouble and expense.

Please make a note of the fact that we accept a remittance of one dollar in payment for five subscriptions for one year. One of these names may be a renewal. The other four must be new subscribers.

Brother Jonathan wants 50,000 members in "The Family" by this time next year. May we depend upon you for a block of five?

The Fruit-Grower Co., St. Joseph, Mo.

Down in Georgia.

"Peaches are ripe in Georgia."

There was a time when this announcement meant but little, except that "peach cobbler" would be on almost every table. For no one need be without peaches in those days—if one had no trees of his own, he need only visit one who had, and his wants were supplied. Nobody would think of selling peaches—they were for everyone as long as they lasted.

But things have changed, and when "peaches are ripe," there is "omething doing." The peach crop, from ten million bearing trees, is an important one to Georgia.

By the way, did you ever hear a native of the state pronounce the name "Georgia?" He gives it the sound of "Gawga," goth "g's" being soft and long-drawn-out. There is a world of affection in the pronunciation he gives the name of his state. He is the most loyal man in the world, is this Georgia "cracker," to his native state.

But peaches are ripe, and things have to move. The refrigerator car service must be looked after. The crop of the state, it is estimated, will amount to 5,000 car loads, and all shipped in refrigerator cars. These cars must be iced and at the various stations in just the proper number, at just the right time, for the peach crop must be marketed in a hurry. Too few cars here will mean a loss of fruit on account of no facilities for shipping; too many cars there will mean a loss of ice, and the cars will not be in proper condition to receive the fruit a day later.

And think what it means to the railroads! Five thousand cars of very perishable fruit, to be handled in a comparatively short time. A delay of a few hours will mean much loss—and the railroads have to help prevent this loss. And there is other work for the roads, which does not appear on the surface. For instance, at the close of each day each road reports to a common agency the carload shipments which originate on its line, and the destination of the same. These reports are tabulated, showing the number of cars which go to each market, and this information is posted in every shipping station along all the roads. All this means work, but it will help shippers to avoid glutted markets, for by looking at these bulletins one can tell just the quantity of fruit shipped to the various markets.

And the announcement that "peaches are ripe in Georgia" means much to other lines of business. The banks must provide money for handling the crop, paying the pickers, etc. Stores do a thriving business when the pickers are paid off, for money circulates freely when peaches are ripe. The crate factory must work overtime, for packages must be supplied for a large crop. The demand for crates naturally makes business among lumbermen, who furnish the timber from which baskets and crates are made.

It means a great deal to commission men when peaches begin to move. Recently New York received seventeen car loads in one day from Georgia alone, and these must be distributed to the best advantage.

When peaches are ripe there is a change in the plans of the white boys and the black boys who, during other periods of the year, sell chicken sandwiches to passengers on trains at the small stations throughout the state. The chicken sandwich is laid aside for the time being, and instead these persistent venders offer "fresh Gawga peaches, fi' cents a dozen." This is aggravating to the train boy, of course, for he sells peaches at the rate of two or three for a nickel—but he will have to stand this competition from the outside, when peaches are ripe.

When peaches are ripe in Georgia it means much to the negroes who help handle the fruit—and lots of them are needed in this work, too. They come from everywhere, it seems, and return thence when the season is over. Here is an orchard with several different squads, or "gangs," of negroes. One is called the Columbus gang, for the members came from Columbus, Ga., and another is called the Macon crowd, for the reason that the members hail from Macon. Each gang has its foreman, and it is said the negro foremen work their own people much harder than white foremen do. These pickers gather the fruit from the trees in strong baskets, which are turned over to the wagon which delivers them to the packing shed. This gang does not leave the orchard, its duties being simply to pick the fruit from the trees.

Negro Bill is foreman of this Macon crowd, but he is scarcely higher in authority than another negro, called "the preacher"—for the latter leads the singing of the gang. Throughout the day "the preacher" starts the singing, which does not seem to interfere in the slightest with the work of any member of the gang. Not only does "the preacher" lead in the singing, the songs being religious songs, for the most part, but in the evening he shows his versatility by being the best dancer in the entire crowd. So Bill is perhaps but little more powerful than this other member of the gang, "the preacher."

On Saturday evening, when the men are paid off—this is when Bill is in his element. The cashier of the farm—for a cashier is required on this farm, when peaches are ripe—has placed the money for each man, woman and child in an envelope bearing the name of the laborer. At the proper time the bell rings, and the negroes come trooping in. The Macon gang will be paid first, and the Columbus gang stand respectfully aside. When all is ready the cashier calls the name of a member of the gang, and Bill, just outside the pay window, repeats this in a loud voice, for the benefit of the crowd, and the person whose name is called moves forward and receives his pay.

When once a name is called, and not responded to, that person will have to wait until the remainder of the list has been called, for it would take much time to go back and look up the names passed. Bill is so full of ginger—and importance—that he cannot be satisfied with simply repeating the name given to him by the cashier. He must add some comment of his own.

"Ephraim Smith," announces the cashier.

"Ephraim Smith! Come a-runnin," echoes Bill.

"Peter Jenkins," says the cashier.

"Peter Jenkins! Here's your money!" calls Bill.

"Jason Brown," calls the cashier.

Bill repeats the name, in a loud voice, and when Jason shambles up to the window Bill says: "Nigger, I've been wondering fo' a week what's your name."

"James Barton, Jr.," calls the man behind the money window.

"James Barton, Jr.," repeats Bill, and an old negro about sixty-five years old comes forward and gets his envelope.

"Wilson Jones!" calls Bill in a loud voice, after the cashier has given him the name, and when Wilson does not appear, Bill sings out, "He must be dead!" for he cannot realize that Wilson should be absent at pay time from any other cause.

Such a collection of names would be hard to find anywhere else than among Georgia negroes. "Jeff Davis Jefferson" is the name of an old negro man. Mr. Rumph, who originated the Elberta peach, gave the variety that name in honor of his wife, and yet when "Elberta Johnson" is called, a negro youth, with mouth reaching almost from ear to ear, comes forward and receives his envelope.

But the Macon crowd and the Columbus gang are finally paid off, and Bill invites the negroes to come up after supper and sing and dance for the white folks. And about 9 o'clock the Columbus crowd are heard coming down the road, lead by a fellow with a guitar. Shortly afterward the Macon gang come down the same road, their leader being a man with a French harp. Each gang has its turn at singing and dancing, each trying to outdo the other. The dancing was fine, but the singing up to this point has not been first-class, for the negroes have tried to sing some of the latter-day coon songs. But finally, after the rivalry between the Macon and the Columbus gangs has become quite keen, they are urged to sing their religious songs, and, with "the preacher" or some good substitute to lead, they begin their camp-meeting songs.

Now they are all together.. The crowd is merged into one, and their songs now are those which all have in common. For an hour or more they sing those typical negro songs, with one person leading and all joining in the refrain. "Coming Out of the Wilderness" and all the others were sung, and finally, when the negroes are about tired out, a sum of money which had been collected is distributed among them, while they stand, hat in hand, in a most respectful attitude. When the money has been equally distributed they call out "Good night," and forming in line, start off for the quarters, singing as they go. The week is ended, and the negroes are tired—but happy.

Cotton is still king in Georgia, as it is elsewhere in the South, but the king is forgotten for a time, when peaches are ripe.. Down in the valleys the cotton plant is in bloom, and in the crooked rows around the hillsides the plants are growing nicely. But cotton picking time is a long way off, and the reign of the king is temporarily forgotten. For all through "Gawga" there has appeared a new claimant, and the queen is on the throne—for peaches are ripe, for peaches are ripe in "Gawga."

J. M. I.

The Family Circle

There is apt to be a relaxation of interest in the fruit business at this time, particularly on the part of those who live in the Mississippi Valley, where conditions are not satisfactory. But we believe members of "The Family" will not be discouraged. The season has been hard on the corn-grower, and on the wheat grower, and even the hay farmer has had a hard time getting his crop—but they will be in these same lines next season. And so we would urge the fruit-growers to care for their trees and plants, hoping for better crops next year. They will have this satisfaction, at least: They can know that conditions cannot well be worse than they have been this season.

In looking over the crop reports we find that a great many members of "The Family" will have good crops this year—most of them, in fact, will do well this season, if reports are correct. For The Fruit-Grower's circulation extends everywhere, and not all of our readers are in the belt where the fruit crop has been so hard hit. We were rather surprised ourselves, the other day, to see how "The Family" has grown. There was a time when most of our subscribers were in the state of Missouri, but now scarcely 20 per cent of them are in this state. Thus you see how the circulation of The Fruit-Grower has been extended.

This leads us to remark that many of the best friends The Fruit-Grower has are in sections not included in the territory where our early circulation was found. Men in Texas, Pennsylvania, Massachusetts and other distant states are working hard to increase our circulation in their respective neighborhoods—and they are succeeding remarkably well. We hope every member of The Family will help in this work, for it means the improvement of The Fruit-Grower in every way. Don't be afraid to send the names of your neighbors for sample copies—and then try to get their subscriptions. These neighbors may sometimes be subscribers, but no harm will be done even if you do send us a name already on our list. This sometimes happens, as is indicated by the following:

"Yours of the 27th, stating that a neighbor had requested you to send me a sample copy of The Fruit-Grower, received. You say you are sending me a copy. Thanks. It reminds me of the unconventional boy who went courting, and staid all night. Next morning the old man said, 'Good morning.' The boy retorted, 'You're crazy, man; I staid here last night.' I have been a subscriber to the Western Fruit-Grower almost from the first."

That is from an Indiana subscriber. And it shows how a neighbor wanted to do missionary work. So don't be afraid, even if you send a name which is already on our list.

Rogers, Ark., is a good town for The Fruit-Grower. Some good friends are working there. Mr. Hy. Stobaugh sends a list of new names, and says: "By giving an absolute guarantee that every copy of The Fruit-Grower is worth the price of a year's subscription, I find no trouble in securing them."

Still another subscriber there sends a new name with his own renewal, and says: "I am an invalid and cannot get around very well, otherwise I could succeed better. But I have d[illegible] Lest I could."

And no one can do more. But, really, can any member of The Family be content to do less? Let us all work together to increase the circulation and the usefulness of The Fruit-Grower. We want 40,000 subscribers by September 1, and if our friends will help us we will have them. Are you with us in this work? We are counting on your help. Renew your subscription today—and send a new subscriber with your renewal.

THE FRUIT-GROWER CO.

Another Friend of the Mole.

I read and hear so much about the injuries done by the inoffensive mole that it would be well to be posted on result of experiments and studies made on the habits of these little creatures. The mole has an incredible appetite and feeds on nothing but insects, grubs, etc., and devours an immense quantity of them; a man fed one fifteen lob-worms four inches long, six white grubs and two Maybugs for supper and thought it could go until next morning, but to his surprise found it dead. The autopsy showed an empty stomach and everything digested—the mole had died of starvation. That would show, then, that the mole is in constant need of food, and imagine what great quantity of grubs and insects a nest of them will get rid of.

People who have studied it found out that the mole will starve before it will touch vegetable substances. It is then especially to hunt grubs, etc., that it digs those long runs in the ground. Of course if the moles get too numerous they might do some damage in cutting their way through in search of food, as they have to cut some small roots to do it; then it becomes necessary to reduce them, but it would not do to extermine them, as they do great deal more good than harm.

I think this study of insectivorous animals and birds should receive more attention on the part of farmers, as it is just as important as the planting, pruning and general care of orchards. What is the value of an orchard infected by insects? On the outside we spray, but inside the earth we can do but very little. I have seen some of my neighbors kill wood turtles, lizards, frogs and the like and when asked why they do such things they say they eat eggs. Just imagine a turtle climbing to a hen's nest! It would take a long time to train one to do that feat. Now, these turtles, frogs, lizards, etc., are some of the best friends we have. We buy frogs in France to turn them loose in gardens. It is nothing but ignorance of the true facts that lead people to kill them. I killed some birds that people say are nothing but a nuisance and when I opened them they were stuffed up with grasshoppers, white grubs, weed seeds and the like. Whenever we destroy anything like birds, frogs, lizards, turtles, moles, etc., we are just doing ourselves injury.

A. BIDAULT,
Smithfield, Texas.

Shading Strawberries.

Shading crops to promote early ripening or to improve quality is a practice considerably advocated of late. Some have reported excellent results in shading strawberries and the crop is one which might seem well adapted to the practice; since the plants can be shaded quite easily, the returns are large from small areas and the prices are much influenced by earliness and quality.

However, two years' testing by the New York Agricultural Experiment Station, in two localities, speaks stringly against the practice. Except on two varieties, which are known as good forcing berries, there was very little increase in yield, the time of ripening was not appreciably influenced, and the quality, except as to size, was unfavorably affected. The practice may possibly be of advantage where large berries are demanded and paid for by the market; but the expense more than counterbalances any advantage of the shading in general field culture.

"I would not be without The Fruit-Grower for ten times the subscription price."—C. A. Lewis, Waldron, Ark.

(Continued from Page Seven.)

in charge. Mr. Hale is a very busy man. Besides having perhaps the largest peach nursery in the world, he is postmaster at Winchester, and on the day of our visit his family were very busy trying to vote the saloons out of Winchester. But he took time to show us a portion of his stock. Mr. Hale formerly grew peach trees exclusively, but has now added other lines, and has a general line of fruit trees. Mr. Hale's experience has demonstrated that very fine stock can be grown here, of all kinds of trees. Mr. Hale, too, has a large stock of peach trees for next fall and spring, which will be advertised in The Fruit-Grower, as usual.

Mr. Hale took us to his farm, a few miles from town, which was found to be one of the finest places we had seen on the trip. The farm consists of over 500 acres of the best land in the state, all in a high state of improvement. Mr. Hale enjoys the distinction of owning his own natural gas well, which furnishes his light and fuel. The well is located a short distance from the house, and supplies only the needs of Mr. Hale's place. The entire house is heated in winter by gas, and this is the only fuel used for cooking, and also supplies all the light. Not only this, but in an outhouse Mr. Hale has a gas engine, which furnishes power to run his feed grinder, clover cutter, grindstone, etc. Power is ready at a moment's notice, and an experienced engineer is not required. While inspecting this plant Mr. Hale called our attention to his water system, which is one of the most complete we have ever seen. The source is a well of never-failing water, and instead of using a storage tank in the attic of the building or in some other high place, Mr. Hale uses the pneumatic system, as furnished by the Kewanee Pneumatic Water Supply Co., Kewanee, Ill. This system consists of a large tank, which can be placed in the cellar, or buried in the ground, or wherever desired. In Mr. Hale's case the tank is in the building with the engine and pump. The stop-cock of the tank is closed, leaving the tank full of air. Then water is pumped into the tank, compressing the air, and soon a high pressure can be secured. Then the inlet through which the water entered is closed, and the pressure of the air will force the water through the pipes to all parts of the house, and will give a strong pressure at the water hydrant in the yard. For ordinary homes this water is pumped in by hand, once or twice a week being sufficient; but in Mr. Hale's case he uses the gas engine and the work is easily and quickly done. An ample supply of water is thus always at hand, and if the tank is buried or placed in the cellar, there is no danger of freezing, nor is there a heavy weight on the floors of the building, as is the case if a large storage tank is placed in the attic. Besides using his gas in this way, Mr. Hale has several incubators and brooders, and gas is used in these machines, the pressure being the same at all times. While we were at Mr. Hale's place he showed us his mules (Missouri mules, too, by the way), in which he takes great pride. We present herewith a snapshot at some of the mules, which were as fine as we have ever seen. They were in splendid condition, with coats like thoroughbreds. A huge barn accommodates eighteen or twenty of these fine animals, each one with a large box stall of his own.

Returning to the town of Winchester, we were taken in charge by Mr. Chatten of the Southern Nursery Company, who drove us over a portion of his planting. This firm has a full line of nursery stock of all kinds—fruit trees, roses, ornamentals, etc. Like the other nurseries in this section, a specialty is made of peach trees, but the other fruits are not neglected. The stock was found in excellent condition, a block of Kieffer pear being especially fine, as shown by the accompanying illustration. The gentleman shown in the illustration is Mr. Chatten, the small boy is Hale Harrison, son of Mr. Orlando Harrison, Berlin, Md.

While we were still inspecting the planting of the Southern Nursery Company a severe rainstorm came up, and we were unable to proceed further. The rain prevented our visiting some of the other nurseries, such as the Cedar Hill Nursery, for late in the afternoon we were compelled to start north by way of Nashville, on the way home.

A great many nurserymen who attended the Atlanta convention visited the nurseries at Winchester and in that vicinity, and were pleased with what they saw. Every firm seemed to be prosperous, having done a good business the past season, and with outlook for good business next fall and spring, everyone was in good spirits. The country around Winchester is beautiful, and The Fruit-Grower representatives enjoyed the day spent there. J. M. I.

GANG OF PEACH BUDDERS, CHATTANOOGA NURSERIES, CHATTANOOGA, TENN.

Fertilizer Swindlers.

The rapid increase in the use of commercial fertilizers in Missouri has brought into the state as skillful a lot of swindlers as ever operated the "gold brick" scheme upon the unsuspecting farmers. Ashes, sand and other cheap substances are mixed together, nicely sacked and labelled and sold to the farmers as high grade fertilizers. So common has this practice become that the agricultural department of the University of Missouri is preparing a vigorous campaign against the manufacturers and distributers of this spurious article who place their goods for sale on the Missouri market. A new officer known as the fertilizer inspector has been appointed and it will be his duty to travel over the state and inspect the fertilizers offered for sale and properly label those found of good quality. Wherever distributers or manufacturers are found defrauding the farmers, the evidence secured by the University will be placed in the hands of the prosecuting attorney in whose county the sale was made and he will be assisted in prosecuting the swindlers.

About Peach Leaf Curl.

Your article on peach leaf curl in June Fruit-Grower inspires me to relate a little experience of ours this season. We have a peach tree which this season was very badly affected with the curl. As it was a little unhandy to get at we neglected to spray it in our regular spraying until the last day of May, when, the curl being very bad indeed, we drove down and gave it a good spraying. Result: Today there is scarcely a curl leaf on the tree, and its foliage looks bright and healthy. One spraying of Bordeaux, 50-4-4, was all it had, but that was enough. I will add that in main orchard of apple trees where there are a few peaches there has been no sign of curl leaf. These peach trees received the same treatment in way of spraying that the apple trees get.

E. E. HERRIMAN,

Mooresville, Mo.

This report is interesting, but at the same time it is well to offer a word of caution against using full strength Bordeaux on peach trees when in full leaf. Bordeaux is effective as a preventive of leaf curl, used before buds open in spring, but the foliage of the peach is singularly susceptible to injury by spray mixtures, and the leaves should be sprayed very carefully, and with a dilute mixture.

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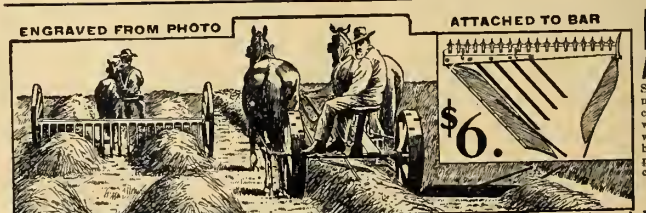

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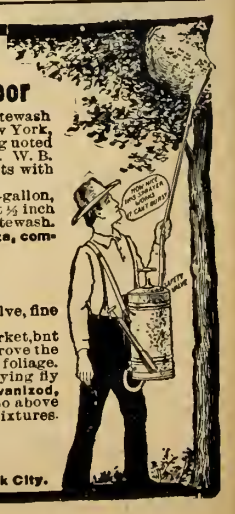

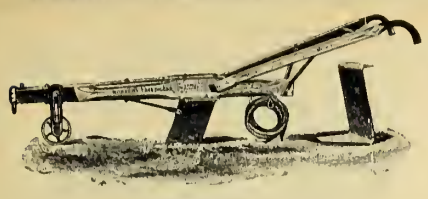

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Want PROPOSALS FROM a COMPETENT FARMER
to take charge of the farm at the Odd Fellows' Home, Liberty, Mo. Applicants will submit proposals, recommendations, and name all conditions in the application submitted, the same to be sent to the undersigned on or before July 30, 1904. The size of the farm is 250 acres.
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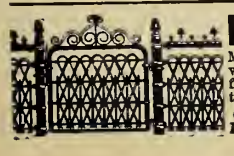

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Holsinger's Department

Graft.

I have heard of many grafts, but the latest, while no more remarkable, is decidedly novel. One of my tenants took me into his confidence recently to tell me of a fine thing that he was on to.

"I tell you, Major, I'm new at the garden business, but then I gardened last summer and I had a better garden than any of my neighbors."

"I'm glad to know that you were successful," I replied. "What line do you intend to specialize?" I asked.

"Raising seedless tomatoes."

"Seedless tomatoes? What's that?"

"I'm on to the best thing ever introduced, a new tomato that is without seeds."

"Oh, I understand, but how do you propagate them? You interest me more than you know."

"Why, you get the seed of Mr. —"

"Yes, but then you said they were to be seedless."

"Well, they are. I read of them in his book."

"Yes, yes, but I can't comprehend if seedless where do the seeds come from?"

"Oh! it is done by grafting."

"I thought so; simply another graft."

E. C. A., Lone Jack, Mo.—Some time ago Major Holsinger advised planting Wyant, Hawkeye and Surprise plums, instead of the Damson. Will the Major please describe the Surprise plum?

Not guilty. Never grew Surprise. Know nothing of it.

Meeting of the Johnson County Horticulturists.

By invitation of President Beechley of the Johnson County Horticultural Society I was enabled to be present and to talk on horticultural topics. It was arranged that I should visit my friend and comrade, Capt. E. P. Diehl at Olathe. As the Captain has some twenty or thirty acres of water and wishing to cast a line I took a run down on the morning of the 10th and fished. The next morning the Captain took me to the home of Comrade Henry Rhodes, some fourteen miles out. The day was all we could have wished, the roads good, company agreeable. What more could have been wished? The country is the most delightful. Homes are lovely, indicating intelligence and comfort. I doubt if a more contented, happy and industrious people live than those in the section through which we passed. Churches, school houses and one a "Grange Hall" quite commodious for the meetings, associations and institutions of the people were passed, showing the comfort and intelligence of the people. At the "Grange" I was shown through the new Grange store in Olathe, Kan. This is a fine structure for co-operative advantage. Possibly there is no institution of the kind in this country that has been so successful. Over 800 persons are its beneficiaries. It was undertaken, I think, in 1878, by a few individuals with a few hundred dollars. Last year a disastrous fire caused a heavy loss, yet out of the ashes has sprung a more imposing structure with the full stock of a "department store." There are a number of annexes in the neighboring towns, how many I can't tell.

At Gardener they have a very commodious store, which I had the pleasure of seeing. This institution, if written up by some one competent, would be interesting matter. We arrived at the meeting place and were warmly greeted by those already assembled.

Mr. Rhodes' home is an ideal one. Tall giant trees of cottonwood, ash, elm, sycamore and pines with shrubery furnish not only grateful shade, but pleasure to the eye.

I became reminiscent while seated upon the lawn. Forty-seven years ago, scarce out my teens, I had passed through this garden. There were no trees here then, no houses, no fences, no civilization—a dreary wilderness of grass and heaven—sky above, grass, grass all around. These lands belonged to "Sam"—our Uncle Sam. All one had to do was to stop upon them and they belonged to him. The surroundings were then uninviting because they were uninhabited. Could one have been able to look into the future and divined the beauty, wealth, comfort and intelligence, that in less than fifty years would here develop I doubt not I should have driven my stake here. Yet I plodded on down the Santa Fe trail in the hope that I should or might find a home worthy my ambition, one that would give me bread and furnish a home. It is a fact that to the emigrant this section was unattractive. These lands were considered thin and not so good farming land as that further west. This doubtless was because of the immense herds of cattle and mules used in the Santa Fe trade, which got all this sustenance from the luxuriant grass that was grazed. So I trundled on foot, sore and weary, with all my belongings upon my back. I think this day the hardest day's work I ever did. Of my own I had $2.50 in wealth, transportation to Lawrence was $5 by the hack, so I walked, determined to make Lawrence, forty miles away. In this I fell short, making Franklin, four miles east, footsore and weary. Putting up at an inn constructed of clap boards—it was the best ventilated house imaginable. This 8th day of March was cool and a fierce wind seemed to reach the marrow of my bones. A cot with only a light covering made this one of the most disagreeable nights of my life. Such was Kansas in 1857 when I trudged through this section first.

Thus my mind wandered. My, what a change!

The dinner was a regulation picnic affair. The ladies did themselves credit by ministering to our inward man. All were filled and much remained. The meeting was called to order by President Beechley, who made a neat address on the importance of horticultural organization, and then introduced me. I felt proud at being so handsomely introduced. My speech, which was a good one (modesty personified), I shall not attempt upon The Fruit-Grower family, as I feel satisfied it was an infliction upon those who heard it. A discussion followed that was entered into largely by many. Birds, insects, soils, blight, curl leaf and many kindred topics were considered. Being asked to give a reason and cure for pear blight I simply replied that the query came thirty-five years too late; that when I was new in horticulture I was able to discuss pear blight, but now I knew nothing of blight, but that President Beechley had some experience along this line and I hoped he would give his experiences to the society, as he had to me.

President Beechley—"I have had experience with pear blight. My trees all died but one that was affected by blight and as it was in the way and of no account, I having some pork pickle (salt) and thinking to kill the tree to get it out of the way poured the salt water on that tree. This was in March. That spring I took a sprinkling can and sprinkled this tree with a strong salt solution. It still grew finely. I now got other trees, some of which I treated in like manner. Of those thus treated all are doing nicely. Those of the same lot not so treated blighted, and that is all there is to it. I am satisfied the salt is a success and shall follow it up."

We replied that Mr. Beechley's success was worthy of trial and while we were skeptical we hoped he may have made a discovery and for one we would try his method and hoped others would do the same.

The Hon. Thomas Hogue, who was among the early members of the grand old Missouri Valley Society, gave a splendid talk on horticultural organization, using the Missouri Valley as his subject, and giving us considerable credit for its success. Of course modesty prevents us from penning what he said along this line. He did say, however, that some of his pleasantest moments were spent in fellowship with these veterans of pomology and how much he regretted his inability to be with and associate with them as in days of yore, and promised to be at the July meeting when held at the home of the Holsinger Brothers. We echo that we will indeed be glad to have you with us.

FRANK HOLSINGER.

"I have been out on the ranch and neglected my subscription to The Fruit-Grower. But I want it continued; having been taking it so long I could hardly do without."—S. M. King, Roswell, New Mexico.

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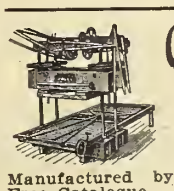

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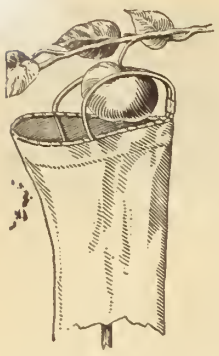

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Sold for $4.00 per bushel. Full again this year. Scarcely any on other kinds here. Will be shown at "World's Fair" in September. Buds of all kinds for sale, cut from choicest bearing trees.

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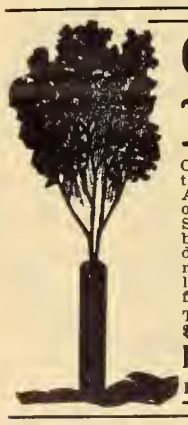
References: Mercantile Agencies; Corn Exchange National Bank, Chicago.



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Reports Concerning the Fruit Crop.

The Fruit-Grower's crop reports this month shows about the same conditions as were reported a month ago. In some sections the apple crop has deteriorated, while in others it has improved. The continued wet weather has been very hard on this fruit in the central valleys, and apples remaining on the trees are quite scabby. However, the reports will be found really encouraging to those of us who have been in the midst of the section where the rains have been the heaviest. In most places the blackberry crop is yet to be harvested, and prospects indicate a very heavy crop. Grapes, too, promise an unusually heavy yield, except in some places where the fruit is rotting, on account of the continued wet weather.

The Fruit-Grower wishes to urge correspondents to send in any notes of interest, in connection with these reports, such as the one reported by Mr. McCarthy, from Lockport, N. Y. Mr. McCarthy adds that coopers are asking 38 cents for barrels. This is interesting news, as indicating the trend of prices. So, too, all readers will be glad to learn what prices are being asked or offered for apples. Any suggestions for the improvement of these reports will be thankfully received, for The Fruit-Grower wants this feature to be of great help to all who are interested in the apple business. Our reports for this month follow, nearly all the reports having been made on July 7:

Huntington, Ark.—Apples fair crop, peaches the same. Japanese plums are fine. You can say to The Fruit-Grower readers that people in this part of the country will make no mistake in planting such plums as Gold, Shiro, Sultan, Climax and Red June.—S. B.

Gravette, Ark.—Apples promise one-third crop; had none here last year. Some scab on fruit, otherwise in good condition. Peaches promise 20 per cent crop, of good quality. Grapes full crop, blackberries heavy crop, and other small fruits were abundant.—P. A. R.

Springdale, Ark.—Apples promise half crop; had none last year; fruit is scabby, but with few worms. Have few Elberta peaches, but have some fruit of other varieties and plenty of seedlings. Grapes promise good crop, but rotting badly. Blackberries were heavy crop; mostly gone. We had 89 cars of strawberries from this place, which beats the shipments from Gentry, and we want credit for it. Continued rains hard on apples—R. I. J.

Bentonville, Ark.—Apples promise about 35% crop, which is more than double last year's yield; some fruit is scabby, but free from worms. Elberta peaches promise one-third crop, seedlings full crop. Grapes promise fine crop, but there is some rot. Blackberry crop best on record, and strawberries and raspberries were good, but weather interfered with them.

Fayetteville, Ark.—Apples promise 40% crop, double the crop of last year; fruit on trees is imperfect. Peaches are short crop, but all kinds of berries are full crop. Apples are affected by scab; too much wet weather.—W. G. V.

Fruita, Colo.—We have heavy crop of apples here again. June drop was light and we have few worms. I go a good deal on the reports in The Fruit-Grower, and find them reliable.—W. E. R.

Canon City, Colo.—Apples, 65% crop, with fruit in good condition. No peaches for market. Large crop of grapes. Large crop of currants, with good prices. Marketing the largest crop of cherries in our history, with prices poor, ranging from $1 to $1.25; late varieties promise better price.—J. W. W.

Centralia, Ill.—Apples 25 to 30% of crop, or 5 times as many as last year. Fruit on trees growing well and free from insects; some scab. Peaches are spotted; some localities none and others full crop. Grapes good. Blackberries good. Growers generally pronounce the apple crop a total failure. This doubtless will be more or less true where no spraying is done; at packing time there will be little good fruit.—W. S. P.

Quincy, Ill.—Apples, 50% crop, much larger than a year ago. Fruit is excellent in sprayed orchards, bad in unsprayed. Grapes fair crop. Blackberries were winter-killed; other small fruits fair crops. Too much rain here.—C. H. W.

Alton, Ill.—Apples 25% or less, about same as last year. Fruit in good condition. Peaches, 20% crop. Grapes full crop, but being injured some by rot, owing to excessive rains. Blackberries, half crop, with rust very prevalent. Other small fruits full crop. There is not so much rot as one would expect, owing to excessive rains; this is probably due to low temperature.—E. A. R.

Kinmundy, Ill.—Apple crop promises to be about 10% the crop of 1902, with fruit in poor condition. Peaches light crop; blackberries light.—A. V. S.

Jerseyville, Ill.—Apples, 20% crop, about same as last year; fruit fairly perfect, some scab.—I. D. S.

Hamilton, Ill.—Apples promise about 33 per cent crop, against no fruit last season; fruit in good condition, except for some scab. No peaches. Grapes fair crop, but rotting where not sprayed. Prospects for blackberries are good; other small fruits were good crop.—H. D. B.

Savoy, Ill.—Apples 80% crop, against no fruit last year. Fruit in good condition. Blackberries promise good crop.—R. L. D.

Clayton, Ill.—Apples, 20% crop; fruit in poor condition. No peaches. Excellent crop grapes, blackberries fair; other small fruits poor.—G. A. S.

Vincennes, Ind.—Apples, one-fourth to one-half crop, with fruit in fair condition. Few peaches, except on high points. Grapes good crop; blackberries half crop.—H. M. S.

Ames, Iowa.—Our fruit prospect, especially in the apple line, are exceptionally good.—A. T. E.

Glenwood, Iowa.—Apples, 40% crop; fruit in good condition. Peaches, 35% crop, mostly seedlings. Grapes, 20% crop; most of the old vines dead. Blackberries, 25% crop; winter-killed badly. Raspberries, 30%. Cherries an extra crop, plums 40%, all varieties; quality of fruit fair.—J. P. J.

Hamburg, Iowa.—Apples, 25% crop, which is more than we had last year; fruit in bad condition, on account of fungous diseases, nearly all orchards affected, sprayed as bad as unsprayed. Paeches, 60% crop, counting budded and seedlings. Blackberries full crop. Big crop cherries and currants, 50% crop of plums.—J. M. B.

Villisca, Iowa.—Apples half crop, which is considerably more than we had last year; Ben Davis in poor condition, others fair. Peaches and grapes promise good crops. Other small fruits fair.—H. S. A.

Atchison, Kan.—Apples 10% crop; fruit in fair condition, but falling. Peaches small crop, but good. Grapes and blackberries, full crop and good. Other small fruits good.—O. H. P.

Topeka, Kan.—Apples the state over promise fair crop; fruit on trees good. More than average crop of peaches. Grapes and all small fruits, extra good.—W. H. B., Sec.

Holton, Kan.—Apples, 25% crop; no apples last year; fruit is scabby where not sprayed. Peaches, 50 to 75%. Grapes full crop; blackberries 75%. Cardinal raspberries full crop, other varieties light. Dewberries fine. Will have more apples than had two years ago.—F. W. D.

Wichita, Kan.—Apples, 40% crop; not so many as last year; considerable blight in orchards. Peaches scarce and wormy. Grapes fine, but bursting. Blackberries plentiful, but wet weather is hurting them. Plums wormy, and not large crop. Apples are dropping, and if wet weather continues a poor crop is assured.—E. G. H.

Rosedale, Kan.—Apples are covered with scab and practically worthless, the poorest showing I have ever seen. Peaches half crop. Grapes and blackberries full crop; raspberries half crop.—F. H.

Leavenworth, Kan.—Apples, 5% crop, much blight among apple and pear trees. Peach trees have recovered from the leaf curl, and promise a crop of seedlings, with a few budded sorts. Grapes and blackberries are carrying fine crops and doing well. Other small fruits were also good. The crop of pome fruits is nearly a failure, but believe the future years will be good.—E. J. H.

Amherst, Mass.—Apples half crop; about same as last year; fruit in fair to good condition. No peaches. Grapes only fair. Strawberry harvest good. Plums coming on finely, with weather favorable.—F. A. W.

Watervliet, Mich.—Apples promise 60% crop. Fruit in good condition. Peaches, 25%. Grapes, 65%.—R. H. S.

Columbia, Mo.—Apples, 10 to 15% crop; fruit in good condition. Peaches promise half crop along Missouri River hills, 5% crop elsewhere. Grapes promise best crop in years, except that they are rotting some. Blackberries and other small fruits, 75% crop. Too

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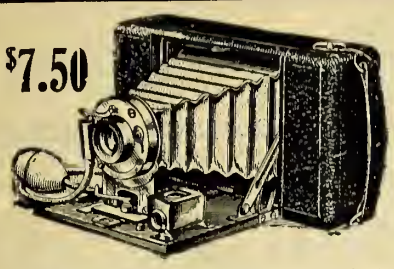

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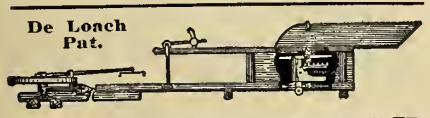

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wet for berries except on well-drained land.—J. C. W.

Odessa, Mo.—Apples, 20% crop; fruit in very poor condition, badly scabbed. Peaches will be 60% crop. Grapes full crop, in good condition. Blackberries full crop; other small fruits generally good. Apples on trees will not be worth much.—S. H. P.

Lebanon, Mo.—Apples promise one-fourth crop, against no crop last year; fruit in fair condition. Few late peaches. Prospects good for grapes and blackberries.—A. T. N.

Oregon, Mo.—Apples very small crop, with fruit small and scabby. Peaches, 15% crop. Blackberries full crop. Grapes full, but rotting somewhat. Wet weather is playing havoc with all crops.—N. F. M.

Mountain Grove, Mo.—Apples, 25% crop, which is more than we had last year. Fruit in fair condition. Peaches, 10%; blackberries, 80%; grapes, 80%. Back some ten or twenty miles there is a very good apple crop; about 75% Ben Davis and Jonathan; early apples, 50% crop.—Mrs. J. C. M.

Koshkonong, Mo.—Apples, 20% crop; fruit in poor condition. Peaches, 65% crop. rGapes, 90%; blackberries, 100% —T. M. C.

Richards, Mo.—Apples, 10% crop; fruit fair to poor. Light crop of peaches, but good crop of blackberries and grapes. Heavy rains; sprayed trees begin to show an advantage over unsprayed.—W. H. B.

Cabool, Mo.—Apples light crop. Peach crop has begun to move; crop is good, conservative estimates being that 6,000 crates will be shipped from here, mostly Elberta and varieties of that season. Berries were plentiful and made fair returns. Grapes promise well.—C. W. G.

Springfield, Mo.—Greene County will have 15 to 20% crop of apples; crop is some larger than last year, and of better quality; a large percentage of the fruit is defective. No peaches for shipment, except a few crates from especially favored locations. Blackberries promise good crop; other small fruits were good. Grapes full crop. At Birch Tree, Mountain View and other points in Howell County which I visited last week, I found many apple orchards which have 40 per cent of crop; never saw better Jonathans or Ben Davis than in some of these orchards. —G. A. A.

La Plata, Mo.—Apples, 30% crop; more than last year; 60% of fruit is free from scab, 95% free from worms. No peaches. Blackberries and other small fruits full crop. Apples which were not sprayed are badly scabbed. —J. E. M.

Brownville, Neb.—Apple promise half crop, with fruit in fair condition. Peaches one-third crop, of good quality. Grapes promise an enormous crop. Blackberries and other small fruits full crop.—R. W. F.

Tecumseh, Neb.—Not more than one-fourth crop of peaches; fruit of fair size and somewhat specked. Peaches good crop, and fruit promises to be large and luscious. Grapes full crop. Blackberries loaded at this time, but cannot bank on them yet. Other small fruits good crop. Season is very wet and backward.—W. G. S.

Jay, N. Y.—Prospects for two-thirds of apple crop.

Adams Basin, N. Y.—Not over half crop of apples, or perhaps three-fourths as many as we had last year; fruit generally in good condition. Peaches, 50% crop. Grapes very good. Blackberries promise well. Prunes and plums a failure. Apples have dropped badly and continue ot do so.—C. O. B.

Hall's Corners, N. Y.—Apples promise 75% full crop, but not so many as last year; fruit in good condition, except for some fungi. Peaches promise 30% crop, trees badly injured. Grapes, 60% crop. Plums and pears light crop. —T. B. W.

Fayetteville, N. Y.—Apples, 90% crop; fruit in very fine condition. Grapes, 85% crop. Small fruits very good crop.—F. E. D.

Lockport, N. Y.—Apples promise 60% of crop, with fruit in good condition. Peaches half crop. Grapes full crop; blackberries, two-thirds crop, and other small fruits one-half to two-thirds crop. Coopers are asking 38 cents for barrels.—D. T. M.

Roswell, N. M.—Apple crop is good, Winesap, Ben Davis and Missouri Pippin.—R. F. B.

Rockwood, Ohio.—Apples promise one-fourth to one-third full crop or nearly twice as much fruit as we had last year. Condition of fruit fair, where well sprayed; poor or none where not well sprayed with liquid spray. Peaches, grapes and blackberries promise good crop. A few orchards have good apples and about two-thirds to three-fourths of full crop, but some have no fruit. Rome Beauty promises best of all winter varieties.—U. T. C.

Port Clinton, Ohio.—Between 25 and 50% of our peach trees were killed by cold winter. Will have a fair crop on the trees left.—H. R., Jr.

Yukon, Okla.—One-fourth crop of apples, or about half what we had last year; fruit in fair to good condition. No peaches. Blackberries full crop, but not many grown here. Apple trees are in good condition, and what fruit there is will be fine.—A. S. P.

North East, Pa.—Apples promise about half crop, or same as 1903. Condition of fruit is fairly good. Peach crop very light. Grapes, 85% of crop; look perhaps a little better. Cherries light crop, plums moderate crop.—A. I. L.

Tidal, Pa.—Apples, 65% crop; fruit in good condition. Peaches, 10%. Grapes, blackberries and other small fruits full crops. Very wet weather may cause rot.—R. F. S.

Harrisburg, Pa.—Apples promise half crop, against full crop last year; fruit in fine condition on sprayed trees. Peaches promise 25% crop, fruit buds having been badly frozen. Grapes full crop; condition fine. Blackberries, 75 per cent; other small fruits, 50 per cent; too much rain.—G. H.

Lakebay, Wash.—Strawberry crop cut short by unprecedented drouth in May and June. In spite of this I picked, on June 20, 210 quarts of Oregon Everbearing berries from a plot 50x55 feet, and left fully 30 quarts on the vines. Two-thirds of this yield came from half the patch, the other half having dried out.—F. A. C.

Opportunities in the Cheap Fruit Lands of the Southwest.

The area adapted to fruit-growing along the Cotton Belt Route is being extended. It is being demonstrated by practical experiment that peaches, plums, pears, early apples, berries and most all small fruits can be grown successfully in Southwest Arkansas and Northwest Louisiana as well as in Northeast Texas.

This year peaches were marketed at Texarkana and Shreveport as early as May 20th, strawberries from two to three weeks earlier. The country is rolling enough to provide complete drainage; the soil is of a reddish, sandy loam, underlaid with clay; warms up early and is highly productive. The fruit attains large size and is given exquisite coloring.

The particular advantage of the newer sections are that the land can be bought cheaper and in larger tracts than in the older and better known districts. The finest fruit land convenient to shipping station and close to important towns can be secured at from $5 to $8 per acre. Tracts ranging from ten acres up to several thousand can now be bought. Recently a number of large tracts have been purchased and are being platted into small fruit farms of twenty, forty, sixty and eighty eacres. They are to be cleared and set to orchard and sold to small growers.

Land values are increasing and almost incredible reports are made of quick turns and large profits.. Undoubtedly the person or company or syndicate that secures a tract of this land at present prices and develops a commercial orchard or plats it into small blocks and colonizes it from Northern fruit districts will be assured of handsome returns on the investment within a short period.

This company while owning no lands, is interested in the development of this territory and is in touch with parties controlling many large tracts and can give prospective investors valuable assistance in finding what they want. Literature will be forwarded upon request and correspondence on the subject is invited.

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Gardening Department

A Record Worth While.

We often notice the big headlines in the daily papers telling of this or that record being broken, tennis maybe, or throwing a hammer, or running a hundred yards, but when some boy gets out and does something really worth while and of some value to all concerned, it is passed by unnoticed. For instance:

Just the other day at Shenandoah, Iowa, Randall Henderson, age sixteen, a high school boy working durlng vacation for a dollar a day, picked 207 quarts of strawberries in a little over seven hours. There were no cheering crowds to spur him on, no special correspondents telegraphing the score to waiting millions of readers. Just crawling along in the hot sun picking berries, with every half hour or less a trip to the packing shed with a couple of carriers of berries and a chance to straighten his back.

He wore no sporting trunks or white flannels, simply a pair of blue striped overalls, a hickory shirt and a big straw hat, no crimson initials on his sweater, but maybe some crimson berry sta'ns on his knees.

But the berries were all well picked, the row was clean, the boxes full, and the berries all had the stems on, his berries could be set in crates and the lid nailed down without the formality so often necessary of turning a box to see if they were all right. He didn't quarrel over choice of rows or gouge on the fellow next to him.

The only glory was a paragraph in the local paper that he had picked 207 boxes in seven hours and fifteeen minutes, making a final spurt of nearly forty boxes in the last hour.

Because it is something really useful in the world, very little attention is paid to it and it is considered of very small importance.

He may go to college some day and win a championship at tennis, or golf or possibly at tiddleywinks, and get the glory that is due him, but it will be a long time before he does anything that will be of more real value and importance and more indication of the man he will be than the feat of picking more berries and picking them a little better than any one else on the job.

What think you?

What to Plant Now.

At this time of year there is always more or less vacant ground in the garden and it is a question what to plant in it. There is still time to plant cucumbers for pickles. Plant the early sorts such as Early Cluster and Early Frame and they will make you lots of pickles if frost holds off well. Wax beans can be planted yet and will do well. Peas will also do well. Almost any of the early varieties of these will do. It is too late for sweet corn unless pretty well south, but it could be put out for fodder. Celery can be set yet and there is still a chance for cabbage or cauliflower. It is just the time of the year for turnips and late radishes. In fact there are lots of things that can be planted profitably up to the first of August or even later. If you are needing horse feed it will pay to sow or drill cane or kaffir corn. These make lots of feed. Millet will grow still quicker, but is not so good for horse feed. Siberian millet is the best kind to sow late.

Some Strawberry Experience.

The most striking thing I have noticed the past month was the success of the Senator Dunlap strawberries. I had never fruited it before as I dug all of them last year for plants to set a larger bed. I had a good block of them this year and they were the finest berries I have ever seen in twenty years' experience with strawberries. The patch was set in April, 1903, on high ground following a crop of potatoes the year before. Rows were three feet apart and tended mostly with a riding cultivator. Mulched in December with coarse manure which was mostly left on in the spring. I have no accurate figures as to the yield, but I know that at one picking they averaged a carrier (six quart) to every twelve feet or row. This would be about 6,000 quarts to the acre for a single picking and we had several other pickings but none as large as this one. They were fine berries in appearance and flavor and size and I do not see how they could be improved very much. I notice in the reports from large growers that they are not used much by the majority of them, but I can't see why. I expect to set a large block next spring and they will be practically all of this variety.

Another thing I like about them they are great to live and spread and there is never any trouble to get a good stand. They spread like a bad weed and that is what the average farmer wants. Now the Clyde is a nice berry, but it has a weak plant and it did not give me a fourth the yield that the Senator did, simply because there were so few plants to the row. It had the same chance, but was naturally weak. Sample was better, but was far from being as good as the Senator, and is farther handicapped by being a pistillate, while the Senator is the strongest sort of a staminate.

My choice next to the Senator would be the Special.

Fall Setting of Strawberries.

About this time of year I always get lots of calls for advice as to setting strawberry plants in July or August. People get anxious to have a patch and want to get it in the quickest possible time. They have read that plants can be set in August, and a full crop gathered the next spring. Now listen! I have never in my twenty years' experience growing strawberries known of any one in this part of the country making a success of a patch set in the summer or fall. Furthermore I do not think it possible that any one should do so. It may do in the East or in the South, but here in the corn belt there is practically only one month in the year to set strawberries and that is April. Set them early, tend well through the summer, mulch in the winter, and you are practically sure of a big crop the next May or June. Now if you are seized of a fever to set a patch in August, go ahead and set them, but don't figure on many berries from the venture. It will keep you quiet till next spring and then you can start in right. It might be well to inquire around and see if you can find any one who ever set a patch in the fall and got a good crop the next spring.

Notes from a Seedsman's Trial Grounds.

The prettiest lettuce has been the Grand Rapids. It is just the right color, a light fresh green, nicely curled, but not too much so, and makes a nice shaped bunch. Simpson is much like it, but not quite so curly and handsome. Hanson is better than either one for a head lettuce. Thin it out to a foot apart each way and it makes a big head. California Cream Butter is the best of the smooth or cabbage lettuce. The leaves spread out close to the ground and the head is large and flat. The Prize head and Tomhannock are very similar, both red edged and very tender. The new French Asparagus lettuce is of the Cos type and is more a novelty than of real value. I expect to try bleaching some of it by banking it up.

Of the beets for table use the Eclipse seems to lead the list again as it has for several years. It is the first one big enough to use and is nice shape and very tender. The Egyptian is a little better in color, being a deeper red and it is a little flatter in shape, but it does not get big enough to use quite so soon. Same with the Blood Turnip. The only possible fault with the Eclipse is that it is a trifle light in color. If we could get a beet as early, as large, and as tender, but of a deep blood red color it would be a great thing. I got a sample this year of a new blood red beet from a seedman friend in Denmark. It is the reddest beet I ever saw, tops and all being a very deep, dark red. It is smaller than any of the others and while it is early, it is not as early as I would like. It would be nice to follow about a week after Eclipse and would capture the markets with its color. Shape is fine. The yellow table beet is about the prettiest one of the lot, being of a perfect globe shape, tender and sweet, but its color would bar it from most markets. I have not found any of the novelties in beets so far that are any ahead of the old standbys, Eclipse, Egyptian and Blood Turnip.

The cool, damp weather has just suited the peas and I have never seen a better crop of them. As usual the

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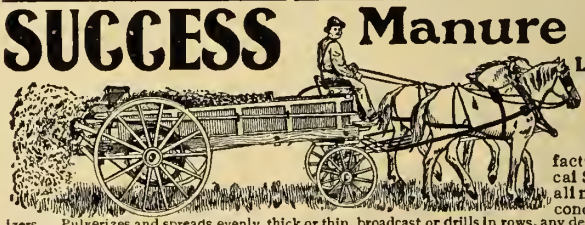
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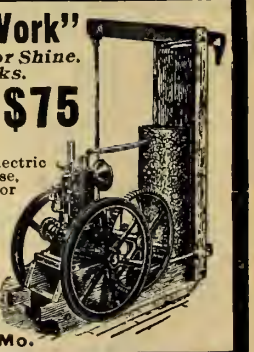
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WE PAY CASH weekly and want more home and traveling salesmen. OUTFIT FREE.—STARK BRO'S, Louisiana, Mo., Atlantic, Iowa, Fayetteville, Ark.

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Alaska heads the list for earliness. It yields about as well as any of the extra earlies and has the advantage of all of them in earliness. Planted May 19, they were ready to pick about June 28, or forty days from planting. The various strains of Improved Extra Early or First and Best came in about July 1st, and the Notts Excelsior by July 4th. Of course this is late in the season for early peas, but I did not plant till May 19 as I wished to avoid all chance of frost injuring the tests. Tom Thumb is not ready yet (July 5), but looks like it would be in with the Gem by July 8. Fillbasket and Advancer, will follow them and will evidently be ready by July 10 or 12. This is the most successful test of peas I have ever made, as the weather has been perfect for them and I have had a chance to see exactly what they would do. It is the first year that I have ever made a good crop of Notts Excelsior. It cannot stand grief, but in a good year like this it does wonders. In a year when the conditions were unfavorable to peas the smooth extra earlies would beat it three to one.

It is too early yet to make any definite report on the beans as they were not planted till May 20, and are hardly ready to pick yet with the exception of an unnamed green pod variety sent in by one of my customers. I will tell you more about it next time. Of the standard sorts the Stringless Greenpod will be the first of the green ones and the Davis Wax will be the first of the wax sorts. I was surprised to find that the Stringless Greenpod was earlier than the Valentines. I had always thought the Valentine was the earlier of the two but it would seem not.

I have been experimenting some to find how old beans have to be to be no good. I planted samples from several years back and I find that there is no difference to be seen between seed beans grown in 1903 and those from 1902. Back of that, however, there is a sharp decline. Seed from crop of 1901 is a very poor stand and any older than that was a total failure. Peas seem to show almost exactly the same results. It would seem that beans and peas can be held over one year but no more. Samples of lettuce seed also showed almost exactly the same results. Personally I prefer absolutely new seed of all varieties, but from my experience of this season it would seem that if you have good seed on hand a year old it is safe to plant. You might remember this in sorting over your seed box next spring.

The various fodder plants were all planted May 20, drilled in rows two feet apart and well tended since. At this writing, July 5, the common corn has made the most growth of any, being about four feet high. Flint corn, dent corn, and sweet corn, all seem to be about the same height. Of the other stuff the cane, Kaffir corn, German millet, Siberian millet, pencillaria, speltz and rape, all are very near the same height, from 2 1-2 to 3 feet. Teosinte is much smaller, and Early Fortune millet and Billion Dollar grass are a flat fizzle. They have been growing a little over six weeks now and the rape would make a great quantity of green feed to the acre. Of the ones that could be cut and cured the pencillaria looks like it would make the most dry fodder and the cane a close second. The field corn is bigger, but will not stand as close planting and is more washy. Cane and pencillaria also have the advantage of sprouting up again after being cut. Soja beans and cow peas and Canadian peas planted at the same time are doing finely. The Canadian peas have made the most growth, but they have about reached their best, while the soja beans and cow peas are only well begun. From the present appearance of the lot I would prefer the soja beans. They grow upright and will be easy to cut or to plow under. HENRY FIELD.

Shenandoah, Iowa.

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Every young man or woman who expects to attend some business college and secure a business education, should not overlook the all important fact that "the best is always the cheapest." The school that prepares young men and women to fill responsible positions and the one that is endorsed by thousands of students, is the one that bears investigation. The Kansas City Business College secure positions for all of its graduates. No young man or woman can regret attending a school where as thorough instruction is given as may be had there. Attention is called to their ad. in this issue.

FLIES.

Now is the time you should protect your cows and horses from the torments of flies and mosquitoes, when there are many valuable preparations on the market to protect them. Cows that are not protected will lose in flesh, and will not give within one-third as much milk as animals that are

protected. By being sprayed with some reliable fly repellant, stock will fatten faster and horses will drive and work better.

The Rippley's Fly Remover and Sprayers advertised in this paper for the past several years has been thoroughly tested and endorsed by many parties that have used it. It is very cheap, and parties who have used it claim that they save $8.00 to $10.00 per head on milk cows, as they give one-fourth to one-third more milk, when they are protected with Rippley's Fly Remover, which is a liquid preparation and sprayed on with a Hand Sprayer.

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This means, of course, that Liquozone would cure germ diseases. It opened the way to cure diseases which were generally called incurable. It was this fact that gave the product its value.

The Company which purchased Liquozone immediately appropriated $500,000 to give a million bottles away to a million sick ones. They also offered to furnish it free to every hospital and to every physician. The result has been that in six short months the product has come into almost universal use. Four laboratories, with 22 floors and 500 employes, are occupied in producing it. Four glass factories are employed to make the bottles for it. Within one-half year, Liquozone has come into larger use than any other remedy ever attained.

The offer of the first bottle free is still published. It appears elsewhere in this paper. It opens the way for any of our readers to make a test of this new and remarkable product without cost, and we advise them to do it.

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In the purchase of any machinery it is invariably the part of wisdom to thoroughly investigate the claims and records of the different manufacturers in the field. This is especially true of machinery subject to the heavy work and strain demanded in the manufacture of cider. No machinery is subjected to heavier work, and none involves greater annoyance in case of breakdowns.

The 1904 catalogue of the Boomer & Boschert Press Co., of Syracuse, N. Y., cannot fail to be of interest and value to everyone identified with the cider or wine making industry. In addition to showing and listing a complete line of the latest and best machinery, a number of pages are devoted to facsimile reproductions of letters from various well-known firms who are landmarks to the trade. For instance, the H. J. Heinz Co. put in their first B. & B. press in 1886. They have added to this from year to year, until today they use seventeen presses, running night and day throughout the season, and report their complete satisfaction.

This catalogue is free on request to the Boomer & Boschert Press Co., Syracuse, N. Y. Send for it.

Don't slight your face. It is better to be harsh with your wife's relatives than with your face. You can forget them once in a while, but your face is always with you. If it is rough and sore from the use of cheap, inferior soap, why not try a real shaving soap such as "WILLIAMS." Williams Shaving Soaps are the acme of comfort and refinement, and make shaving a luxury. See their offer elsewhere in this paper.

In China, many of the people "shave dry," that is, without moistening the beard. It can hardly be a pleasant performance, but not much worse in its effects than the use of cheap, inferior soap. Shaving is a delicate operation, and demands a soap made for the especial purpose. As per their offer elsewhere in this paper, The J. B. Williams Company will send for the cost of mailing a trial tablet of Williams' Shaving Soap—"the only soap fit for the face." It won't take long to write them and your face will never cease to thank you.

Climax Fruit Picker.

Elsewhere in this issue the Climax Fruit Picker, New Philadelphia, Ill., has an advertisement which will appeal to many Fruit-Grower readers. This is a device which will secure apples and other fruits from the top-most branch, without the use of ladders, or climbing into the tree. This picker is well recommended, and our readers should look for the advertisement and write the firm, mentioning The Fruit-Grower when you do so.

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With a view to insuring intending visitors to Saint Louis during the World's Fair period satisfactory accommodations the Merchants' Service Company has been organized, being at present the authorized agent of the owners or lessees of a large number of hotels, apartment houses and private residences in the city, and is fully equipped to rent furnished rooms for lodging purposes. Under the arrangements which have been perfected it is proposed to hook intending visitors, whether individuals, families or clubs, for apartments such as they desire, both as to location and price, thus assuring those who are coming to the Fair relief from anxiety as to where they will stay. An understanding has been reached with the Merchants' Service Company whereby our patrons can secure satisfactory accommodations at a nominal expense.

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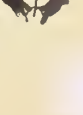

Questions and Answers

R. E. L. Black, R. F. D. No. 1, Sampsel Station, Mo., wants a receipt for making blackberry wine or brandy for medic'nal use. Who can furnish the same? Address direct to the subscriber, as above, for Mr. Sampsel will want to use same shortly.

D. L. M., Springdale, Ark.—Please tell the method of growing gooseberry plants for setting. What is the most profitable variety for this section? I have a few plants of Downing, and wish to propagate them, if there is no better variety. (2) Will Lucretia dewberries sell as readily on market as blackberries, and do they ripen with wild dewberries, or earlier?

Answer by Dr. Whitten: (1)Gooseberry plants are usually grown from cuttings, which may be taken from the new wood in winter and planted out with only one or two buds above the ground in early spring. The Downing is the best variety for your section. (2) The Lucretia dewberry sells as readily on the market as do blackberries. They ripen perhaps a little earlier than the wild dewberries, though the wild ones vary somewhat as to season.

T. E. M., Glen Ellyn, Ill.—Can any of The Fruit-Grower readers give me the name of a grape which is on the market in the late fall, which is usually packed in 5-pound square baskets, and comes, I think, from California. Berries are black, large and long, rather than round, and it is entirely different in every way from the Concord variety, being more on the order of the grapes which come from Italy or Spain. I would like to know if this grape, if it can be identified from this description, can be grown in Northern Alabama.

Who can give the name of the grape? However, it is safe to say that the variety, from the description, is of a class which will not succeed in the locality named.

W. C. F., Smithville, Mo.—Please publish the formula for making pickles like those sold in stores, and not brine-preserved. I have had difficulty in keeping them firm and brittle.

Who can furnish this information? We shall be glad to hear from one who can do so.

W. H. B., Socorro, N. M.—If you will tell me of some easy way to kill sweet clover, I will take five papers and give them to my friends. This weed grows tall and stout, and is about to take my whole orchard. I cannot grub it out, nor kill it with salt. What shall I do?

Answer by Dr. Whitten: About the only way to manage sweet clover in an orchard is either to give clean cultivation for a few seasons to kill it out, cultivating often enough so the clover will not get a start; or else to mow it frequently through the summer and allow it to rot on the ground.

W. F. M., Index, Ark.—I have recently become a subscriber to your valuable paper, and being very much interested in growing winter apples, I submit you a few questions which I wish answered in The Fruit-Grower when convenience will permit. (1) Will you please give a formula for making a good white wash for trees that will not wash nor scale off, and that will prevent rabbits from gnawing off the bark? (2) I pruned some trees last winter that had been set one year, cutting back from half to two-thirds of last year's growth, leaving four to six limbs from one-half to one foot long. Now, how should I prune these trees from now on? Should I cut this year's growth back any more or just thin out the limbs? (3) Should I leave a leader to grow straight up that I don't cut back any? (4) In this locality the Jonathan apple commences to ripen in August and are all gone by the middle of September; is this common for them? (5) There is a white growth resembling white mould on my two-year trees. What is this and what will prevent it? (6) Will turning under green rye on poor land in orchard damage the trees, or is it beneficial?

Answer by Dr. Whitten: (1) I know of no whitewash which will not peel from the trees. The most durable whitewash, however, is made by slacking the lime with hot water, stirring it so no parts of the lime burn dry at the time of slacking, and allowing it to stand covered in the tub until it has cooled and adding water sufficient to retain it in a somewhat thin paste. To each 10 gallons of whitewash a half pound of dissolved glue and an ounce of salt should be added. If skim milk instead of water is used for thinning the wash before it is applied to the trees, it will stick all the better. A teaspoonful of crude carbolic acid in each gallon of the wash will prevent the rabbits from injuring the trees. (2) The trees referred to should be pruned only sufficiently to keep the side branches off about equal length and to keep them shorter than the main central trunk, so the latter will keep in the ascendency. Thinning out limbs should be done very judiciously, as rather dense heads are desirable in this western climate. If, however, a limb is rubbing and interfering with other branches too seriously, it may be removed. For the most part your young trees do not require vey much thinning of the branches. The writer prefers to leave a straight central leader which should not be cut back. (3)In your section the Jonathan apple should normally ripen the last of August. (4) The growth resembling white mould on your trees is probably woolly aphis. Tobacco dust or tobacco stems applied in very small quantities to the roots of the tree will kill the aphis. The earth should be removed from the roots, tobacco dust spread lightly about them and the earth replaced. Those which come above ground may usually be killed by rubbing off. (5) Turning under the green rye in the orchard will usually benefit the trees.

J. B. S., Winchester, Va.—(1) I have an apple orchard seven years old, nice thrifty trees; it is well set with a heavy crop of saplin clover. The land is thin. I would like to let this clover fall and lie on the ground, but I am afraid it will be an invitation extended for ground mice this fall and winter. Now, what I want to ask is this, what can I do to prevent them from injuring the roots of trees and let the clover lie on the ground this winter? Would it do any good to dig up or cultivate the ground around under the trees, and let the balance of the crop lie on the ground. (2) We have a disease here called blight or fire blight; it is attacking quince, pear and apple and seems to be worse on the York Imperial apple than any other variety. Is there any remedy for it? Kindly let me know through your paper, the best fruit journal in America.

Answer by Dr. Whitten: (1) Your idea of mowing the clover and allowing it to lie on the ground in your orchard is a good one. If you follow the plan which you suggest, of cultivating the earth around the trunk of each tree, keeping it bare, it will usually prevent ground mice from injuring trees. If the mice are very abundant in your neighborhood, however, it will be well to watch the trees in winter, and should they begin to attack the trunks, wrap the trees with thin wooden wrappers, screen wire, corn stalks, or inexpensive thin cloth wrappers to a height where the mice cannot reach over them. (2) There is no definite remedy for blight. The most feasible remedy is to cut out the living patches of the blight during next winter or very early spring. You can find directions for doing this work in former issues of the Fruit-Grower or in the State Horticultural Society's reports. We are indebted to Mr. M. B. Waite of the Department of Agriculture, Washington, D. C., for the most practical method of cutting out this blight in late winter.

B. H. D., Welch, I. T.—I would like to have some sample copies of The Fruit-Grower as a help in securing subscribers. I want to send you a list of ten or twelve subscribers and would like that many samples if you can spare them. I certainly appreciate The Fruit-Grower and for that reason want my friends and neighbors to share the benefits of the paper with me. However with The Fruit-Grower, the different state societies reports, the state bi-ennial reports and the United States Department year book as guides, I am, if anything, more at sea than ever. I have a fine young orchard of modest proportions, set spring of 1903. The trees have made almost phenomenal growth. I headed low, being careful to retain the central leader in each case. Now I have as many heads as there were branches last year with an extra one, which is also extra high for the central leader, and also the original head formed at first. And there is no end to the wood growth, limbs interlacing, etc. I hate to cut anything out or back except crossing limbs. Yet they say "cut 'em off." I am afraid there may be fruit buds forming and that in pruning they will be destroyed. I have a cherry tree; fire destroyed all the balance of my cherry trees, which were set spring of 1903, and removed to another location spring 1904; bore a nice crop of fully matured cherries; about 3 pints I should say. One apple tree bloomed this season. I wish I could distinguish a fruit spur and bud from any other kind of spur or bud. To close this jumbled letter I will say my orchard has received best of culture, is located on gentle northern slope, rather sandy soil slightly mixed with clay and also some rocks, sandstone, a soil that hardly dries out and yet is well drained.

Answer by Dr. Whitten: In your section of the country it will probably be better not to prune your apple trees severely. In winter, however, it may be desirable to thin out some of the limbs that are interfering with each other's growth too much and to shorten slightly any that may be outgrowing the others sufficiently to form a one-sided tree. In the Central West, however, those who prune are as likely to prune too severely as they are to prune too little. It is not usually best to cut off large limbs where it can be avoided. Fruit buds can usually be distinguished from leaf buds because the former are usually larger, rounder and plumper while the latter are usually small and thin.

J. E. F., Guthrie, Okla.—(1)Will you give me in next issue, the best way you know of for saving tomato and melon seeds? (2) Would also ask what you mean by the sap flowing down in a tree as I saw your reference to it in May issue. Now this is something new to me, as I never heard before of the sap flowing downward in a tree, unless the tree were dying. My idea of sap is that it always goes upward when moving, which is during growth of tree. After it accomplishes its purpose it remains dormant and as long as sap is going up bark will slip freely. In its dormant state the bark remains tight to the tree. (3) I would also ask if you can give me any advice in regard to straightening up apple trees which have been blown over by a cyclone. We have about 50 trees loaded with fruit lying flat on the ground. Heavy rains have set the dirt around the roots so we will have to dig away on one side, but don't like to tackle the job during hot weather, as am afraid it would kill the trees. They are in bad shape and would like some advice as to their resurrection as it is a hard proposition to lose such trees after fifteen years of faithful cultivation.

Aneswer by Dr. Whitten: (1)A convenient way to save the seeds of tomatoes and melons is to place the specimens from which seeds are to be selected in the sun until they decay sufficiently to form a watery mass inside. The seeds may then be poured out into a bucket of water and easily washed free from the surrounding pulp. If the seeds are taken out in this way just at the proper time, they will separate from the fermenting mass of the melon or tomato, and may be washed clean in water. After being washed clean, the seeds should be taken out of the water and dried on sheets of paper until their surface is sufficiently dried so they will not mould, when they may be put away for

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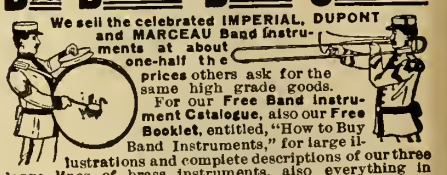

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planting the next year. Care should be taken, however, that the seeds are sufficiently dry before storing, that they will not mould. Even after proper drying it is best not to store them at first in air-tight receptacles, or the additional moisture given off from them will induce the development of mould. (2) The meaning of the statement "the sap flowing down in a tree" in the May issue of The Fruit-Grower, undoubtedly refers to the fact that the elaborated sap which has been assimilated in the leaves is distributed throughout all parts of the tree, including its roots, through the growing layer between the bark and the wood. Since the crude sap which comes up from the roots is not capable of forming new tissue direct, it passes to the leaves, where, in the presence of the green coloring matter and in contact with the atmospheric air taken in through the leaves, it is assimilated, or made ready to build up tissues of the tree, when it passes outward from the leaves in the growing layer over all parts of the tree. This general distribution of the sap from the leaves is downward. Your statement is perfectly correct with respect to the crude sap as it is taken from the roots, that it passes upward from the roots, when it is evaporated largely from the leaves, and it is only the assimilated food portions which remain to be redistributed throughout the tree and into the root system through the growing layer. (3) The best way to straighten up apple trees that have been blown down by a cyclone is to pull them up into an upright position and fasten them to upright stakes so that they will stand. Then replace the earth about the roots. It is best to straighten them up as soon as possible after they go down and before the ground becomes dry. An attempt to raise them after the ground has become dry about the roots may injure the root system.

F. Y., Wichita, Kan.—(1) Please tell me what it is that bites the twigs off my cherry trees; it is on the new growth, about one inch from the old wood; they are bit off and left hanging by a little strip of bark; the trouble is mostly confined to Early Richmond. (2) Is there no way to fight the bark beetle except to cut the infested trees down and burn them? (3) What causes the leaves to fall from my English Morello and Wragg cherry trees? They are young trees, full of fruit, with hardly a leaf on them. They were the same way last year, and this spring I sprayed twice with Bordeaux mixture, but it did no good. (4) What causes the peach trees to drop their leaves from the old wood? There are no leaves on the trees, except on the new growth of this year. I keep my trees well cultivated.

Answer by George I. Reeves, Missouri Experiment Station: (1) The insect which is biting the cherry trees is probably the twig pruner, a forest insect which frequently invades orchards near forest trees. The insect cannot be reached by spraying and if the orchard is situated near a forest, the owner will probably experience more or less trouble with this insect every year. (2) There are other ways to fight the bark beetle besides to cut down infested trees. It is a good plan to cut out infested branches of otherwise sound trees and burn them. In the second place, the trees should be kept in as healthy a condition as possible by cultivation and fertilization, and the trunks and large limbs and as many of the smaller limbs and twigs as possible should be covered with a repellant wash, which could be applied just before the beetles emerge in early spring, with a force pump, and soften as necessary thereafter before the leaves appear, after which it should be applied by means of a whitewash brush to the trunks and large limbs. We have found the following to be an excellent formula for the wash: Dissolve as much common washing soda as possible in six gallons of soft water, then dissolve one gallon of ordinary soft soap in the above and add one pound of crude carbolic acid and mix thoroughly; two pounds of lime is then slacked in two gallons of water and filtered so as to remove all dirt and small lumps. This is now added to the above and mixed, while to all is added one-half pound of paris green or one-fourth pound of arsenic and thoroughly mixed. The adult usually emerges from the tree about the latter part of March. (3) The dropping of the leaves of the cherry trees may be due to the cherry leaf spot, a fungous disease which has been very bad for several years. However, it is unusual that the leaves should have all fallen from the trees so early in the season. It may be that last year the disease was prevalent, causing a weakening of the tree, and that the second spraying given the trees this spring further injured the foliage, as the foliage of cherry and peach trees is easily injured by spray mixtures. To spray with bordeaux mixture is the proper remedy, but for the sprayings after the blossoms appear a weakened solution is best. (4) The peach trees may have shed their leaves because of leaf curl, which has been worse this season than for many years. The trees outgrow the disease by putting out new, healthy foliage, and the older leaves will drop away. The remedy is to spray with Bordeaux mixture, full strength, before growth starts in the spring.

B. H. D., Welch, I. T.—(1) Can you tell me what caused this apple tree to die from top down? (2) What is the white stuff on the twigs? (3) What are the cocoons picked from apple trees? I am inclosing above three specimens under separate cover and think you will have no difficulty in distinguishing the specimens as numbered.

Answer by Geo. I. Reeves, Missouri Experiment Station: (1) The apple twig sent is affected with what is known as the apple canker, a fungous disease. About the only successful preventive is to cut out and burn the cankered parts. In cutting them out, the cut should be made below the actual dead area a few inches to be sure to get below the point of infection. If the canker, however, is on the trunk of the tree, the outer surface can be chipped off and burned. All wounds where the canker is cut or chiseled off should be painted as soon as possible with common white lead oil paint. In a few weeks one should look over the wounds and if the presence of canker is observed on account of the exudation of sour sap, another cut should be made below the wound and this should also be painted. (2) The white stuff on the twigs is the cottony new growth from the body of the woolly aphis. (3) The cocoons picked from the apple trees are the cocoons of the leaf-crumpler.

A Long Keeping Apple.

On November 8, 1901, when we gathered our last apples of that year's crop we noticed the fruit on one tree in a row of Winesaps was different from that variety, though much like it in size, shape and color, as well as spreading habit of tree, but the flavor and color of flesh were different. Not being able to have it identified about here I sent some samples in April, 1902, to Mr. G. B. Brackett, Pomologist Agricultural Department, Washington, D. C., who in turn sent some to Prof. J. Stinson, then director of the Missouri Fruit Experiment Station, Mountain Grove, Mo., who had made an extensive study of Arkansas seedling apples, but neither of these gentlemen could identify it. At my request Mr. Brackett gave "its rating according to scale adopted by the American Pomological Society," which follows: "Form roundish, size medium, colored, striped; flavor subacid, quality good; season late." "I find this to be quite a good apple with remarkably good keeping qualities," * * * * "It is an apple certainly well worthy of cultivation and I hope I can be able to trace its history and origin to its name if it has one," etc.

We have exhausted every means known to us without being able to identify it. As this tree had a very full crop in 1901, it had none in 1902, and last year was full of bloom which were all killed by the severe freeze of April 30 and May 1st. It has borne none since, however we have kept a few of them until now the last one has begun to decay.

They were kept in an ordinary farm apple house or apple cellar without ice or care, except to keep them away from mice by hanging up a bucket to one of the overhead joists; therefore not the coolest place and for a large part of the time during the past two summers the large door of the apple cellar was wide open. These apples never shriveled; the last one is still plump but by long confinement in the dark lost most of its color.

Rogers, Ark. O. MULVET.

The Missouri Farmer.

Missouri, Grand Missouri; there may be
states that toot a louder horn:
None can outshine your glory—'tis like
the dawning of the morn,
When in Spring the sun is rising with
its dazzling golden ray,
Or hallowed halo of its setting in the
eve of every day.

There's nothing that you cannot do
with old Missouri's soil,
By using brains, good judgment and
reasonable toil.
Just tickle her proud bosom with a
plough, spade or a hoe
And you will be delighted with the
crops that you can grow.

The mineral wealth of this great state,
I know by far excells
The riches of King Solomon of whom
the Good Book tells;
The herds and flocks of Abram's time,
and beasts of Noah's ark,
Compared with our stock of today
would be left in the dark.

O, I could tell you wondrous tales
about Missouri's wealth,
But this will be a clincher, that her
people have good health—
Good health from top of head to bottom of their feet
And a genuine hearty appetite and
good food for all to eat.

Her preachers, teachers, doctors, merchants, and laborers, too,
Have each got their profession "pat"
and know just what to do:
But the farmer and his helpmeet with
their tools of modern make,
Are smiling individuals who furnish all
the cake.

Yes, all the cake and frosting and the
ice cream, if you please,
And I right here will tell you the
farmer's the "whole cheese,"
And he is adding millions to the wealth
of old Missoo,
So take off your hat and make a bow,
and tell him "how-de-do."

Yes, adding millions to the wealth of
every clime and land,
The farmer's the foundation rock on
which all else must stand.
A noble hearted monarch—and every
body knows
He maketh dear old Mother Earth to
blossom as the rose.

To blossom as a garden—his hope exceedeth all—
Before his sturdy energy the mi
forests fall.
And all the vast, extending, almost
endless, prairie fields
Are responding to his labor with great
abundant yields.

His cattle roam a thousand hills—his
flocks fill every plain;
The products of his brain and brawn
we have in fruits and grain.
He starts the wheels of commerce vast
by filling ships and trains,
From his endless labor only can others
get their gains.

The farmer's wife's an uncrowned
queen of pure nobility—
God made no nobler being—she's good
enough for me,
Her hands have rocked our cradle—her
prayers guide us through life,
Give honor to whom honor's due—God
bless the farmer's wife.

We won't forget the children—God
keep them from all harm—
There's not a crop that can compare
with children on the farm:
There they have more chances to grow
up healthy, wise and just,
Learn to do good to others and in God
to put their trust.

WM. F. NEHRING, Milo, Mo.

Strawberry Report from Sibley, Mo.

This season made it difficult for me to make a favorable report on several new varieties which I am testing. The season was cold and ten days to two weeks late and rained three to five days out of a week and fully 50 per cent rotted on the vines, some varieties not coloring up.

Cameron's Early was first to ripen; ripened first berries may 2d; quality only fair; not productive; not profitable.

Johnson Early showed a few ripe berries on the 25th of May, of medium quality and size and a shy bearer; will drop it from my list.

Texas comes in with Johnson Early and produced only a few berries, not worth picking.

Pocomoke bore a good crop of large, nice berries, good color and quality. I think it will prove a valuable berry.

Senator Dunlap came in three days behind Johnson's Early and bore a large crop, above the average in size and unexcelled in quality and lasted to the end of the season. It is by far the best berry on my place out of about forty varieties. No matter how wet or dry or how hot the sun shines, you can rely on the Senator Dunlap in every case.

Monitor was very productive, large, but too soft and light colored. Don't think much of it.

Gibson was a complete failure for the third time; will be dropped.

Marie bore a large crop of large, round berries of poor quality; will try it also another season.

Uncle Jim—season medium; large, rough berries; white on under side; short season; not a sensational berry here by any means.

Wm. Belt and Kitty Rice, both failures on account of rust.

Miller produced a few good berries; most all rotted, but what few I picked were large and fine. I think well of it.

Brunette, one of the best for family use, medium in size and productiveness, dark color, fine quality.

Glen Mary, Margaret and Brandywine are failures this season, from a profitable standpoint.

Aroma bore a good crop of large, handsome berries, light red in color, of fine quality. I consider it best of late varieties. W. H. PEAK.

Sibley, Mo.

Maher & Grosh Knives Are Best.

My brother, who has just received his Montana Favorite, is well pleased. I believe you have my name on your books covering a period of nearly 20 years, which means to say that I use Maher & Grosh knives and no others. Yours truly, F. A. Braun, San Francisco, Cal., June 20, 1904.

We have in stock just fifty unbound volumes of The Fruit-Grower for 1903. If you want last year's paper, write at once, and send

Fifty Cents

That will be the price while they last, and we suggest that you write immediately if you desire a set, for the supply will not last long. THE FRUIT-GROWER CO., St. Joseph, Mo.

Big Horn Basin

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These sections offer rare opportunities to the ranchman, farmer and investor.

Folders giving valuable and reliable information will be sent free on application.

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Burlington Route.
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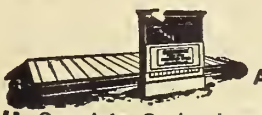

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Complete Scale above the Ground.
Steel Joist. Steel Frame.
Frame 9 Inches High.
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Poultry Department

Feeding Hens for Eggs and Cockerels for Market.

The Maine Experiment Station has done some excellent work in the line of poultry raising, and the results of the experiments are most interesting. The report of the station of the methods of feeding hens for eggs and cockerels for market are here published, for the benefit of Fruit-Grower readers:

Feeding the Hens.

For twenty-one years we have been at work with the same family of Barred Plymouth Rocks and have learned one way to feed and handle them to secure eggs, and to avoid the losses which are so common to mature hens of that breed, from overfatness. Other methods of feeding may be as good or even better. While it is true that only the full fed hen can lay to the limit of her capacity it is equally true that full feeding of the Plymouth Rocks, unless correctly done, results disastrously.

Years ago the "morning mash," which was regarded as necessary to "warm up the cold hen," so she could lay that day, was given up and it was fed at night. The birds are fed throughout the year daily as follows: Each pen of twenty-two receives one pint of wheat in the deep litter early in the morning. At 9:30 a. m. one-half pint of oats is fed to them in the same way. At 1 p. m. one-half pint of cracked corn is given in the litter as before. At 3 p. m. in winter and 4 p. m. in summer they are given all the mash they will eat up clean in half an hour. The mash is made of the following mixture of meals: 200 pounds wheat bran; 100 pounds corn meal; 100 pounds wheat middlings; 100 pounds linseed meal; 100 pounds gluten meal; 100 pounds beef scrap. The mash contains one-fourth of its bulk of clover leaves and heads, obtained from the feeding floor in the cattle barn. The clover is covered with hot water and allowed to stand for three or four hours. The mash is made quite dry, and rubbed down with the shovel in mixing, so that the pieces of clover are separated and covered with the meal. Cracked bone, oyster shell, clean grit and water are before them all of the time. Two large mangolds are fed to the birds in each pen daily in winter. They are stuck on to large nails which are partly driven into the wall, a foot and a half above the floor. Very few soft shelled eggs are laid and, so far as known, not an egg has been eaten by the hens during the last five years.

We are testing another method of feeding with several pens of hens this year. It consists of the morning, 9:30 a. m., and 1 p. m. feedings of dry food in the litter as usual, but instead of the mash at 3 p. m. all the dry cracked corn they will eat is given in troughs. Beef scrap is kept before the birds at all times, in elevated troughs where they cannot waste it. They are supplied with grit, oyster shell, bone, and mangolds. Dry clover leaves and chaff are given them on the floor each day. One pen of 30 hens were fed through last year in this way with good results, and 150 hens are being fed on the dry food, through this year, in comparison with a like number of their mates that are having mash at 3 p. m. feeding, as usual with us.

Feeding the Chicks.

For feed for young chicks we make bread by mixing three parts corn meal, one part wheat bran, and one part wheat middlings or flour, with skim milk or water, mixing it very dry, and salting as usual for bread. It is baked thoroughly, and when well done if it is not dry enough so as to crumble, it is broken up and dried out in the oven and then ground in a mortar or mill. The infertile eggs are hard boiled and ground shell and all, in a sausage mill. About one part of ground egg and four parts of the bread crumbs are rubbed together until the egg is well divided. This bread makes up about one-half of the food of the chicks until they are five or six weeks old. Eggs are always used with it for the first one or two weeks, and then fine sifted beef scrap is mixed with the bread.

It may be that the bread is not necessary and that something else is just as good. We have tried many other foods, including several of the most highly advertised prepared dry chicken foods, but as yet have found nothing that gives us as good health and growth as the bread fed in connection with dry broken grains.

When the chicks are first brought to the brooders, bread crumbs are sprinkled on the floor of the brooder among the grit, and in this way they learn to eat, taking in grit and food at the same time. After the first day the food is given in tin plates, 4 to each brooder. The plates have low edges, and the chicks go onto them and find the food readily. After they have had the food before them for five minutes the plates are removed. As they have not spilled much of it, they have little left to lunch on except what they scratch for. In the course of a few days light wooden troughs are substituted for the plates. The bottom of the trough is a strip of half inch board, 2 feet long and 3 inches wide. Laths are nailed around the edges. The birds are fed four times a day in these troughs until they outgrow them, as follows: Bread and egg or scrap early in the morning; at half past nine o'clock dry grain, either pin head oats, crushed wheat, millet seed or cracked corn. At 1 o'clock dry grain again, and the last feed of the day is of the bread with egg or scrap.

Between the four feeds in the pans or troughs, millet seed, pin head oats and fine cracked corn, and later whole wheat, are scattered in the chaff on the floor for the chicks to scratch for. This makes them exercise, and care is taken that they do not find the food too easily.

One condition is made imperative in our feeding. The food is never to remain in the troughs more than 5 minutes before the troughs are cleaned or removed. This insures sharp appetites at meal time, and guards against inactivity which comes from over feeding.

Charcoal, granulated bone, oyster shell and sharp grit are always kept by them, as well as clean water. Mangolds are cut into slices, which they soon learn to peck. When the grass begins to grow they are able to get green food from the yards. If the small yards are worn out before they are moved to the range, green cut clover or rape is fed to them.

After the chickens are moved to the range they are fed in the same manner, except that the morning and evening feed is made of corn meal, middlings and wheat bran, to which one-tenth as much beef scrap is added. The other two feeds are of wheat and cracked corn. One year we fed double the amount of scrap all through the growing season and had the April and May pullets well developed and laying through September and October. To our sorrow they nearly all moulted in December, and that month and January were nearly bare of eggs.

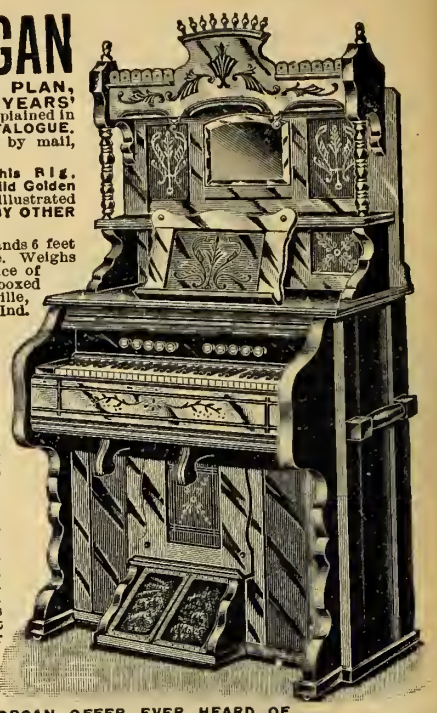
Feeding the Cockerels for Market.

When the chickens are moved to the field the sexes are separated. The pullets are cared for as explained above. The cockerels are confined in yards, in lots of about 100, and fed twice daily on porridge made of 4 parts corn meal, 2 parts middlings or flour, and 1 part fine beef scrap. The

$19.90 FOR THIS BIG ORGAN

NO MONEY WITH ORDER PLAN, FREE TRIAL OFFER, 25 YEARS' GUARANTEE—all are fully explained in our new, BIG FREE ORGAN CATALOGUE, which we send to any address by mail, postpaid, FREE on application.

FOR $19.90 we furnish this Big, Handsome, Solid Golden Oak Parlor Organ, exactly as illustrated hereon, GUARANTEED THE EQUAL OF ORGANS SOLD BY OTHER HOUSES AT NEARLY DOUBLE OUR PRICE.



THIS ORGAN is the very latest style for 1904. Stands 6 feet high, nearly 4 feet long and 2 feet wide. Weighs packed for shipment, about 350 pounds. At our special price of $19.90 we furnish this handsome instrument carefully boxed and delivered on board the cars at the factory at Louisville, Ky., or if the freight is lower, will ship from New Albany, Ind. THIS ORGAN IS MADE OF SELECTED OAK, BEAUTIFULLY FINISHED, handsomely carved and decorated, as shown in illustration; has 8 stops, large, strong bellows, perfect action; is fitted with a handsome mirror.

OUR SPECIAL $19.90 PRICE is made possible by reason of making these organs in our own factory at Louisville, Ky., operating our own sawmill at Lyons, Ky., buying all raw materials from first hands, turning them out in very large numbers, using the latest, most improved automatic machinery, and giving our customers the benefit of all this saving, adding only our one small percentage of profit to the actual cost to us.

IN OUR FREE ORGAN CATALOGUE, the handsomest and most complete organ catalogue ever published, we show a very large and handsome illustration of this, our $19.90 organ, also very large, full page illustrations of our Acme Queen, Parlor Gem, Royal Grand, Imperial Grand and an immense variety of other new and attractive styles at prices ranging from $19.90 to $44.95, with some exceptionally fine new designs at $26.45 to $34.50. This New, Free Organ Catalogue describes every piece and part of every organ we make, is a much bigger and handsomer catalogue than is shown by any other maker. Explains our one year's free trial plan, our no money with order proposition, our 25 years' binding guarantee, tells why we can make the best organs made in the United States and sell them for about one-half the price charged by others, carries with it THE MOST ASTONISHING ORGAN OFFER EVER HEARD OF. If not, have you a friend who could use an organ if the price was low enough, the offer liberal enough, the greatest chance ever known! If so, cut this ad out and send to us, or on a postal card say "Send me your Free Organ Catalogue" and the catalogue, our several propositions and our new and most astonishingly liberal offer ever made will all go to you FREE, BY RETURN MAIL, POSTPAID. Address,

HAVE YOU ANY USE FOR AN ORGAN?

SEARS, ROEBUCK & CO., Chicago, Ill.

ARE YOU INTERESTED IN THE SOUTH?

Do You Care to Know of the Marvelous Development Now Going On In

The Great Central South?

Of Innumerable Opportunities for Young Men or Old Ones—To Grow Rich?

Do you want to know about rich farming lands, fertile, well located, on a Trunk Line Railroad, which will produce two, three and four crops from the same field each year? Land now to be had at from $3.00 to $5.00 an acre which will be worth from $30.00 to $150.00 within 10 years? About stock raising where the extreme of winter feeding is but six (6) short weeks? Of places where truck growing and fruit raising yield enormous returns each year? Of a land where you can live out of doors every day in the year? Of opportunities for establishing profitable manufacturing industries; of rich mineral location and splendid business openings?

If you want to know the details of any or all of these, write me. I will gladly advise you fully and truthfully.

G. A. PARK, General Immigration and Industrial Agent

LOUISVILLE & NASHVILLE RAILROAD CO.

LOUISVILLE, KY.

We Will Buy

A 50c Bottle of Liquozone and Give it to You to Try

Liquozone is the only way known to kill germs in the body without killing the tissues too. It is the only way to end the cause of any germ disease. It is also a vitalizing tonic with which no other known product can compare.

It is new in America, and millions who need it don't know of it. For that reason, we make this remarkable offer. We will buy the first bottle and give it to you if you need it. We will do this gladly to let the product itself show you what it can do.

We Paid $100,000

For the American rights to Liquozone—the highest price ever paid for similar rights on any scientific discovery. We did this after testing the product for two years, through physicians and hospitals, in this country and others. We paid it because Liquozone does what all the skill in the world cannot do without it. Any drug that kills germs is a poison, and it cannot be taken internally. Every physician knows that medicine is almost helpless in any germ disease.

Not Medicine

Liquozone is the result of a process which, for more than 20 years, has been the constant subject of scientific and chemical research. Its virtues are derived solely from gas, made in large part from the best oxygen producers. By a process requiring immense apparatus and 14 days' time, these gases are made part of the liquid product.

The result is a product that does what oxygen does; and oxygen is the very source of vitality, the most essential element of life. The effects of Liquozone are exhilarating, vitalizing, purifying. Yet it is a germicide so certain that we publish on every bottle an offer of $1,000 for a disease germ that it cannot kill. The reason is that germs are vegetables; and Liquozone —like an excess of oxygen—is deadly to vegetable matter. That is why Liquozone kills every disease germ, and with a product which to the human body is life.

Germ Diseases

These are the known germ diseases. All that medicine can do for these troubles is to help Nature overcome the germs, and such results are indirect and uncertain. Liquozone kills the germs, wherever they are, and the results are inevitable. By destroying the cause of the trouble, it invariably ends the disease, and forever.

Asthma
Abscess—Anemia
Bronchitis
Blood Poison
Bright's Disease
Bowel Troubles
Coughs—Colds
Consumption
Colic—Croup
Constipation
Catarrh—Cancer
Dysentry—Diarrhea
Dandruff—Dropsy
Dyspepsia
Eczema—Erysipelas
Fevers—Gall Stones
Goitre—Gout
Gonorrhea—Gleet
Hay Fever—Influenza
Kidney Diseases
La Grippe
Leucorrhea
Liver Troubles
Malaria—Neuralgia
Many Heart Troubles
Piles—Pneumonia
Pleurisy—Quinsy
Rheumatism
Skin Diseases
Scrofula—Syphillis
Stomach Troubles
Throat Troubles
Tuberculosis
Tumors—Ulcers
Varicocele
Women's Diseases

All diseases that begin with fever—all inflammation—all catarrh—all contagious diseases—all the results of impure or poisonous blood.

In nervous debility Liquozone acts as a vitalizer, accomplishing what no drugs can do.

50c Bottle Free

If you need Liquozone, and have never tried it, please send us this coupon. We will then mail you an order on your local druggist for a full-size bottle, and we will pay your druggist ourselves for it. This is our free gift, made to convince you; to show you what Liquozone is, and what it can do. In justice to yourself, please accept it today, for it places you under no obligation whatever.

Liquozone costs 50c and $1.

CUT OUT THIS COUPON

for this offer may not appear again. Fill out the blanks and mail it to the Liquid Ozone Co., 458-460 Wabash Ave., Chicago.

My disease is .....

I have never tried Liquozone, but if you will supply me a 50c bottle free I will take it.

.....

.....

.....

M 110 Give full address—write plainly.

Any physician or hospital not yet using Liquozone will be gladly supplied for a test.

Farms for Sale

FOR SALE—One of the finest seven and eight year old orchards in the state, consisting of Apples, Pears, Plums and Cherries, adjoining the beautiful little city of Rochester, Indiana. A most desirable place, convenient to Chicago and Indianapolis markets. For particulars, address Dr. J. C. Spohn Rochester, Indiana.

FOR SALE—80 acres farm; 40 acres in Apple orchard. One mile from station; good surroundings, correspondence solicited. L. M. Harris, Plymouth, Kansas.

FOR SALE—100 acres within 3 miles of Columbia, Mo., only $35 per acre. All in grass but about 6 acres, a good start of small fruits, 4 roomed house, barn and necessary outbuildings, good spring in pasture; Columbia is one of the best local markets for small fruits in Missouri. Address W. E. Kingsbury.

FOR SALE—Fruit farm, 240 acres, 55 acres cleared, 30 acres in apples, standard varieties; 5 acres in pears, Garber and Kieffer, 10 years old. Situated in Carter County, Mo., near Frisco railroad. Trees in good condition. Address H. H. Ranney, Cape Girardeau, Mo.

LANDS—CHEAP.

Large bodies of land and ranches; timber land, fruit and truck farms in Kansas, Oklahoma, Texas, Old Mexico, Louisiana, Arkansas, Southern Missouri, Colorado, New Mexico and California. Tell me what you want and where you want it and how much money you will invest if suited and will send you list of bargains of the kind you want in that locality. I also have small farms and ranches in all parts of said States. I am working above mentioned territory thoroughly. Write me and see how well and how promptly I will serve you. I have land at 35 cents to $35 per acre.

GEORGE W. MORRIS,
Lyndon, Kansas.

We are the largest dealers in real estate in Grand Valley, the famous peach, apple and pear growing section of Western Colorado. Orchards here 8 years old net the grower from $500 to $700 per acre. The climate is the best in the world and is a specific for lung and throat troubles and asthma. Write us for information. The Home Loan & Investment Co., 357 Main Street, Grand Junction, Colorado.

DO YOU WANT CASH
FOR YOUR REAL ESTATE OR BUSINESS?

I can get it for you. Send me full description and lowest cash price. My methods differ from all others. My office is headquarters for cash buyers. Makes no difference where you are located. Write today. Established 1881. Bank references.

FRANK P. CLEVELAND,
Real Estate Expt.
2954 Adams Exp. Bldg., Chicago, Ill.

CASH for your farm, business, home or property of any kind, no matter where located. If you desire a quick sale send us description and price. If you wish to buy a business or property of any description tell us your requirements. We can save you money.

N. B. JOHNSON REALTY CO.,
506-K Bank of Commerce Bldg., KANSAS CITY, MO

Fruit Land Snap

Get busy you fruit men and take up some of these snaps. Your chance for an orchard. The best orchard land in the world; 160 acres, McDonald Co., Mo., sw. corner state; 4 miles R. R.; 30 cultivated; 2 sets improvement; barns, 100 bearing fruit trees; 3 springs, all good fruit land. Only $900 for 160. Perfect title; come see it. This is one of many. Write for what you want. I have it. Big list free. Fine pocket map Mo., Ark., Okla., Texas and Kansas, 10 cents stamps, each state.

LOTT, "The Land Man," 127 W. 8th Kansas City, Mo.

300,000 Acres of Wild Land For Sale

in the Lower Peninsula of

MICHIGAN

Michigan Lands are now CHEAP.

The demand is rapidly increasing and they will soon double and treble in value.

Write for Circulars and Particulars.

Michigan Land Association
MANISTEE, MICHIGAN

WANTED—A practical fruit-grower as partner and manager of a large fruit farm. Small capital required. Address W. J. S., 4043 Juniata St., St. Louis, Mo.

mixed meals are wet with skim milk or water—milk is preferred—until the mixture will just run, but not drop, from the end of a wooden spoon. They are given what they will eat of this in the morning and again towards evening. It is left before them until all have eaten heartily, not more than an hour at one time, after which the troughs are removed and cleaned. The cockerels are given plenty of shade and kept as quiet as possible.

We have found our chickens that are about one hundred days old at the beginning to gain in four weeks' feeding, from one and three-fourths to two and one-fourth pounds each and sometimes more. Confined and fed in this way they are meaty and soft and in very much better market condition than though they had been fed generously on dry grains and given more liberty. Poultry raisers cannot afford to sell the chickens as they run, but they can profit greatly by fleshing and fattening them as described. Many careful tests in chicken feeding have shown that as great gains are as cheaply and more easily made, when the chickens, in lots not to exceed 100, are put in a house with a floor space of 75 to 100 feet and a yard of corresponding size, as when they are divided into lots of 4 birds each and confined in latticed coops, just large enough to hold them. Four weeks has been about the limit of profitable feeding, both in the large and small lots. Chickens gain faster while young. In every case birds that were one hundred and fifty to one hundred and seventy-five days old have given us comparatively small gains. The practice of successful poultrymen in selling the cockerels at the earliest marketable age is well founded, for the spring chicken, sold at Thanksgiving time is an expensive product.

A very large proportion of the chickens raised in this state are sent to market alive, without being fattened, usually bringing to the growers from twenty-five to thirty-five cents each. The experiments referred to above indicate that they can be retained and fed a few weeks, in inexpensive sheds, or large coops with small runs, and sent to the markets dressed, and make good returns for the labor and care expended. The quality of the well-covered, soft fleshed chickens, if not too fat, is so much superior to the same birds not specially prepared, that they will be sought for at the higher price. The dairy farmer is particularly well prepared to carry on this work as he has the skim milk which is of great importance in obtaining yield and quality of flesh.

A Good Firm Located in a Good Market.

We wish to call the attention of our readers to the advertisement which appears in this issue of our paper, of Frank C. Shilling, Green Bay, Wis., as he has just what he claims to have in his advertisement, "A good market, none better," and, with the outlet which he has working as he does in addition to his city several nearby cities and having a large shipping trade throughout Northern Wisconsin and Northern Michigan, shippers can readily see that he has an outlet which it is very hard to overload or overstock.

A Helper and a Saver.

Many of our readers find clover seed one of their most profitable crops, but in the usual way of handling about one half the seed is lost. Even those who find clover seed profitable will be interested in an ingenious device made by W. I. Short (Mfg. Co.) of Quincy, Ill. It is called the "buncher and seed saver" and can be easily attached to any mower cutter bar. It leaves the swath in a nice windrow and not only saves the seed, by preventing the horses tramping it out on the next round, but saves labor as well. The "buncher and seed saver" may be used to advantage also in cutting alfalfa, flax, oats or peas, or even in cutting weeds to burn. Illustrated circulars describing this and other specialties of use and interest to farmers may be had for the asking.

How to Organize a Farmers' Telephone Line.

Farmers everywhere are much interested in the subject of farm telephones, which have connected so many homes throughout the country. A great many of these telephone lines have been organized and erected by farmers, and are now giving the best of satisfaction. Knowing that other farmers are interested in this matter, the Stromberg-Carlson Telephone Company has secured from a number of these independent companies letters telling just how the companies were organized and the lines erected. These letters, together with a great deal of other helpful information, such as model constitution, rental blanks, etc., are contained in a booklet, No. F-32, entitled, "How Successful Telephone Systems Have Been Organized." This booklet should be studied by everyone who contemplate putting in a telephone line, for the facts there presented are furnished by farmers and others who have had this experience. The booklet will be sent free to all who write to Stromberg-Carlson Telephone Mfg. Co., 70 West Jackson Boulevard, Chicago, Ill., mentioning the Western Fruit-Grower when they write.

OUR BIG STATION RIGHT AT THE GATES!

"Follow the Flag"

WABASH TO ST. LOUIS

ONLY LINE TO

WORLD'S FAIR Main Entrance

ALL trains from the **West** connect with the **WABASH** at **Kansas City.**

Ask your Agents for tickets over the **WABASH.**

L. S. McCLELLAN,
Western Passenger Agent.

H. C. SHIELDS,
Traveling Passenger Agent.

903 Main Street,
KANSAS CITY, MO.

ILLINOIS CENTRAL — CENTRAL MISSISSIPPI VALLEY ROUTE — RAILROAD

Cheap Excursions VIA Illinois Central R.R.

Round Trip Rates from Omaha, Neb.

French Lick Springs, Ind., on sale July 22-25 ..... $20.75
Boston, Mass., on sale Aug. 11-13 ..... 33.10

Tickets to points below on sale daily until September 30th, return October 31st:

Montreal, P. Q.	$33.00	Cambridge Springs, Pa.	$27.15
Buffalo, N. Y.	27.15	St. Paul-Minneapolis, Minn.	12.50
Put-in-Bay, Ohio	22.00	Duluth-Superior	16.50
Chautauqua Lake Points, Pa.	27.15	Alexandria, Minn.	15.25
Chicago, Ill.	20.00	Walker, Minn. (Leach Lake)	17.10
Chicago, Ill. (via St. Louis one way)	22.80	Rice Lake, Wis.	15.00
Charlevoix, Mich.	24.25	Winnipeg, Man.	35.00
Windsor, Ontario	21.50	Waterville, Minn.	10.50
Quebec, P. Q.	38.85	Madison Lake, Minn.	10.50
Mackinac Island, Mich.	26.25	Spirit Lake, Ia. (Okoboji)	9.95
Toronto, Ont.	27.15	Waterloo, Ia.	11.85

Correspondingly low rates to many other points in Illinois, Michigan, Wisconsin, Minnesota, Ontario and New York State.

Attractive tours of the Great Lakes via rail to Chicago or Duluth and steamer.

Before planning your trip, call at city ticket office, No. 1402 Farnam St., Omaha, or write.

W. H. BRILL, Dist. Passenger Agent, OMAHA, NEBRASKA

Low Rates to the South

Are made on the first and third Tuesday of each month by the

SOUTHERN RAILWAY

At which times round trip tickets to points in the South and Southeast are sold at one fare plus $2.00.

A splendid opportunity is thus afforded the residents of the North and West to personally gain a knowledge of the great resources and possibilities of a section which is developing very rapidly and showing results which are most satisfactory.

Low Priced Lands, Superior Business Opportunities, unexcelled Locations for Factories can be obtained or are offered in all of the States reached by the Southern System.

Illustrated publications and full information upon request.

N. V. RICHARDS,
Land & Industrial Agent,
Washington, D. C.

CHAS. S. CHASE, Agent
Land and Industrial Dep't
Chemical Building,
St. Louis, Mo.

T. B. THACKSTON, Trav. Agent.
Land & Industrial Dept.
225 Dearborn St.,
Chicago, Ill.

Baby's rosy, fat and well,
Mama can the secret
tell—
Minnesota's summer breeze
Sun and lake and forest trees,
Boating, bathing, without measure,
Give each day the greatest pleasure.

CHICAGO GREAT WESTERN RAILWAY

Only $15 For the round trip to St. Paul and Minneapolis.

For complete information apply to

M. F. MONTGOMERY, C. T. & P. A.,
414 Felix St., St. Joseph, Mo.

The Fruit-Grower For 1095

For the season of 1904-1905, "Brother Jonathan" will offer inducements to both subscribers and advertisers which should be of interest, even at this early date. ¶ Below are a few suggestions for consideration.

To Subscribers

While arrangements have not been completed for all the good things in store for readers of The Fruit-Grower for 1905, we feel that we may safely state that the paper for next year will be better than ever before. A number of special articles will be prepared on topics of interest to all fruit-growers, the subjects of which will be announced later.

There will be at least four, and possibly six, special issues next year, with colored covers. The first will be "The Aniversary Number," in January; the February issue will be devoted to the subject of "Spraying;" "Gardening" will be given particular attion in March, and the April issue will be our "Small Fruits Number."

In a short time we shall have ready for distribution, a handsome sixteen-page booklet containing reduced fac similes of these cover pages in colors, and all members of "The Family" are invited to send in the names of a few of their neighbors, so that a copy of this booklet may be sent to each. Our "five for $1.00" proposition will hold good during 1905.

To Advertisers

The advertising rate in The Fruit-Grower will be advanced on Sept. 1st, to 20c per agate line, or $2.80 per inch. But, in a sense, this will **not** be an advance, either, for we will guarantee a circulation of 40,000 copies a month for the season of 1904-1905. So the rate **really** remains the same — "one-half cent a line per thousand circulation."

And the fact that The Fruit-Grower will be a better paper in every way should make it a better medium for advertisers. We accept business from none but strictly first-class, reliable firms, so you may rest assured that you will be in "good company," should you favor us with a portion of your appropriation.

There are no secrets in the circulation department of The Fruit-Grower. We furnish sworn statements, or will prove circulation in any manner you may suggest. On request, will send statement showing actual number of papers sent to each state in the Union. It is a real pleasure for us to answer questions of **any nature** in regard to circulation.

THE WORLD'S FAIR NUMBER WILL BE READY SEPTEMBER 1ST

This will be an "extra" edition for circulation in the Horticultural Building at the World's Fair, and a copy will also be sent to every one who writes for a sample copy of The Fruit-Grower from September 1st to March 1st, 1905. The first edition will be 50,000 copies, but no doubt 100,000 will be required. A limited amount of advertising space will be sold at regular rates. If you want information of any nature about "the best farm paper in America," write

THE FRUIT-GROWER CO., ST. JOSEPH, MO.

We Want to Print Your Nursery Catalogue

EVERY progressive Nurseryman has recognized the fact that to reach the trade in his particular line he must have an illustrated Catalogue of the varieties he handles. **The Fruit-Grower Printing Department** is in every way equipped to print Catalogues to the best advantage, and our experience in this kind of printing has shown just what is needed to make a neat, attractive piece of work. Being in close touch with Nurserymen all over the country enables us to know how to handle this kind of printing better than the average printing house who do not make a specialty of this class of work. Write us regarding your Catalogue, for estimates, and we will use our knowledge to help you in getting out your advertising in a way that will pull business.

THE BEST IS THE CHEAPEST

Send for our new Catalogue of cuts. Address

PRINTING DEPARTMENT

The Fruit-Grower Co., St. Joseph, Mo.

The Southwest Limited

Is the new electric-lighted train, Kansas City to Chicago. Its route is via the new short line of the

Chicago, Milwaukee & St. Paul Railway

By one Missouri editor it has been called "The Sure 'Nuf Hurry-Up Train between Kansas City and Chicago." It is electric lighted throughout and carries standard sleepers, dining cars, compartment-observation-library cars, chair cars and coaches. Leaves Kansas City (Union Station), 5:55 p. m.; Grand Avenue, 6:07 p. m. Arrives Chicago (Union Station), 8:55 a. m.

G. L. COBB,
Southwestern Passenger Agent,
907 Main St., Kansas City, Mo.

WESTERN

THE FRUIT-GROWER

ST. JOSEPH, MISSOURI

AN ILLUSTRATED MONTHLY MAGAZINE FOR PROGRESSIVE AMERICAN FARMERS

SUBSCRIPTION FIFTY CENTS PER YEAR THREE YEARS FOR ONE DOLLAR

VOLUME FIFTEEN AUGUST, 1904 NUMBER EIGHT

The "Sting" in the Apple

Prof. J. M. Stedman Tells How the Plum Curculio Injures the Apple Crop

The Missouri Experiment Station has issued Bulletin No. 64, entitled "The 'Sting' in the Apple," which will be of interest to all apple growers in Missouri, Illinois and other states where the stinging of apples has been noted. The bulletin is by Prof. J. M. Stedman, entomologist of the station, who says the injury is the work of the plum curculio. A part of the bulletin, together with several of the illustrations, is presented herewith.

The matter was first called to Prof. Stedman's attention during the latter part of the summer of 1900. Specimens were submitted of apples injured by some insect, which rendered the fruit unfit to be packed as a No. 1 grade. The injury has been found for the most part have been caused by the plum curculio in making both egg and feeding punctures. Figure 1 shows the plum curculio in three stages, and Figure 2 shows the adult beetle magnified five diameters.

The beetles begin to cause the "sting" on the apples about the middle of May, while the young apples are about the size of large cherries, and by the first of June become so numerous as to attract attention by the many punctures or "stings" they now make. The male beetles make only the feeding punctures in apples, while the female beetles make both feeding punctures and egg punctures. From our observations we estimate that during May the female makes from four to five times as many feeding punctures as egg punctures, and that as a result of the work of both male and female beetles we find about twelve times as many feeding punctures as egg punctures on the apples. In all cases these punctures, whether for purposes of feeding or for the depositing of eggs, are known as "stings" among the horticulturists. During June the females make almost as many egg punctures as feeding punctures.

In making the feeding punctures the beetle eats a small round hole through the skin by means of its mandibles or jaws, which are situated on the extreme end of its long beak or snout. This hole is about one-tenth of an inch in diameter. It then eats the pulp about one-tenth of an inch in depth, thus leaving a small cylindrical hole in the apple. As the apples are now small and growing rapidly, it frequently happens that, if fungoid and other diseases do not attack it at this point, the apples recover from this puncture, the tissues growing over it and leaving a scar only.

During July and August the beetles have the habit of also eating the pulp back under the skin as far as they can reach all around the hole. These feeding holes then become very conspicuous, since the undermined skin withers, shrinks and turns dark and the apple usually commences to rot at this place. As at this season apples are not able to outgrow these feeding punctures, they are absolutely ruined for storage purposes.

In making punctures for the purpose of depositing eggs, the females also

Fig. 1.—The Plum Curculio: a.—Adult; b.—Pupa; c.—Larva. Natural size. (Original.)

eat the tissues of the apple, and this is probably the reason why during the egg-laying season they do not make as many purely feeding punctures as they do earlier and later in the season. The female first eats a small hole through the bark and then eats the pulp back about one-sixteenth of an inch, thus making a small cylindrical hole, usually quite parallel to the skin. She then turns around and deposits an egg in this hole, which is just large enough to receive the egg nicely. Having accomplished this, she then eats the tissue while cutting a small crescent-shaped hole through the skin and into the pulp so as to partly surround and partly undermine the egg. By observing figure 3, you will notice at **a, b, c, d,** and **f,** the punctures distinctly, as they are here photographed enlarged two and a half diameters.

While the above description of "stings" for egg depositing purposes can be said to be the normal method for this plum curculio and to be peculiar to this species, we noted many variations from it; we found many egg cavities containing eggs where the beetle had neglected to cut the characteristic crescent, and we also found many crescents in which the egg had been deposited in the crescent instead of in a special pocket, no special pocket having been made.

As most of these egg punctures or "stings" are made during the rapidly growing season of the apple, if the eggs fail to hatch or the larvae die early in their life, then the apple may outgrow the "stings," provided fungoid and other diseases do not attack it at this point.

If an egg was not deposited or it failed to hatch, the young apple gradually outgrows the "sting," leaving only a scar in its stead, as is shown at **e,** in figure 3. If the "sting" be made while the apple is comparatively small, all traces of even the scar may disappear by the time the apple is full grown, but if the "sting" be made after the apple has attained some considerable size, then the scar remains.

A single apple may have from one to many feeding and egg or crescent punctures or "stings" and these may be distributed throughout the season, so that we have single apples covered more or less with scars, depressions and "stings." Such apples, even though not attacked in these places by fungoid or other diseases cannot be sold to be placed in cold storage.

But it must be borne in mind that these various "stings" open up the way for diseases to enter and cause the apples to rot or decay at such punctures and absolutely ruin them while yet on the trees. When "stung" apples are placed in storage they soon decay at the places punctured, and since the adult beetles begin to make the feeding punctures or "stings" by the middle of May while the apples are very small and continue to do so throughout the apple growing season, and since the egg punctures or "stings" are made in great numbers during the latter part of May and during all of June and the fore part of July, and also since the young beetles emerging along in August also make feeding punctures, thus resulting in the "sting" of the apples throughout the entire season, it is easy for one to see the serious nature of this trouble—the "sting"—caused by these plum curculio in our apples. It may be said here that for some reason, few of the eggs deposited in apples result in the appearance of adult insects. The eggs often do not hatch, or if they do hatch, the larvae usually die.

Life History of the Insects in the Apple.

There is only one breed of the plum curulio each year.

The adult beetles emerge for the most part during August, and feed for a time by puncturing the apples as described above. As this plum curculio beetle is so well known, we will not describe it, the figures being sufficient for our purpose. The young beetles may be seen in the latter part of the summer, feeding in connection with the old beetles. At the approach of fall the old beetles die and the young beetles fly about in search of suitable places in which to hibernate and pass the winter. They may fly a considerable distance, and are very fond of seeking the timber, or forests, where they crawl under leaves, and under stones, matted grass and rubbish of all kinds, and even enter the soil a short distance. They also hibernate in similar situations about the orchard or neighboring fields.

In the spring, as soon as settled warm weather appears, these hibernating beetles fly in search of food. Alighting in the apple orchard, they begin to feed a little on the young developing leaves and later on the petals of the apple flowers, and when the apples are as large as large cherries or hazelnuts begin to feed on them as before described, thus causing the "sting."

The egg. About the middle of May

Fig. 2.—The Plum Curculio; adult, magnified five diameters. (Drawing.)

the females begin to deposit their eggs by making the characteristic puncture or "sting" for this purpose, as heretofore described. The females continue this egg-laying until the middle of July, and may work during a part of the day and a part of the night, or all day if it be cloudy, but do not appear to enjoy egg-laying during the heat of the day. They frequently drop to the ground during the middle of the forenoon and hide until late in the afternoon, then fly up into the trees and begin work again. The eggs are large enough to be seen with the naked eye, and appear quite white and rather long oval in shape. The eggs hatch in from five to seven days according to the weather.

The larva, when full grown, is a footless, grublike creature about three-eighths of an inch in length, and of a white color with a brown head. A photograph of one is shown natural size at **c,** in figure 1. When first hatched the larvae eat their way straight into the pulp of the apple from a quarter to half an inch, and then begin to mine in a zigzag direction, often doubling up on their course, but as a rule finally reaching the core, where frequently they eat into the seeds. It seems necessary for the life and growth of these larvae that the apples fall to the ground by the time the larvae are about half grown, otherwise the larvae appear to die. If the apple drops, the larva continues to live and grow, and after becoming full grown, eats its way out and enters the ground. The entire larval stage in the apple lasts from eighteen to twenty-one days. When the larva leaves the apple it is full grown and feeds no more, but immediately burrows in the ground from one to two inches, wiggles its body so as to pack the earth

away and make a little cell, and there remains quiet from eight to fourteen days, then changes to the pupa stage.

In searching for the pupae in the orchards, I was surprised to find that the great bulk of the larvae there did not go much below one inch before they made their earthen cells and pupated, while in all my breeding cages the bulk of the larvae went deeper. I can account for this only on the supposition that they found the moist sand easier to enter.

The pupa stage is represented in the photograph, natural size, at **b**, figure 1. This stage of the insect is also an uncertain one in the life of the beetle, since the pupae are easily killed if disturbed too much by cultivating the soil while they are in it. The pupa stage lasts from fifteen to twenty days, then transforms to an adult beetle, which at first is light brown in color and quite soft, but gradually becomes darker and harder, and remains in its earthen cell about ten days before it digs its way out to the surface of the soil.

The adult beetle on emerging from the soil is lighter in color than the older beetles, but gains its normal color in a few days. It soon seeks its natural food and can be found in good numbers during the latter part of July and during August, feeding on the apples by making the punctures or "stings" already described. At the approach of fall, these young beetles seek hibernating quarters and thus pass the winter, while the old beetles that have not already died, perish.

It will thus be seen that many of the old beetles are still at work in the apples by the time the young beetles emerge and begin to puncture them also, but that there is but one brood of these insects each year. As the female beetles are quite slow in depositing their eggs, and vary somewhat in the time of beginning, we have some of them laying eggs in apples as late as the last of July or the first of August, at which time the young beetles are beginning to emerge in great numbers.

From what has been said one can see that from the time an egg is deposited in the apple until the time that egg should result in the production of an adult beetle, would require from fifty-six to seventy-two days, according to circumstances.

How It Can Be Controlled.

During the two years we were studying the habits and life history of the plum curculio in the apple, we were also experimenting in many orchards with various means and methods of killing and of controlling its ravages, and these experiments were carried on during the third season also.

As a result of the entire work we now know that it is perfectly possible, practicable and comparatively easy to successfully fight this pest in the apple orchard and to prevent its doing undue injury. In order to do this, we must take advantage of some weak points in the insect's economy which we have described.

The four principle habits we can take advantage of are: First, the fact that the adults hibernate during winter under rubbish and the like; second, that in the spring the adults feed to a certain extent on the developing leaves before the trees bloom; third, that the larvae, in order to live and reach their complete larval stage, must be in apples that drop to the ground before the larvae are much over half grown, otherwise they die; fourth, the fact that the full grown larvae leave the apples and enter the ground an inch or two, and there transform to pupae that are easily killed.

It is well known to horticulturists that an apple orchard near the forests suffers more from the "sting" than one out in the clear, and that the part nearest the forest is "stung" first. This is because of the fact that the plum curculio is found in certain wild fruits which grow abundantly in our forests, and also because the beetles seek the timber to a large extent during the fall for hibernating places, and seek the nearest food early in the summer. This should be taken into account in setting out an orchard, as there are many other injurious insects attacking orchards that come originally from forests. It is also well known that apple orchards near plum or peach orchards suffer more from the "sting" than those remote, and that the part nearest to a plum or peach orchard is sooner and more severely "stung," because this insect breeds most rapidly in the plum and peach. Hence it is well to have the plum and peach orchards as far as possible from the apple orchards.

In visiting the various apple orchards during our studies, we noticed that those orchards that receive thorough or slight cultivation suffered less from the "sting" than those that were allowed to grow up to grass and weeds, or orchards in the sod. This fact is easily accounted for by the removal of hibernating quarters and the destruction of the pupae.

Spraying. We carried on experiments in three different apple orchards to test the practibility of killing the beetles while they were feeding upon the developing leaves before the trees bloomed. For this purpose one-half of each orchard was sprayed twice from the time the leaves appeared until the blossoms opened, using arsenate of lead, while the other half of each orchard was left as a check. The arsenate of lead was made by dissolving eleven ounces of acetate of lead in a bucket of water and four ounces of arsenate of soda in another bucket of water, and when all was thoroughly dissolved the two were thoroughly mixed together in a tub and allowed to stand over night. The next day all this was stirred and added to a barrel of water, stirred again, and sprayed thoroughly by means of a fine spray on both sides of the trees.

While we found it practically impossible to determine the exact per cent of the beetles killed, yet it was very apparent that we had greatly lessened their numbers in the sprayed trees for the time being; but as these beetles fly readily, it soon became apparent that they were reinfesting the sprayed portion of the orchard when the apples were of the proper size, and hence the following year these same experiments were repeated, and the spraying also carried on for four sprayings after the blossoms had fallen, at intervals of ten days, as well as receiving two sprayings before the blossoms opened. As a result of this last experiment, it was apparent that we were preventing about sixty per cent of the apples from the "sting;" but here again the curculio reinfested the sprayed portion later in the season, but did not do the serious damage they did in the checks which were not sprayed. If one is going to spray for bitter rot, apple scab and other diseases before the blossoms open and for codling moth after the blossoms fall, the addition of an arsenical poison to the Bordeaux mixture, sprayed before the blossoms open, will also kill large numbers of the curculio, and the spraying with the arsenical poison after the blossoms fall will not only kill the codling moth, but will also greatly lessen the curculio "sting." If the entire orchard is thus treated, and it be not too near other infested orchards, especially plum and peach orchards, then the results of the arsenical spraying for the plum curculio in the apple orchard are very marked and profitable, and the great bulk of the "sting" will be prevented. As near as we could estimate from the second year experiments, we saved seventy-five per cent of the apples from injury by the "sting," and to this must be added the fact that we also held the codling moth in check.

Destruction of Wind-Falls. Other experiments were carried on in different orchards to test the result and practicability of destroying all windfalls, since it was found that the larvae will not live unless the apples fall, and as the larvae remain in the fallen apples for a week or so, it appeared to be a very vulnerable point. To this end the fallen apples were gathered by hand each week from one-half of two orchards, the other half in all cases being left as a check; while in two other orchards the fallen apples from one-half of each orchard were destroyed by keeping hogs in that part of the orchard, and allowing them to eat all such windfalls. In all cases, it was evident from the scarcity of young beetles and fresh feeding punctures in that part of the orchard where the wind-falls were destroyed, as compared with the other half, that this method had resulted in practically preventing the development of the curculio beetle; and this contrast would no doubt have been much greater, had it not been for the fact that probably the greater number of the young beetles found in the treated half of the orchard, came directly by flight from the untreated half. It was noticed by those present that the beetles and the fresh feeding

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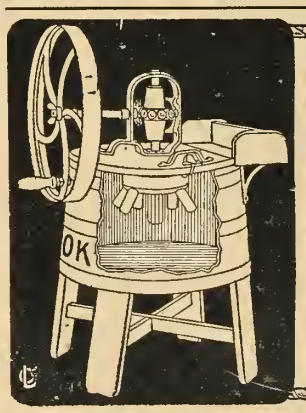

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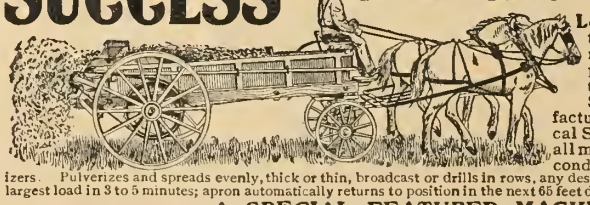

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punctures became scarcer the further we went from the untreated half.

Cultivation. With a view to the destruction of the pupae and recently transformed beetles in the soil, several experiments were conducted in still different orchards by shallow plowing and harrowing during the middle of July, and then harrowing the first and fifteenth of August. It was evident that as a result of this method of procedure, vast numbers of the insects were killed, but it was practically impossible to get at a satisfactory estimate of the exact per cent thus destroyed and the per cent not so destroyed. We tried to sift the earth in order to pick out the dead from the living pupae; but this was such laborious and slow process that we finally abandoned it and made our estimations by observing the young beetles and the freshly made feeding punctures in the cultivated and uncultivated halves of the orchard. We noted the fact that poultry were eager to roam over the freshly cultivated orchards, and feed and scratch about, and no doubt they destroyed many larvae, pupae and young beetles. If enough poultry could be kept in the orchard they would greatly lessen the number of curculio to ultimately reach the trees. It is well known that plum trees in a chicken run-way are not seriously attacked by the curculio.

All Three Methods Combined. During the first year of our experiments, we tested the three methods of combating the beetles independently; but during the two succeeding years we carried on several extensive experiments in six different orchards with a combination of all three methods. We selected large commercial orchards for this purpose, and used only one-fourth of each orchard as a check, in order not to have our treated portion so badly reinfested from the check trees, and also in order to have the check trees further away from the bulk of the treated portion.

In all cases, the method carried out was as follows: The trees were sprayed twice before the blossoms opened with arsenate of lead and four times after the blossoms fell with the same arsenical poison at intervals of ten days; when the apples began to fall hogs were turned into the orchards to pick them up, the check portion being fenced off; the middle of July the orchards were plowed very shallow and harrowed very thoroughly, and then harrowed again on the first and fifteenth of August.

The result of these experiments were very marked indeed, and demonstrated beyond a doubt that by following all three methods here used, one can hold the plum curculio in check in the apple orchards, as completely as we do any other injurious insect. Indeed, in our experiments we found very few apples "stung" in the treated orchards, and these stings were mostly confined to trees bordering on or near the check portions, while in the check trees, the "stings" were serious. No doubt most of the "stings" in the treated portion were the result of the beetles coming over from the check trees, and, on the other hand, no doubt the check trees were "stung" less than they should have been because some of the beetles left for other parts of the orchard.

Summary Of Results.

I. The "sting" in the apple is caused by the common plum curculio, which as an adult beetle makes minute holes through the skin for purpose of depositing eggs.

II. There is but one brood of these beetles each year, the new adults emerging in the late summer and hibernating over winter in sheltered places.

III. In the spring the beetles feed on the developing leaves and petals of the flowers, and later on the apple itself.

IV. The male beetles feed by puncturing apples throughout the season, while the female beetles not only do likewise but also puncture the apples for the purpose of laying eggs.

V. The number of "stings" which the beetles cause on the apples are far in excess of the productions of young, and a very small per cent only of the eggs deposited ever succeed in producing adult beetles—probably not more than two per cent.

VI. The apples containing young larvae must fall by the time the larvae are half grown otherwise they perish.

VII. The full grown larvae leave the fallen apples and enter the soil an inch or two and there transform to delicate pupae which remain in this stage for two weeks or longer.

VIII. The young beetles emerge from the soil in the late summer and feed by puncturing or "stinging" the apple, and later seek winter hibernating quarters.

IX. There are three methods of procedure we can follow, each one of which will greatly lessen the insects and therefore the "sting," but all three of which should be used. They are:

X. Spray the trees once or twice with arsenate of lead before the blossoms open, and then after the blossoms fall, spray every ten days for three or four sprayings. Destroy once every seven days all apples that drop to the ground. Plow the orchard very shallow and harrow it very thoroughly the middle of July, and harrow it again thoroughly the first of August and again the middle of August.

XI. By following all the above three methods the plum curculio can be completely controlled in the apple orchard and damage from the "sting" prevented.

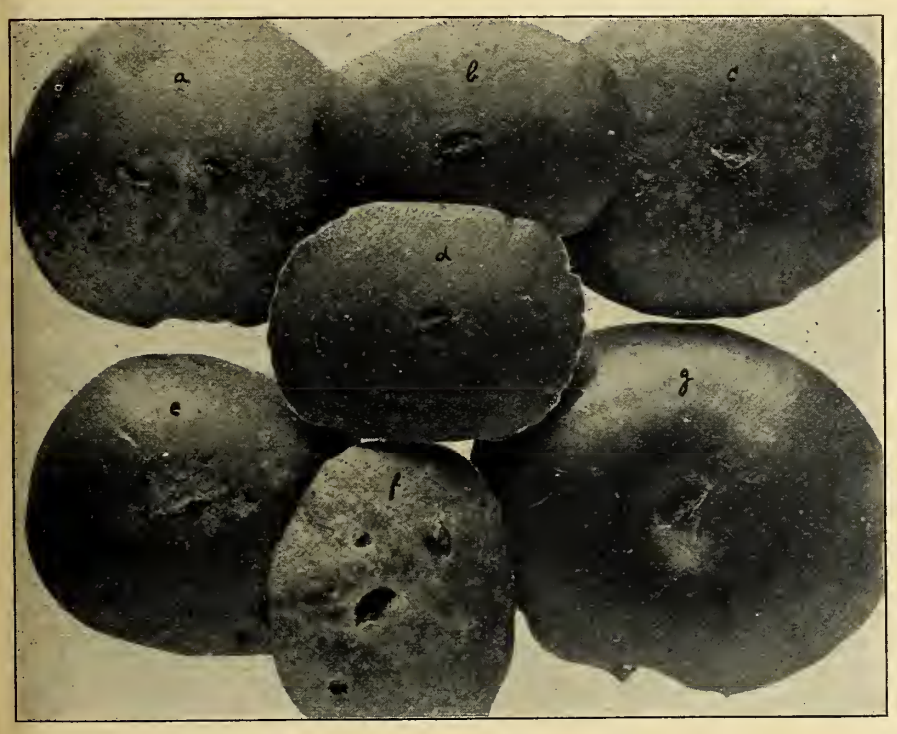

Fig. 3.—Portions of apples showing "stings" and scars; a.—egg punctures with larvae living in the pulp and the punctures beginning to decay; b, c, d.—egg punctures beginning to heal as the eggs never hatched; f.—badly "stung" portion of an apple, showing two punctures healing and two starting to decay; e.—egg puncture nearly healed; g.—scar in a depression as a result of the recovery and healiug of an egg puncture where the larva had mined a distance in the pulp and then died. Magnified two and one-half diameters. (Original.)

Gas Tar as a Protection from Rabbits.

I noticed in the February number of your paper, an article on a test of different poisons, paints, etc., to kill and stop the growth of galls and knots on fruit trees; that where gas tar was used all the trees died. Now, this very much excited me, as I had set out 3,000 trees last spring and last fall I painted them with gas tar to keep the rabbits from barking them during the winter, and I feared I would lose all of them if that small place painted to kill the galls had killed them. I saw an article during the summer where some one recommended it, and thought it just the thing as it would be cheap and quickly done. But up to now the trees are leafing out and are as thrifty looking as can be and I believe it will not hurt them. The rabbits were plentiful, but not a tree touched, so I believe it a good thing after all, and think those trees tested must have died from some other cause. A. MAXWELL.

Orange, Va.

There have been many instances, however, where gas tar has injured trees, and its use is not advisable. Some persons use axle grease on trees to keep away rabbits, and do not injure the trees, while other persons have killed their trees in this way.—Editor.

American Breeders' Association.

The general chairman of the membership committee of the American Breeders' Association, Mr. Eugene D. Funk, Bloomington, Illinois, is progressing with his campaign for a large membership for that new organization. The state chairman in the various states, and other state committee men, are inviting thousands of animal breeders, plant breeders, scientists interested in heredity and evolution, and others who are interested in plant and animal improvement to become members. The secretary, Prof. W. M. Hays, St. Anthony Park, Minnesota, to whom all remittances are made, reports daily responses in the way of remittances for membership. Some have expressed the belief that the annual membership at $1.00 is too low. A number of life memberships $20.00 have been received, among them one from Philip de Vilmorin, head of the great seed house of Paris, France, and another from the Zoological Laboratory, Naples, Italy. A number of annual foreign memberships at $2.00 have also been received.

Animal breeders especially commend the proposed scheme of a directory of breeders, showing classes of live stock and plants for sale by breeders, and showing specialties of scientists interested in breeding. Physicians and teachers are taking an interest in this association, that they may know more about the general subject of heredity.

There is a wide range of interests represented by those who join this new association. Not only is the number of breeders of different kinds of animals in America increasing, but the field crops and many of the horticultural crops are being taken up by breeders who are improving them by systematic breeding. The work of the experiment stations and the U. S. Department of Agriculture is especially effective in reducing breeding to more of a science.

Fruit Section in Tennessee.

A. E. Payne, Crossville, Tenn., writes: "I wish we could get some enterprising people interested in this part of the country. The plateau of Cumberland County, Tenn., has an altitude of 1,800 feet and we can grow fruit to perfection; also corn and potatoes. Our summers are delightful and the winters are not cold. We can plow all winter; have no cyclones, no floods, no great storms of any kind, and have less wind than any place I know of; no mosquitoes, because we have the best natural drainage; we have the best freestone water, and an abundance of free range for stock. Land is cheap, $3 to $10 per acre, in the midst of the best markets, and no one growing a pound of fruit for market."

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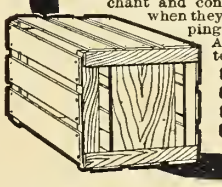

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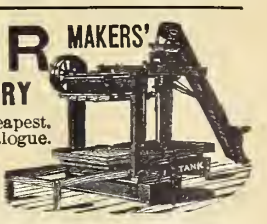

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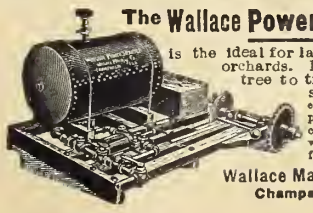

is the ideal for large or small orchards. Driving from tree to tree furnishes sufficient power. Compressed air pressure, always constant. Fits any wagon gear. Ask for booklet A.

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Gardening Department

A Good Early String Bean.

I got samples this year from several sources of a green pod string bean that seems to be a good thing. My record shows that the samples were sent in by J. B. Stevens, Doniphan, Mo.; N. J. McCall, Eagleville, Mo., and Mrs. Henry Shetley, Carlton, Mo. The beans were exactly the same from all three sources, so I judge that this variety must be pretty well scattered over the state, but I have never seen it listed in any of the catalogs.

The bean itself is of a rather dark brown color, about the size and shape of the old Black Wax or possibly a little bigger. The pods are long and flat, very tender and very early. They are fully as stringless as the Stringless Greenpod and several days earlier. The pods are generally about 6 to 7 inches long and are borne in clusters well up above the leaves. This is a curiosity that I have never noticed in any other bean. The pods will often show their entire length above the leaves, and I consider this a good point as the rust is not apt to affect them so bad. The main point about them, however, is their earliness. They were ahead of any other bean on the place, either green or wax pod. They also seem to be affected less by dry weather and by rust than any of the others. Now, it may be that this sort is already listed in the catalogs, but I am pretty well posted on beans and I have never struck anything similar to it. If any of you have grown it under some trade name I would be pleased to hear from you.

The Crimson Giant Radish.

Many of my friends have written me asking more about this great new radish. I can only repeat what I said before, that I consider it the greatest improvement in radishes in the last ten years. There is sure to be an enormous demand for it as soon as it is generally known and there is danger that lots of common Eary Scarlet Globe will be palmed off in place of it at a high price. Be sure that you get straight seed of it. There is none of it being grown for seed in this country this year that I know of and the seed supply will have to come from Germany and France. I have already engaged a supply in Germany, but will have to pay like sin for it.

Forcign Beans.

I have been much interested this year in trials of foreign varieties of beans. In England the climate is too cool for any of our varieties of beans to do well, so they grow an entirely different species that are early and hardy enough to do well there. They are commonly known as "Horse Beans," but they look to me to be closer kin to peas than to beans. The beans are very large and look some like a very large coarse lima bean. The bush is upright, about two feet high, with light colored smooth leaves like pea leaves. The pods are about 4 inches long, sticking straight up instead of hanging down as our beans do, and contain generally three enormous beans. They are shelled and cooked like any shell beans, but they seem tough and strong and are not to be compared in quality to our beans. I suppose, though, that if we could not grow better ones we would be very fond of them. Our summer is too hot for them to be a success here as to yield, but I think that in places where the summer is cool and moist they might be of considerable value.

I have several varieties of German pole beans. Among others the July Runner, and the Earliest of All. Both compare very favorably with our pole beans both in earliness and quality, but they cannot stand our hot summer. Both began bearing before any of the American varieties, and in fact as early as any of our bush sorts. Since the dry, hot weather of the last two weeks, however, many of the pole beans have dropped out and only the hardy Western sorts are still green and bearing. The Missouri Wonder and the Kentucky Wonder are as bright and green and full of pods as ever.

The Cuban Asparagus Bean is simply a Southern cow pea with extra long pods. It is earlier than any of the cow peas that I have tried and has pods over two feet long. It is a great curiosity and attracts lots of attention, but I doubt if it has any great practical value. Like all the cow peas it is rather strong flavored and not very acceptable to Northern palates. The Chinese beans are also known as Soy or Soja beans and are being widely grown in this country for fodder and soiling purposes. It is not generally known that in a large part of China they are almost the "staff of life," but such is the case. The beans are very rich and of a strong flavor and have never been a success as a table delicacy here, but the Chinese eat them the year around. I have several varieties of them this year and they are making an enormous growth. The Early Black is the earliest and seems to make the most beans, but the Large Green makes the most fodder.

Foreign Cucumbers.

I am trying this year several of the best of the foreign sorts of cucumbers and I find it very interesting. The English and Germans grow them mostly in greenhouses and they have taken pains to develop the varieties far beyond anything that has been done in this country. I have one variety from England called the Swan-neck, that is the finest cucumber I ever saw. It is fully two feet long, smooth and green, and solid nearly all the way through. They are fine eating and I made a gallon of pickles out of three of them.

I also have several German sorts that are very fine, notably one that is pure white from start to finish. It seems to me that it would be worth while for American gardeners to make further trials with these foreign cucumbers, for I believe the Germans and English are ahead of us on them.

Peanuts In the Corn Belt.

That may seem odd, but it is a fact that peanuts can be grown here with excellent results. I have grown them in a small experimental way for several seasons and have never failed to make a crop with them. The early or Spanish variety is now (August 8), loaded with pods about half grown. By fall the ground will be full of them. Many have asked me if it is necessary to cover the blossoms. No, it is not. I simply keep the ground well stirred around them and the pods root down of their own accord. There will often be over a quart around one small bush. The large, late variety does not do so well here as it takes a longer season. It seems to me that on thin, sandy soils in Iowa, Kansas or Missouri, peanuts might be made a paying money crop.

Cucumbers on Trellises.

I tried several rows of my cucumbers on trellises in the foreign fashion. I simply took some four-feet chicken netting and stretched along the row and headed the vines toward it. It is surprising how quick the vines will "catch on." They go up the fence like gourds. This was true of the native sorts as well as the foreigners. The cucumbers hung all over the fence, smooth and straight, and it makes not only a beautiful sight, but it seems to me it is a profitable way to handle them.

It is not too late yet for you to try it. Take some old chicken netting, or anything that the vines can hang to, and set it alongside of the row. Start the vines up alongside of it and you will have some of the finest cucumbers you ever saw. As they do not touch the ground, the skin is perfect all over them and they will keep lots longer. I had one grown this way last year that kept for several weeks after it was picked and brought into the house.

Tomatoes on Stakes.

You remember I spoke last month of staking up the tomatoes. They are doing finely and some of them are higher than my head now. One big vine of Ponderosa has fully a peck of

The Royal Fruit Picker

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Is adapted to picking apples, peaches, pears and the smaller fruits. It is an ABSOLUTE SUCCESS and is the only Picker that picks with satisfaction. The elastic steel fingers close like the human hand by pulling a cord that runs through eyelets at the top, and open when the cord is relaxed. You stand on the ground and pick the fruits from the top of the tree. The Picker holds a dozen or more apples, peaches, or pears, thus saving time in emptying. The screen is no longer used, as it has demonstrated that the fruit is not bruised without it.

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We have all the standard commercal varieties in June Buds, also have a complete assortment of 1-year Peach, Pear and Cherry and 2-year Apple. Write for catalogue and prices.

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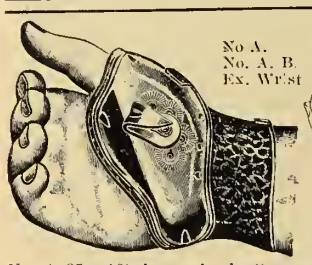
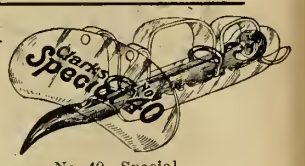


No A. No. A. B. Ex. Wrist

No. 25



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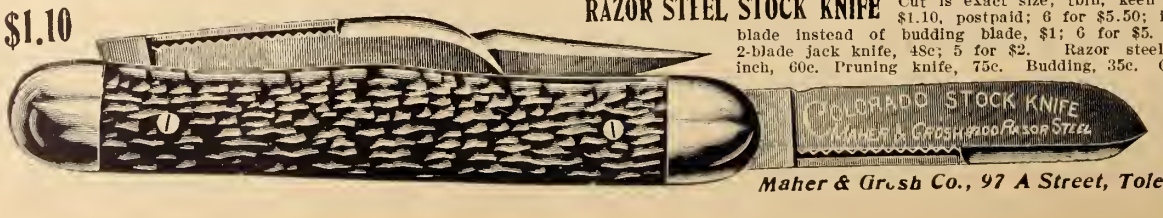

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big, green tomatoes on it, with a couple of them beginning to ripen. I am unable to say for sure, but it looks to me like these vines tied up to stakes bear more tomatoes than the vines on the ground, and the tomatoes are certainly smoother and sounder. Many of the vines will be ten feet high by frost and will be loaded with tomatoes all the way up.

The Fodder Crops.

Gardeners are all interested in fodder crops, as we all have a few horses to feed and few of us have any meadow. I have always made it a practice to sow cane, kaffir, pencillaria or millet as a catch crop on vacant pieces of land so as to have plenty of winter horse feed, and this year I have made rather extensive trials along that line. All the varieties were sown May 20. At this writing (August 8), the pencillaria makes the best show of any. It stands now about ten feet high and still growing. It should, however, have been cut when it was three or four feet high and then it would have made several cuttings during the summer. I let it go to see how tall it would grow.. It is a giant for sure and makes an endless amount of fodder.

The sorghum is next in growth and is about eight feet high. Like the pencillaria it stands up well and will make lots of feed. Kaffir has made plenty of leaves, but is not so tall; in fact, not over five or six feet. Teosinte is not of any value evidently. German millet is five feet high and heading out nicely. Siberian millet is fully three weeks earlier and is already ripened and cut. Soja beans are about three feet high and full of pods. The cow peas are all over the ground in a tangle. As you walk through them they seem to be a tangle of vines piled on top of each other over knee deep, with pods sticking up everywhere. I have four of the earliest varieties, and all will ripen plenty of seed.

A Good Year for Potatoes.

This has been a great year for early potatoes in the corn belt, or at least in this part of it. It tried some of the White Ohio the other day and ten hills made a bushel. You can figure out for yourself what the yield will be.

HENRY FIELD.

Shenandoah, Iowa.

Nebraska Horticultural Meeting.

The summer meeting of the Nebraska State Horticultural Society was held in Aurora, July 28 and 29. A feature of the meeting was the exhibit of peaches, showing there will be a good crop of this fruit in Nebraska. A creditable exhibit of flowers was also made by Mr. C. S. Harrison and others.

One of the first subjects discussed was cherry culture. Mr. Frank Harris of Aurora told of his method of culture. This gentleman gathered seven bushels and eighteen quarts of Montmorency cherries from one tree this season; from twenty trees he gathered seventy-two bushels of fruit and sold it for $1.50 per bushel. Each autumn Mr. Harris mulches the the ground about his trees with stable manure, spading this under in spring. During the discussion the fact was brought out that both Montmorency and English Morello cherries may be left on the trees for from two to three weeks after the fruit turns red, thus allowing the earlier fruit to be entirely sold from market before marketing the later varieties.

Peter Youngers told of his recent trip through the Georgia peach orchards with the Nurserymen's Association, but made the prediction that with the same energy, capital and applied skill peach culture can be made more profitable in Nebraska than in Georgia.

"Apple Scab and Cedar Rust" was the title of a good paper by Prof. R. A. Emerson of the University of Nebraska. This talk was illustrated by piles of apples from sprayed and from unsprayed trees. The branches from sprayed trees were heavily laden, while those from unsprayed trees carned but little fruit. Owing to the ravages of the scab, during the recent wet years, most orchardists have found it difficult to grow satisfactory crops of the Winesap. The Rawle's Janet has also been troubled very seriously with the apple scab. Professor Emerson's carefully conducted experiments lead to the hope that this can be controlled by spraying with the usual Bordeaux solution; spraying the first time just before the tree is ready to bloom, the second time about ten days after bloom has fallen; spraying with this solution, in connection with arsenical spraying, for the codling moth. Professor Emerson also had samples of the cedar rust, cedar balls, showing how it lived one season of its two-fold period of growth, on the apple; alternating between the apple and cedar tree.

Mr. G. A. Marshall discussed the growing of fruits for home use by the farmers of Nebraska, and told how the small fruits can be grown in the young orchard, until trees are too large. In a list of varieties for the home orchard Mr. Marshall urged planters to consider this list: Yellow Transparent, Duchess, Wealthy, Utter, Ben Davis, Gano, Jonathan, Grimes' Golden and Northwestern Greening.

E. F. Stephens discussed "Commercial Orcharding in Central and Western Nebraska." This section of the state has been coming to the front of late years. Mr. Stephens enumerated some of the causes of failure in growing orchards in this section as follows: Unsuitable varieties, and, under irrigation, the application of too much water, causing a late, unripe growth.

In discussing the question of gardening the fact was brought out that Northern potatoes should be used in planting, Northern seed having given 40 to 60 bushels more potatoes per acre than home-grown seed.

President Christy talked on strawberry growing for home use and for market. He urged early planting in spring, followed by good cultivation. He grows his berries in the narrow row.

Mr. L. M. Russell, the secretary, and the leading peach grower in the state, was called on to outline their methods of work. Twenty-four years ago Mr. J. H. Russell commenced planting peach trees in Southern Gage County. Their first planting comprised some 2,000 trees, and 45 varieties chosen from Illinois lists. The major portion of those proved unsuitable to Nebraska conditions. Their peach orchard commenced bearing seventeen years ago. Until last season they have had a crop every other year. They usually begin shipping about the middle of July. The season lasts until the first of October. From among a number of varieties of early peaches, which were much alike, they had selected the Alexander, as one most suited to their location. This was followed by the Early Rivers; after this Hale's Early and Triumph. The Triumph is the first of the yellow-fleshed peaches to ripen, and seems to be one of the hardier varieties. They also plant Cooledge Favorite. About fifteen years ago they developed a chance seedling, believed to be a cross between the Alexander and Hill's Chilli. This variety had grown in favor with them. They have planted some 6,000 trees of this variety, in their Lincoln orchards. It has proven a hardy, productive and valuable variety. In 1893 at Chicago, this peach stood second in quality, in competition among all the peaches there exhibited. This variety is followed by Champion, Wager, Hill's Chilli, Wright and Salway. They also grow a few of the Heath Cling. They expect to ship this season, from 8,000 to 10,000 bushels of peaches.

Mr. C. H. Green, a florist of Fremont, in his discussion of the topic, "Roses," assigned to him, gave a history of the rose, outlined methods of culture, and enumerated a brief list of desirable varieties. He regarded the Crimson Rambler, and the Prairie Queen as two of the most reliable climbers, favored the free use of General Jaqueminot, Magna Charta, Paul Neyron, Coquette des Alps, Madame Plantier and other hardy varieties.

Crete, Neb. E. F. STEPHENS.

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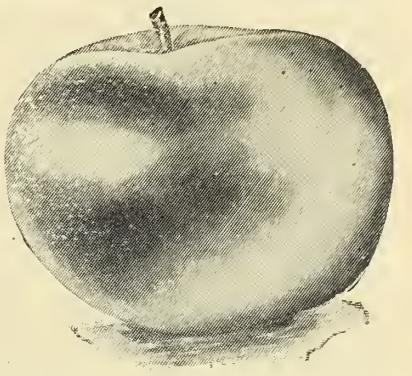

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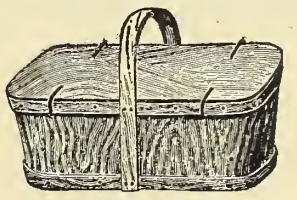

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Offer a first-class assortment of nursery stock at reasonable prices. Specially low price on fine two and three-year-old Apple Trees. Can ship on short notice by the hundred or in car lots. Certificate of inspection sent with every shipment.
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Is where you can get the best stock for the least money. We can give you the best stock in nursery-grown and forest collected Trees, Shrubs, Vines, Seedlings, etc. Ask for price list. New Market Nurseries, Taylor Perry, Jr., Prop., New Market, Ala.

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Loosens rubber from jar and cap unscrews easily, no breakage. Postpaid 25cts. Agents wanted. Rhodes Mfg. Co., Grand Rapids, Mich.

Thinning Fruit.

The Connecticut and New York Experiment Stations have done some work along this line, which is interesting at this time. The Connecticut Station has the following to say concerning the practice:

"In thinning fruit, one or more of four benefits may be expected to result: (1) Maintaining the vigor of the tree; (2) producing fruit of maximum size, appearance and quality; (3) securing annual crops instead of alternate; (4) preventing the spread of parasitic diseases.

"Vigor and thrift of the tree is one of the first essentials in producing and maintaining a good orchard. To obtain this end everything must be avoided that will tend to retard the natural, regular growth. When a tree is developing a heavy crop of fruit, it makes very little, if any, growth of wood, and seldom produces fruit buds for the following year. These facts are indications that the vital energy of the tree has been overtaxed, and one or two years are required to get back the normal vigor of the tree. Not infrequently trees die from the effects of overbearing. At best the

exhaustion caused by overbearing leaves the tree in poor condition to withstand the attacks of hard winters and insect enemies and fungous diseases.

"Overbearing is often a source of trouble with young trees. There is a well-known rule among stock breeders that no animal should be allowed to produce young until it has reached a certain age of maturity. This law is applicable to plants as well as to animals. Some varieties have a tendency to bear very young. Abundance plums bear while in the nursery row, and are in consequence short lived. Trees with this habit should be thinned very severely at first, and the amount of fruit increased gradually from year to year until the tree is developed.

"Thinning fruit to increase its size and improve its appearance has been carried on to a limited extent for a long time. This work has mostly been done to produce fruit for show purposes or for a fancy trade. It is generally understood that while thinning does increase size and improve the appearance and quality, the expense of having the work done is so great that it cannot be made to pay with ordinary fruits that are to be sold in the open market. A well known writer on the subject, from whom we quote, expresses the prevailing opinion when he says, 'It will not pay to thin all classes of fruit. Only early or fancy varieties of apples will reward the cultivator for the expense and labor of thinning.'

"It is true that all varieties of fruit do not respond to thinning alike. Lombard and Japanese varieties of plums respond quickly to thinning, the results being a large increase in size and improvement in quality, while the Damson type of plums does not show any very marked difference in size and quality between the thinned and the unthinned ones. As to the advisability of thinning standard varieties of apples which are to be sold in the open market, some experiments carried on by Prof. A. G. Gulley in the orchards of the Connecticut Agricultural College will throw some light on the subject.

"Five medium-sized Baldwin trees in a good state of thrift and with as near the same condition as possible were selected. No. 1 in the table had no check, Nos. 2 and 3 were practically the same size, as were also Nos. 4 and 5. Nos. 1, 2 and 4 were thinned, leaving Nos. 3 and 5 as checks. The thinning was done July 15, at which time it took twenty apples to make a quart. The early dropping was over, so there was no danger of leaving too few apples on the trees. On No. 1, according to estimate, one-third were taken off; on No. 2, one-fourth; while on No. 4 the thinning was mostly done on heavy-laden lines. These trees had been previously sprayed for apple scab and codling moth, so that the subsequent dropping caused by these troubles was light; but Nos. 3 and 5 dropped the most.

"The apples when picked were graded by the rules of the Apple Buyers' Association, i. e., first grade, 2 1-2 inches or over in diameter; second grade, 2 to 2-1-2 inches. It should be noticed that while all the apples were under-sized, or only fair-sized, the firsts in Nos. 3 and 5 required more apples to the barrel than did the thinned fruits. Especially is this true of No. 3, where 570 were required to the barrel, as against 536 of No. 2. Had the thinning been carried further on Nos. 2 and 4, it is probable that larger apples would have resulted.

"The usual objection to thinning—that it takes too much time—is hardly worth considering when we figure the difference in value between the product of the thinned and the unthinned trees. The cost of thinning No. 4 was 22 1-2 cents, and the difference in value between the product of the two trees was $1, a gain for the thinned tree of 77 1-2 cents. On No. 2 the cost of thinning was 35 cents, and the difference in value between the product of this tree and that of No. 3 was $2.18, a difference of $1.83 in favor of the thinned tree.

"Another important point should not be lost sight of. Dividing the fruit into grades is an operation which takes considerable time, especially when most of the apples are close to the dividing line. No record was made of the time required to sort the fruit of the thinned and the unthinned trees, yet it was a noticeable fact that much more time was required to grade apples from the unthinned trees, owing to the larger per cent of apples that were a little too small to go as first grade. It was thought that the time saved in grading the thinned fruit would about make up for the time spent in thinning.

No. of Tree	Total No. of Apples.	Number Thinned.	Number No. 1.	Number No. 2.	Number in Bbls. No. 1.	Number in Bbls. No. 2.	Value of Fruit on Each Tree.	Value Each Barrel.	Time Used in Thinning—Hours.
1	4075	1260	2440	375	529	725	$6.25	$1.19	2
2	6270	1450	3615	1205	536	755	9.80	1.15	2 1-3
3	5605	....	1710	3895	570	755	7.62	.93 1-3	....
4	4900	925	2825	1150	530	710	8.00	1.13 1-2	1 1-2
5	4160	....	2190	1970	547	750	7.00	1.05	....

Thinning to Produce Annual Bearers.

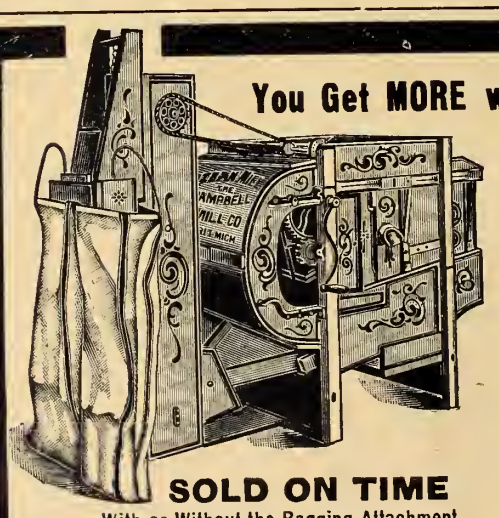
"The tendency to produce a crop of fruit on alternate years has become so fixed with some varieties that they are known as alternate bearers. Whether this is a natural or acquired characteristic is an open question. We have no proof that such varieties as Baldwin or Northern Spy would not have been annual bearers had a judicious system of thinning been followed from the origin of these varieties. It is not probable that at this time any amount of thinning could change the habit of these old varieties to any great extent, but with such varieties as Wealthy, Duchess, or any of the other new, heavy-bearing varieties, there is every reason to think that by rigid and successive thinning, year after year, they could be induced to bear as readily one year as another.

Thinning to Prevent the Spread of Parasitic Diseases.

"When brown rot (Monilia fructigenum) is working on green or ripening fruits, the rot starts on the side that is most protected from the sun and wind, or in other words where there is the most moisture. The rot is spread by spores that are borne by the wind to places of lodgment in some crevice between fruits, or between a fruit and a bunch of leaves or other protection where enough moisture is present to start the spore into growth, somewhat as a seed is germinated. After the rot once started, it will spread from fruit to fruit until all the fruit on the tree has been destroyed, if, as is the case frequently with plums, the fruits are close enough to touch one another. Large fruits should not be allowed to grow in bunches, as the chances are much better for one single fruit to escape the ravages of brown rot than for two or more than are in contact. The same is true of apples. While there is less danger that brown rot will affect apples, the codling moth is afforded a protection from sprays in a cluster of apples and can work with little danger of being troubled by poisons or by his bird enemies.

How to Thin.

"No fast rule can be laid down for thinning all fruits. There is very little danger of thinning too much, the tendency usually being not to thin enough. Peaches should be thinned until the individual fruits are six to eight inches apart. Plums should not be left close enough so that they will touch one another when full grown. A good rule is to leave them so that the space between them will be three times the diameter of the fruits at maturity, Thinning apples is somewhat more difficult than thinning the other frults, yet when the operator has become familiar with the work it can be carried on much more rapidly than would be supposed. Some mechanical devices for thinning fruit have been tried, but they have not been



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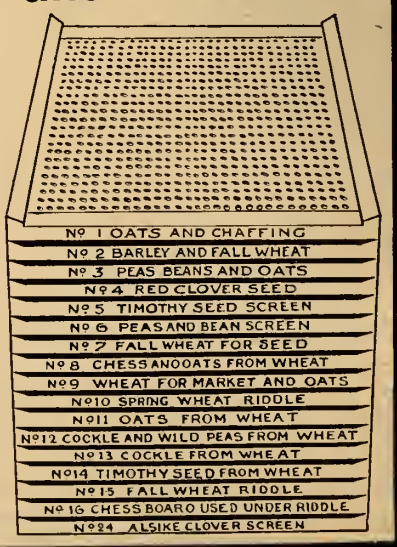

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successful, because of the difficulty of discriminating between the good and the inferior fruits. The best method is to hand-pick the fruits that are not wanted on the trees. A good plan is to remove all discarded fruits from the orchard, either burning or burying it, as these fruits contain many partly developed codling moth larvae, curculio and other insects. Discarded plums and peaches, if left under the trees, furnish a medium for the development of rots.

When to Thin.

"In general, the earlier thinning is done the better. The ideal time to thin is when the trees are in blossom, but unfortunately this is impossible, as at that time we have no method of telling from the number of blossoms how much fruit is going to develop. The time differs somewhat with different species of fruit. Usually it is not wise to thin until after the earlier periods of falling are past, which is from the middle of June to the middle of July. The general care of the trees has much to do with the falling of fruit, fewer fruits falling from trees that are well sprayed and cared for than from neglected trees."

In the experiments at the Geneva (N. Y.) station results were very much the same as in Connecticut. Where trees were well filled with fruit thinning generally improved the color. Where fruit set sparsely, thinning had no appreciable influence. Size was increased by thinning, especially where trees bore well.

The intrinsic value of the apples from the consumer's standpoint was generally increased by thinning, the thinned fruit being usually superior in size, color and general quality. The thinned fruit, as a rule, was better adapted than the unthinned for making fancy grades, for marketing in boxes, etc. Where such ways of marketing can be advantageously used, the thinned fruit should bring an increase in price corresponding to its superiority in real value. But where it must be put upon the ordinary market in barrels there is less chance for the thinned fruit to sell at sufficient advance over the unthinned to pay for thinning, especially if the thinned fruit cannot be furnished in large quantities.

No effect upon the regularity of bearing was apparent from the thinning. The best time to thin was thought to be within three or four weeks after the fruit sets, even if the June drop has not been ended. Cost of thinning, acording to the New York bulletin, should not exceed 50 cents a tree, and would probably average less than that. Thinned apples can be graded more rapidly than an equal quantity of unthinned apples. And the thinned fruit can be handled more economically than unthinned, because they have proportionately less of those grades which form the least profitable part of the crop, the 2's.

Does it pay to thin apples? This question was asked Mr. T. B. Wilson, of New York, in whose orchards the experiments of the New York station were conducted, and his reply, in effect, was that where there is a general crop of apples, the set full, the chance for small apples great and wide-spread it would pay to thin enough to insure good-sized fruit; otherwise not, except to protect the tree.

Cold Storage For Farmers.

One of the developments of the apple-growing industry during the last few years has been an increase of interest in the subject of farmers preparing their own storage. There are several arguments advanced in favor of this arrangement; 1—It is less expensive: 2—Storage can be provided near the orchard. This latter is a most important item, for the experiments of Prof. Powell of the United States Department of Agriculture, and those of other persons, have demonstrated that fruit should be placed in storage as soon as possible after being removed from the tree. Where fruit must be hauled a long distance to reach storage, of course this is impossible, and for that reason many farmers are considering the matter of arranging their own storage plants, on their farms.

The Illinois Experiment Station has conducted some experiments with the construction and use of cold storage houses on farms, the houses being cooled with ice. Plans are given in a bulletin issued by this station for the construction of a storage house for farmers, and report made of the fruit stored in a building erected according to these plans. On October 5, 2,000 barrels of apples were placed in the storage house and seventy tons of ice were placed in the refrigerator. The temperature of the storage room fell rapidly after the ice was put in to about 33 degrees Fahrenrelt, and this temperature, or a little lower, maintained throughout the experiment. The cost of storage per barrel of fruit up to April 23 (about seven months) was 19.1 cents, or 30.9 cents less than the usual charge for apple storage. Based upon these results, it is estimated that the building, if stored to its full capacity each year, would pay for itself in five years.

The fruit in the building was examined from time to time during storage. Without exception the fruit kept well. "There was no scald, no withering. The fruit remained plump and in perfect condition, and the percentage of rotten fruits was very small." The results are believed to plainly show the utility of buildings of this character cooled by ice. "Commercial growers of apples can well afford to invest in similar houses and thus add greatly to their profits." The experiences in cellar storage in Southern Illinois show pretty clearly that horticulturists cannot afford to insulate a cellar for storing fruit. The earth is too good a conductor of both heat and cold. Fruit stored in these cellars was more or less wilted and the percentage of rot was quite high.

Experiments were made with Ben Davis and Winesap apples in storing at temperature of 31, 33, 35, and 37 degrees Fahrenheit. The Ben Davis variety kept better and scalded less at 31 degrees Fahrenheit than at any other temperature. The difference was not so striking with the Winesap variety, but was in favor of the lower temperature. Another problem investigated was the degree of maturity most suitable for picking apples to be held in cold storage. The results obtained indicate a greater superiority in the keeping qualities of mature over immature fruit. The mature fruit in storage showed a much smaller percentage of rot, was less subject to scald, did not shrink as much, had better color and better selling qualities when removed from storage.

Salt Cure For The Blight.

Mr. John Shank, Mt. Sterling, Ill., writes that now that Major Holsinger has opened up the subject of using salt as a cure for pear blight, he wants to tell of the experince of a neighbor. Mr. Shank says a neighbor has been using salt about Kleffer pear trees since the tree began bearing, and it has borne yearly crops. Blight has been very bad during this time, adds Mr. Shank, for he himself has lost two plantings of pear trees. "Having observed this salt cure for four years, I am going to give the next lot of trees, this treatment. It is so cheap and so simple, that even if it is ineffectual the loss is but slight. I shall commence this fall and sow a pint of salt about the trees, making this application about the first of September. Next spring, about April 1, I will make another application. I am much interested in this method, but will admit I have been skeptical and even yet am not sure that the salt in the case referred to has saved the tree. Twenty years ago I, like Major Holsinger, thought I knew all about the cause of pear blight, but I am becoming convinced there are many things none of us know about the disease."

Albert Reis, Ithaca, Wis., reports that Early Richmond cherries were badly frozen and English Morello nearly all killed by a temperature of 30 degrees below zero last winter. Lombard and other European plums had all buds killed, but Japanese plums carried almost every bud through the winter in perfect condition. And yet Japanese plums are not supposed to be entirely hardy.

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Volume 15. ST. JOSEPH, MO. AUGUST 15, 1904 Number 8.

Eastern Edition of The Fruit-Grower.

Beginning with the September issue The Fruit-Grower will issue an Eastern edition for the benefit of its large number of subscribers in Eastern states. This Eastern edition will be sent to states east of Ohio, the regular edition being sent to all other states. We have secured as editor of the Eastern edition Mr. Gabriel Hiester, of Harrisburg, Pa., who will furnish some matter each month which will be particularly adapted to our Eastern readers. Several pages of the regular edition will be changed each month, this special matter by Mr. Hiester and others being used instead of some articles which may be peculiarly Western. No changes will be made in advertisements, this part of the paper being the same in both editions. In other words, The Fruit-Grower will remain just as it is now for all states west of and including the state of Ohio, but for readers east of Ohio there will be furnished some articles concerning Eastern conditions, in place of other articles which are adapted to conditions in the West. The entire edition will be printed and mailed in St. Joseph, to which all mail should be addressed as formerly, as all business will be transacted from the home office. Any editorial correspondence in regard to the Eastern edition may be sent to Mr. Hiester at Harrisburg, but all subscriptions and other mail should be sent to St. Joseph. We feel that this new departure will strengthen The Fruit-Grower in the East, where its circulation is increasing very rapidly. A great many of our Eastern friends asked for this change, and will now work all the harder to help build up our circulation among the fruit farmers of the East. The Fruit-Grower is not content with simply being the "best fruit paper in America," but it intends that the fruit farmers shall have published in their interest a paper which shall be the equal, if not the superior, of any paper published in the interest of any branch of agriculture. Are you with us in this work? All we ask of our friends is that they keep their subscriptions paid up and help us to increase our circulation. This is the kind of support The Fruit-Grower wants from its readers everywhere.

For some time The Fruit-Grower has been planning to issue a special issue for distribution at the World's Fair. It was at first intended to make it a separate issue from our regular September number, but we have decided to include our regular subscribers in the list of those who will receive the World's Fair number and therefore the September number will be an especially good paper and we shall print extra copies to be distributed from the Horticultural Building at St. Louis. The September number will consist of 32 pages and cover, the latter being printed in two colors. More copies of it will be printed than we have ever printed of any single issue heretofore. Accordingly, forms of the September number will close very early, so the paper can be issued on time. The last pages of this big number will close on the 5th of September, and the first forms will close even much earlier than that. Advertisers and others should take notice of this early closing, for advertisements and communications received after September 5 will be too late for insertion.

The educational value of the World's Fair to the progressive fruit-grower cannot be over-estimated. One of the first lessons which should be learned from the apple exhibit is the importance of careful handling of fruit which is to be kept in storage.. In the various exhibits there will be found apples which are absolutely perfect, smooth and free from blemish, with not a sign of bruise. The most careless observer need not be told that these apples have been handled carefully. In these same exhibits there will be found other apples which show the marks of improper handling and neglect. And, too, it will be found that the latter have not kept nearly so well as the well-cared-for fruit. The exhibits of peaches will show the importance of careful packing, with the packages full enough to prevent the fruit from moving about, and yet not so full that the fruit is bruised. Another lesson for the commercial grower is that there are persons in every state from Maine to California, who are growing fruits of various kinds, and good fruits, too. When the fruit from any section reaches a given market, it comes into competition with the products of these various states, and the best quality wins. The exhibits at St. Louis show that everywhere there are growers who are producing good grades of fruits, and these are the ones who will win. Everyone should resolve, therefore, to try to produce the very best, so that when his product comes into competition with the best fruits from the various states, it can hold its own. Let no one think that he can afford to grow poor-quality fruit any more, and that it will find a market, no matter how poor the quality. There are other men engaged in the same business, and their fruit must be met on every market. The good fruit, well packed and properly marketed, will be profitable, but there is no question that the poorer grades will be forced out of the market, and the indifferent grower must give up the business. This seems to us to be one of the lessons of the fruit exhibit at St. Louis.

In connection with the fruit exhibit, however, there is need for a word of warning. Too many persons, after seeing fine fruit from one section of the country, are apt to conclude that these varieties will do well everywhere, and will plant them before testing them in the new location. Because a variety of peaches does well in Texas or Georgia it does not necessarily follow it will do well in Missouri or Arkansas. Nor does it follow that varieties of peaches which succeed in the northern limits of the peach belt will do well down South; in fact, we learned while down in Georgia, that the Champion peach, which is such a favorite in the North, is not a success in the peach belt of Georgia. If a variety of fruit in any state exhibit pleases a fruit farmer, he is justified in testing the variety on a small scale, but one should not plant largely of any new variety before trying it in the new location. One must not get too much enthused in favor of any variety of fruit simply from having seen the fruit on exhibition, for there are many other things to be considered in profitable fruit-growing. Remember this when you visit the splendid fruit exhibits in the Horticultural Building at the World's Fair.

The Fruit-Grower has referred to the trouble which was stirred up in New York state in regard to the report of fertilizer examination which was conducted by the Geneva Experiment Station. These analyses showed that some of the brands of fertilizer sold in that state were not up to the requirements of the law, and the manufacturers at once began a fight on the experiment station, claiming the officials had no right or authority to publish reports of this kind. Later the state law was amended, so that authority was conferred on the station officials to do this work, and now, after having been held up for some time, Bulletin 25 has been issued, giving report of the analyses of various brands of fertilizers sold in New York. A study of this bulletin will explain why a fight was made to keep the results from being published, for many of the brands of fertilizer are shown to be deficient in one or more respects, not having the required properties. Several of the companies are putting out brands of fertilizer, nearly every one of which is faulty in some respects. These are the ones, mostly likely, which protested against the work of the station. And it is most gratifying to know that their protests were not availing, for the bulletin just published only goes to prove how important is this fertilizer inspection in a state where so much is used as in New York.

Elsewhere in this issue Prof. F. W. Card, Rhode Island Experiment Station, has some interesting notes on strawberries. He asks for the help of our readers in bringing out some interesting facts. Prof. Card will undertake to furnish some practical notes on the subject of small fruits with the help of our readers. He is known by reputation to all of them, and is known personally to many of them, for he was at the Nebraska Station before going to Rhode Island.

The strike of the packing house employes throughout the country seriously interfered with the meat business, and as a result prices soared rapidly. The advance in prices had scarcely been announced until several manufacturers of breakfast foods began to use large space in the daily papers to tell how nicely one could do without eating meat, if only a certain brand of breakfast food were used. This was good advertising, and timely. But why should not fruit-growers and truck growers have taken advantage of this opportunity to show how much better off people would be if they ate less meat during hot weather and consumed more fresh fruits and vegetables? Why not talk for our own business interests, especially when it is true, as it would be in this case, that the advancement of our business interests would mean better health for the people? Any plan which will tend to increase the consumption of fruits and vegetables means better markets and higher prices for the grower, and at the same time means better heatlh and a saving of money for the consumer. Along this line, have you noticed that the California fruit-growers are using space in Eastern papers and magazines, calling attention to the excellence of California fruits? Well, they are doing just this thing, publishing a list of fruits which will be on sale in certain months in Eastern markets. Of course this advertising is done by an association,, or associations, of fruit-growers, and it matters not whether the consumer buys this brand of fruit or that——the point is that fruits grown in California are good fruits, and their consumption should be increased. Last winter there was a surplus of oranges in Eastern markets, and the persons interested in this trade at once began to talk oranges. "Eat an orange" was their battle ery. Now, let's all take the increased consumption of fruits and vegetables. While the price of meat is high is a good time for this propaganda. Eat fruit and urge others to do so. By so doing you will help yourself and help the health of those who are induced to eat more fruit.

Here is another evidence of the fact that most of the Southern railroads are co-operating with fruit-growers in improving the methods in use down South: On July 23 there was a meeting of truck and fruit-growers at Jacksonville, Texas, which was of interest and importance to the various associations of truck growers throughout the state. The International & Great Northern railway promptly gave notice that representatives of fruit and truck associations who wished to attend this meeting would be furnished with free transportation. How's that? Not "one and a third fare if 100 delegates attend," like we so often hear—but this transportation was free for all persons who belonged to the associations and wanted to attend the meeting at Jacksonville. Liberal policy, do you say? Not necessarily. The Southern roads, which traverse sections where fruit culture is such an important industry, realize that anything which helps the growers to succeed will be bound to help the railroads, so that selfishness alone would impel them to encourage the fruit industry. Think of what it means to Texas railroads, for instance, if the huge cattle farms are cut up into smaller truck farms. This would mean more families to create business, and the freight business would also be increased. Some of our Northern roads have not reached this stage yet. But they will come to it, let us hope, by and by. We really believe that railroads could afford to furnish free transporation for every person who actually attends the meetings of any horticulaural society. This strikes us as being a way for the railroads to help the fruit business—and thereby help themselves.

The Fruit-Grower, while intended as a paper for fruit-growers, has a very large circulation among the nurserymen of the country—in fact, we doubt if any paper in the country reaches more nurserymen than does this paper. From these nurserymen have come some very nice letters about our report of the nurserymen's meeting at Atlanta, and the trip that followed adjournment. One firm, the New Haven Nursery, New Haven, Mo., writes: "We are much pleased with the July number. It is the next best thing to having been on the trip at the nurserymen's convention.. Your description is the most interesting we have read." If you want to know what is going on in the horticultural world, you will certainly have to read The Fruit-Grower.

Mr. Charles W. Murfeldt, well known to the members of the Missouri State Horticultural Society personally, and to thousands of others of our readers by reputation, died July 15, at his home in Kirkwood, Mo. Mr. Murfeldt was well known as a horticultured writer; he was at one time editor of Colman's Rural World, and also served as secretary of the Missouri State Board of Agriculture. At the St. Joseph meeting of the Missouri Horticultural Society, in 1901. Mr. Murtfeldt was elected honorary third vice-president for life. Not only is Mr. Murtfeldt well known, but his daughter, Miss Mary, is well known as an entomologist of rare ability. Mr. Murtfeldt was eighty-seven years of age, and has been quite feeble for a number of years..

Readers of The Fruit-Grower are invited to make use of our Questions and Answers department. This feature of the paper has been growing and is very popular. Of course it is not always possible to answer querles satisfactory but usually the inquirer can get help from the answers. Last month two inquiries were publlshed,

to be answered by our readers—and both of these are answered in this department this month, each query being answered by two different persons. Two answers come from California, one from Iowa and one from Missouri. Don't overlook this feature of The Fruit-Grower. We want to encourage more of a personal interest among our readers not only in this paper, but in the work in which each one is engaged. Speaking of our Questions department, several questions were left over this month, on account of lack of room. They will be published next month, and we find that we will have to devote more space to this department in the future.

A bill has been introduced in the Georgia legislature, providing for the appropriation of $15,000 annually for the work of the entomological department of the board of agriculture. At present this department receives $5,000 annually, which is not sufficient for the work in hand. Prof. Newell, who is at the head of this work, needs a number of assistants, and the larger appropriation will supply them. Besides looking after the San Jose scale in the peach orchards of part of the state, this department has to keep a sharp watch against boll weevil being introduced into the state, and this year 218 nurseries, with 18,000,000 young peach trees growing, will have to be inspected. Georgia appreciates the importance of the fruit industry to that state.

There is great uncertainty in regard to the probable apple crop to be harvested this season, and dealers are at sea as to prices which should be paid. New York apple buyers say they must buy the fruit for less money than was paid a year ago, in order to make any money. On the other hand, growers are of the opinion that the crop which will be suitable for barreling will be much shorter than it was a year ago. From the reports The Fruit-Grower has received, we believe there is a shorter crop than a year ago. There is a great deal of scabby fruit which will not figure in the supply which goes into storage.

The Fruit-Grower has seen some estimates concerning the apple crop for this year which are ridiculous. It seems that certain interests which are to be benefited by low prices for fruit are circulating reports which, according to our reports, are wide of the truth. The crop of Misouri, Illinois and Kansas has been estimated by certain persons to be 65 per cent of a full crop. Yet we doubt if there is one single orchard in each of these states which has 65 per cent of a full crop of merchantable apples. Not one of our correspondents has mentioned such an orchard. How preposterous, therefore, must be the claim that these states will have almost two-thirds of a possible full crop from all the orchards in those states! At nearly every meeting of apple shippers and apple buyers the statement is made over and over again that "it is one thing to grow apples and quite another thing to market them," the deduction from the statement being that apple-growers ought to be content to sell their fruit to persons whose business it is to handle the fruit and distribute it among the different markets. This is good logic—as far as it goes. But the fact is that so long as apple-growers have an idea that the buyers are trying to get the fruit for less than it is worth, so long will these growers feel tempted to try to handle their own fruit. If the apple handlers want to get rid of the competition of the farmer, they must understand that they must meet the latter on an equitable basis, and not try to secure his crop for less money than it is worth, by circulating reports which are untrue. Of course, farmers sometimes underestimate their crops, and it often occurs that prices paid for apples are too high. But it likewise occurs that fruit is sometimes sold entirely too cheap. And it is the business of the farmer and the farmer's paper to see that this does not occur too often. The wise apple grower knows a few things and one thing he knows is that certain reports concerning this year's crop are far from the truth. And The Fruit-Grower knows this, too.

A recent trip through the South impressed us with the fact that the labor question will soon become an important one to farmers there. At least, many farmers told us the negro help is not so plentiful nor so satisfactory as it was a few years ago. Methods of handling the crops will have to be adopted which will require fewer laborers, they say, for the negroes are going to town to engage in other lines of work. This is to be regretted, from the standpoint of the farmer and from the standpoint of the negro. The latter will be better off on the farm, much better off. At the same time, there can be no doubt that the work of the negro on the farm needs intelligent direction. By growing cotton continually the soil has become poorer and poorer, and only the increasing price of cotton has enabled many farmers to come out even at the end of the season. Negro tenants are left to farm the land, in many cases, and they allow the soil to become impoverished, while by growing cow peas and other legumes the fertility of the soil could be maintained. The experiment stations and the railroads of most of the Southern states are doing a good work for the farmers, and if the negro labor can be properly directed, or, better still, properly educated, then the future is bright for that section. This refers particularly to some of the states where the soil has been most neglected, and where the red clay soil can be made to produce great crops once more. Here and there will be found a farmer who is pursuing right methods, and his success is a sufficient indication of what can be accomplished.

"Your paper was recommended to me by Prof. J. W. Lloyd of the University of Illinois, and I have found it even better than represented. I send two blocks-of-five subscribers herewith." —O. O. Roberts, Joppa, Ill.

The Family Circle

Beginning with September issue The Fruit-Grower will print 40,000 copies every month—and the September number will be a much larger edition than this, on account of the extra copies we shall print for the World's Fair. With 40,000 circulation guaranteed for the coming year, our advertising rate will be increased to 20 cents per agate line, $2.80 per inch, per month. This increase in rate is in keeping with increase in circulation, our old rate of 15 cents per line having been based on circulation of 30,000 copies per month. While 30,000 circulation has been guaranteed for the past year, The Fruit-Grower has done much better than this, for the average circulation has exceeded 32,000 copies every month, and during the past few months has exceeded 35,000 copies monthly. So you see we have made our claims good, and more, too.

That this frank statement of our circulation, with opportunity to examine our lists at all times, has been appreciated by advertisers is shown by the fact that nearly all our old advertisers are signing contracts for the coming year. They have learned to rely upon The Fruit-Grower's statements, and their experience has been that our paper is one of the best advertising mediums in the country.

And why should it not be? The Fruit-Grower is an interesting paper, and the members of The Fruit-Grower Family are the best class of farmers in the world. So why should not our advertisers get good returns from their advertisements in our columns?

We are proud of the Fruit-Grower readers and Fruit-Grower advertisers. We believe they are the best people in the world. Sometimes a black sheep may stray in, but not for long, after we find him out. No paper published, we believe, has a more loyal lot of subscribers and advertisers than The Fruit-Grower has, and we are proud of them. Our advertisers recommend the paper to other advertisers, and thus our list of patrons grows. Our subscribers send us new names, and thus the number of members of The Family is increased.

We were looking over a newspaper directory the other day, and found some figures which will interest members of The Fruit-Grower Family. A newspaper directory, we will say, is a publication which gives the circulation of the various newspapers of the country—that is, it gives the circulation of those which are willing to make a frank statement of their circulation; some papers, you know, will not do this, for reasons best known to themselves.

But The Fruit-Grower has always been willing to state its circulation, and this newspaper directory had the report of circulation of this paper for each year of its existence. The paper was started January, 1897, and the record for each year since that time is as follows:

1897	2,880
1898	5,458
1899	10,,000
1900	11,769
1901	16,804
1902	23,287
1903	27,565

And for June, 1904, the record was 35,150. That tells how The Fruit-Grower has grown. And it is growing now faster than ever. So that no wonder we will have to print 40,000 papers every month from now on, for more friends are working for the paper now than ever before.

Members of The Family will be glad to know just where the papers are distributed. We checked up the list for June, and submit the record herewith, showing just the number of paper sent to states which receive more than 350 papers each:

Missouri	8,407
Illinois	2,701
Kansas	2,144
Iowa	1,797
Arkansas	1,772
Pennsylvania	1,509
Ohio	1,466
Oklahoma	1,390
Texas	1,346
New York	1,167
Nebraska	1,158
Tennessee	1,037
Indiana	998
Virginia	930
Colorado	779
West Virginia	694
Michigan	606
Kentucky	580
Washington	463
Massachusetts	351
Miscellaneous states, including about 500 held over	3,855
	35,150

Changes are taking place in this list all the time, of course; one change, for instance, since this report was made up, is that Arkansas has more than likely passed Iowa in the list. During the next few months there will be a big increase in the list in Eastern states. We have a hustler who is working for subscriptions in Pennsylvania, and he says the Keystone state alone will furnish 10,000 subscribers for The Fruit-Grower.

How is that? Looks pretty big to us, but Pennsylvania has lots of people, and this man is a hustler. But, anyway, there will be lots of Eastern growers added to the membership of The Family within the next few months, for our Eastern edition will especially appeal to them.

Now, we want to urge on every reader of The Fruit-Grower the importance of trying to secure some additional subscribers in their respective localities. Great things are being planned for the coming season, and we will tell about them soon. All our big issues during the winter will have special cover designs, for instance, and a great many more good things are being provided for The Family—the best is none too good. If our readers will continue their good work, getting new subscribers whenever possible, we will surprise them with the improvements which will be made. Now is a good time to get new subscribers, as winter evenings are approaching.

Just a suggestion here: How would it do for every member of The Family to make a resolve that he will send at least one new subscriber when he sends his renewal?

Certainly everyone can get **one** new subscriber. Do this, and The Family will be doubled, and The Fruit-Grower will be even better than ever.

THE FRUIT-GROWER CO.

Look at Date on Your Wrapper

Every subscriberof The Fruit-Grower is urged to look at the date on the wrapper in which this issue of the paper is received. This date shows when your subscription expires. If the date is August, '04, or any date prior to this time, then your subscription is due, and we urge that renewal be sent at once. Notices will be sent to all persons whose subscriptions are delinquent next month, and a prompt renewal at this time will save considerable expense in sending out these notices. If any person whose subscription has expired is not prepared to renew just now, we will gladly carry the matter over until a later date. But please drop us a card if this is your desire. Will every reader of The Fruit-Grower please attend to this matter at once?

We believe The Fruit-Grower is entitled to this treatment at the hands of its subscribers. No person has been annoyed by requests that subscriptions be paid, but at the same time we are entitled to this subscription money, and need it in pushing our plans for the coming season.

Remember, that in sending your renewal, you can take advantage of our offer to accept four new subscriptions and one renewal for $1. Any person who tries can get four new subscribers to The Fruit-Grower under this proposition, and thus secure his own renewal for 20 cents. If a club of ten new subscribers is sent in, with $2 to pay for them, the sender of the club can have his own time extended one year **FREE.** How is that for a liberal offer?

During the coming season some special features will be offered to Fruit-Grower readers, and everyone who now reads the paper will certainly want to continue with us. Now look at the date on the wrapper in which The Fruit-Grower is received, and send your renewal today, if there is anything due us. Will you not do this, please? We shall count on the co-operation of every subscriber in this work. Attend to the matter at once, so we will not have to send you a notice of delinquency.

THE FRUIT-GROWER COMPANY, SAINT JOSEPH, MISSOURI

Strawberries in the Southwest

W. L. Howard Tells of a Trip Through the Fields of Southwestern Missouri

For the twenty-one days between May 17 and June 6th, 1904, the Frisco Railroad, in southwest Missouri, handled over eleven hundred cars of strawberries, each car containing on an average about five hundred and fifty crates, each crate consisting of twenty-four quart boxes, making a grand total of 605,000 crates and 14,520,000 quarts. These figures do not take into account the large number of shipments made by express to various points throughout the country. Of these I have no record. Moreover, at one point in the strawberry district a considerable amount of the fruit was canned. In connection with the figures given it should be noted that the Kansas City Southern Railroad passes through part of the fruit country and has this season hauled a great many carloads, the number of which I did not learn. On June 6th it was estimated that the season at Republic would last about ten days longer, but of course there was a general decline in the yield.

The average Missourian has but a faint conception of the magnitude of the strawberry business in the southwestern part of the state. Of course, this is not the only district where this fruit is grown in Missouri, though at present it is the chief center. The principal points of shipment lie between Springfield and Neosho and Sarcoxie. Chief among the shipping stations may be mentioned Republic, Logan, Marionville, Vernona, Pierce City, Neosho and Sarcoxie.

PAIR OF PICKERS ON WAY TO PACKING SHED.
(Notice the stones on surface of soil. Neosho District.)

Having recently had the pleasure of visiting this region I will recount briefly some of the methods pursued at two of the points mentioned, which are typical of the methods employed in growing and handling the fruit. Other points undoubtedly have good systems for handling their crops, but the two described will perhaps cover the case sufficiently.

The Neosho district has a splendid working association for handling a big crop. The association consists of about one hundred and fifty members, representing six hundred and fifty acres of strawberries, all within a radius of four miles from town. This guarantees that the fruit will reach the packing sheds in good condition, which would not be the case if it had to be hauled farther than this distance over rough, stony roads, which are characteristic of this region.

It is a strict rule of the association that fruit must be picked while dry, leaving stems half an inch long, and being carefully graded at the packing shed in the field to insure that no fruit of inferior grade in point of size, firmness, ripeness or cleanliness goes to the shipping station. The picking is done by men, women and children, women being greatly preferred by the growers. It is claimed that they are more orderly, obedient and cleanly in the handling of the fruit. It is nothing unusual to see an entire family at work in the same field, their combined wages often amounting to fifteen to twenty dollars per day.

Each picker is permitted to take four quart boxes to the field at a time, these being carried either in a small tray with handle made for the purpose, or in a market basket. While a great deal of time is seemingly lost by the picker in being compelled to make so many trips to the packing shed to leave his fruit and secure a new supply of boxes, it is claimed by the growers that this plan is absolutely necessary to prevent many of the slower pickers from keeping the fruit after being picked too long in the field. It is desired to have it come to the packing shed while in a fresh condition.

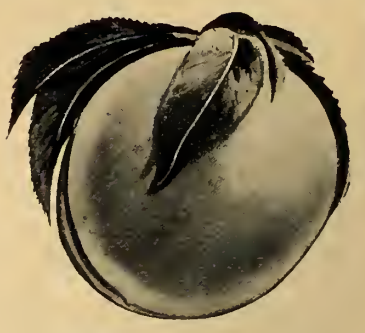
Here it is carefully graded,—at least so far as the surface of each box is concerned—and quickly packed in crates. Nearly all of this work is done by women. In the field it is admitted that there should be at least one overseer, or field boss, to each twenty-five pickers, but I have seen one boss attempting to handle as many as sixty or seventy pickers. In a few instances I saw young women acting as field bosses, but usually the men seem to fill this position more creditably, because of the presence in most places of many boys and men imported from cities who are not as tractable as they should be and hence were inclined to impose upon the feminine boss. The field boss usually finds it necessary, if he is to maintain order and discipline, to be rather severe at times. The younger pickers are liable to forget their business and try to have too much fun during working hours. This not only results in a failure to get the fruit picked, but they will likely pick the berries irregularly, leaving a great many in the field, and may step on the rows a great deal. In most of the fields visited it was found that the great majority of the pickers were very much in earnest and made good use of their time.

The pickers are paid at the rate of 1½ cents per quart box, provided they stay throughout the berry season. Money would be advanced to them from time to time to meet their immediate wants in case they could show that it was necessary. However, it is customary to never pay out more than 1 1-4 cents per box until the end of the season.

Various systems are used for keeping record of the amount of fruit picked by each picker each day; the card system seems to be the favorite. This consists of using cards printed for the purpose, containing columns of figures representing four, three, two and one quarts respectively. At each delivery at the sheds of a four-box tray, the receiver, after inspecting the fruit to see if it is of the proper grade to be accepted, punches out of the card the number of quarts accepted. Occasionally a picker will become careless and bring in fruit of a grade in some way objectionable, which would result in that picker being accredited with perhaps only one, two or three boxes out of the four, the objectionable ones being retained at the shed, but the picker receiving no pay therefor. This usually results in a better class of fruit being brought in at the next load. It is stipulated in the instructions to pickers that they are to be fined the price of one or more boxes under the circumstances mentioned, and if they persist in bringing in unmarketable fruit they are to be discharged and not re-employed again by any member of the association.

Metal checks are sometimes issued to the pickers, which are afterwards

Grow Peaches in a Peach Country



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redeemed by the association or accepted in lieu of cash at the banks or stores in town. The Neosho association employs a different system from any of these, neither checks nor cards being used. The person who receives the fruit from the pickers at the shed credits each, in their presence, with the quantity delivered, the credits being entered on a blank form for the purpose. Thus it will be seen that by the first two mentioned systems the records are in the hands of the pickers, while with the last named way the records are in the hands of the growers.

After the fruit is properly graded twenty-four quart boxes are placed in a crate, which is closed up in such a way that the inspector at the shipping shed can easily examine the fruit without entirely removing the covers. Wagons are now ready for hauling the crates to the shipping shed. All of the wagons employed are provided with springs, no others being allowed to transfer the fruit. Moreover, there are rules for regulating the number of crates that may be loaded on any set of springs of a certain capacity. This is to prevent over-loading and consequent jolting and injury to the fruit in transit.

At the shipping shed—that is, where the fruit is loaded into the cars—the wagons are unloaded in the order of their arrival. At Neosho the crates are passed out by the driver to a man whose business it is to place the crates on the platform, each load in a group to itself on the floor, and an inspector examines every crate and decides whether it is marketable at all, and if so, how it shall be classed. Two classes of fruit are accepted for shipment—the "A" grade being first-class in every respect, and all of the rest going in as "B" grade, the latter not being stamped at all. All of the "A" grade is so indicated on the crates. With all of the berries received for shipment it is required that each grower, before bringing the fruit in, must stamp his name and address on the upper left hand corner of both ends of the crate. In many instances they are required to stamp the name of the variety on the boxes also. It is just possible that a dishonest grower could impose upon the inspector by placing inferior berries in the bottom of the boxes, and especially in the bottom layer of boxes in the crates. To guard against this it is provided in the rules of the association that if sufficient complaints be proven against growers of dishonest packing, that they are to be debarred from membership in the association.

After the fruit is accepted by the inspector a checker makes record of the number of crates, with the variety and grade, on blanks provided for the purpose, the original going to the grower and a carbon copy being retained. This is the grower's claim against the association when it comes to the final settlement.

The fruit, after being passed upon, is immediately placed in refrigerator cars. These cars must have been previously iced, so they are becoming cooled even while loaded. The cars are of different capacities, some holding as much as 612 crates, though 510 to 550 are about the average number per car. The crates are piled only five tiers high in the car, each tier of crates being held in place by having tacked to them two long narrow boards which exactly fit in the car from side to side. When the car is loaded there is always a space of from one and a half to two feet in the center of the car left clear of crates, for convenience in loading and unloading. In this space is placed a framework made of 2x4 pieces of pine, which make strong braces to prevent the crates from becoming disarranged in shipment. When the cars are shipped long distances, it is necessary to exercise great care in the preparation of these braces. When the car is loaded there is an empty space left above the crates about equal to the space occupied by them. This means that the cars are only about half full. It has been found that this is necessary in order to allow the warm air to rise and not be in contact with the fruit. If kept properly iced, fruit which has been received in good condition may safely be on the road for five days and arrive in first-class condition.

The first shipments from both Neosho and Republic were sent to points in Colorado by express. The Neosho shipment, after paying enormous prices for expressage and icing, netted $2.04 per crate. The prices this season, while not large, were satisfactory, and in a well-managed association like that at Neosho, it is believed that the growers will receive an average for the season of about $1.30 per crate, net. The prolonged rains at the height of the season were the cause of an enormous loss of fruit in the entire district. Not only was the fruit lost in the fields from becoming over-ripe, but a great deal of it was picked when slightly soft and consequently could not be sent out as "A" grade. Besides, the pickers became discouraged because they were unable to make expenses on account of the rainy weather, and many of them departed for their homes, which left a shortage of hands. The washouts on the railroads also, about this time, caused considerable trouble in preventing the cars from reaching their destination.

STRAWBERRIES PLANTED AMONG YOUNG PEACH TREES.

It was somewhat surprising to me to find that at every place visited there was no fruit being sold on track, all of it being consigned. The associations know who are the responsible buyers in the various cities and have no hesitation in consigning to them, and I did not hear any complaint of bad treatment.

Viewing the entire strawberry district, it is found that the character of the soil varies greatly. There is sometimes a great difference in the character of the soils in one locality, it sometimes even being found that adjoining fields are so different as to make strawberry growing in one a great success, while virtually a failure in the other. Bearing these facts in mind, it is manifestly impossible to give anyone explicit directions as to just what kind of soil will be best adapted to growing strawberries. In addition it should be said that varieties behave differently in different soils. In the Neosho district the Aroma is the favorite, the entire six hundred and fifty acres of the association consisting of this variety. Here the Sample, one of the newer kinds, is said to be very unsatisfactory. At Republic, which is only fifty-eight miles away, the Sample is considered to be very promising, and is likely to be largely grown in the future. The chief varieties at Republic are Gandy, Aroma and Bubach, with a few Clyde, Sample and Warfield. From this it will be seen that no one variety should be recommended for a new locality. The new grower should plant five or six sorts and determine by trial which will succeed best in his soil. Around

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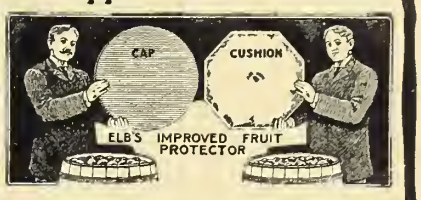

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Neosho the best fruit seems to be produced on the rolling land, which is very gravelly and often quite stony. In such soil this season growers expect a yield of from 150 to 175 crates per acre, but it was estimated that perhaps one-fourth of the crop would be left on the ground on account of the excessive rains.

Among some of the small growers from five to eight miles in the country out from Republic it was learned that they consider it profitable to grow berries if they can make as much as $40 per acre. This was in answer to the question as to what they considered the smallest yield that they could secure in order to afford to continue growing the fruit.

Canning Strawberries.

At Republic the growers have facilities not found at other points, in that, if they have unmarketable fruit on their hands, they can take it to their tomato cannery and have it canned. It was learned that if a price of 55 or 60 cents, net, can be secured for the fruit, it had better be sold, but if not, it could be canned with profit. It costs 36 cents per crate to pick the fruit, and the crate and boxes cost about 14 cents additional, which makes the total cost of the crate of berries about 50 cents. If this price cannot be secured, the fruit should be canned. Canning strawberries is yet in the experimental stage and may yet be greatly improved. At present the Republic people, with their facilities and methods, expect to secure a profit of about 25 cents per case of twenty-four pint cans. A twenty-four box crate of fairly firm berries will fill about twenty-four pint cans. The fruit is stemmed and placed in the cans by girls. The cans are then passed to a man, who dips them into a 13 per cent sugar solution, this liquid filling up the spaces between the berries. The cans are then passed through a steam bath, where they remain about four minutes; this is for the purpose of expanding the cans and driving out the cold air. They then go to the capper, who places the caps on the cans, and then they are placed in large open vats of water. Live steam is introduced into the bottom of these tanks and soon brings the water to the boiling point. After beginning to boil, the cans are allowed to remain in it from eight to ten minutes; they are then taken out and cooled suddenly by dashing cold water upon them. After becoming thoroughly cooled they are ready to be labeled and crated.

The question is often asked whether the strawberry business is not overdone in the southwest counties. Mr. F. H. Speakman, who is at the head of the Neosho association, and who is probably the best-informed man in the entire region on the strawberry business, is of the opinion that it has reached its limits. At some points outside of Neosho, from extensive observations, the writer is led to believe that if better methods are not pursued in the growing and handling of the fruit, the business can easily be overdone. However, if inspectors enforce strict rules for grading, the growers will be forced to bring in only a superior quality of fruit, and under such circumstances there can be found good markets for a largely increased quantity of the product. This statement is made only after a careful consideration of the conditions as they exist at present. The great trouble with the average association is for the growers to have sufficient confidence in some one man to permit him to enforce strict rules governing the class of fruit that is to be shipped. A community can soon win or lose a reputation in this way. The strong man will build up a name for an association, and buyers will seek his patronage. On the other hand, where loose methods are pursued, buyers will only patronize such an individual or association when they can do no better. Of course, such an association could exist for a few seasons by constantly seeking new markets, but no firm would likely patronize them a second time if they could avoid it.

Growing Strawberries.

Two methods are employed in the growing of strawberries in the southwest Missouri district. All agree that the land should be thoroughly prepared and the plants set as early as possible in the spring, this being the only season they are planted. The rows are made four feet apart, and the plants set from two to three feet apart in the rows. The plants are always home-grown, as growers claim they are better than can be procured from anywhere else. Each large grower will usually have a propagating bed, which is never allowed to fruit, the flowers being pinched off. This insures a crop of fine, large, well-rooted runners. Each runner is allowed to form as many plants as it will, it being considered that those toward the tip are as good as any. The field is cultivated thoroughly until August, the runners being turned along the rows. After this as many runners as will are allowed to form and take root. In November cultivation is begun again between the rows, in order to kill the late-growing weeds. In addition to this cultivation, the field is gone over with hoes in order to cut out the weeds among the plants. At this time the plants are thinned by digging out a great many, leaving the remaining ones standing from four to six inches apart.

HOME OF F. H. SPEAKMAN, NEOSHO, MO., "STRAWBERRY KING."

In early spring, if any weeds begin to start, the cultivator should again be started between the rows, and perhaps it will be necessary to do some hoeing. About the first week in March the field should be mulched with straw, or prairie hay. If possible this light mulch should always be applied in spring, as it prevents the fruit from being soiled during rainy weather.

There is some difference of opinion as to the treatment of the field after the crop of fruit is off. One method is to cross the rows with a double-shovel plow, plowing furrows in this way about three to three and one-half feet apart. The next step is to plow along and in the matted rows with a bull-tongue plow, making two or three furrows in this way. Cultivation should then continue between the rows until August, when the treatment as given for the first year is repeated. Under the above treatment it is expected that a field will last about three years; that is, two or three crops should be secured. The entire field is then plowed up and cropped with grain at least one season before being again set in strawberries.

The other method of management after the fruiting season is over is to begin plowing in the middle of the rows with a six-inch turning plow and continue back-furrowing — throwing the dirt toward the middle—until there is left a strip of unplowed ground about eight inches wide in the center of where the matted row was. The soil is allowed lie this way undisturbed for several days, until the plants which have been turned over have died; then harrow across the rows until the ground is level. The harrow is also run along in the direction of the rows at this time to assist in better cultivating the land. After this cultivate for a month between the rows, gradually reducing the width of the alley—the space between the rows—so as to permit runners to strike root. This ends the cultivation. The field is mulched lightly with clean straw in early spring.

The method of renewing the plantations is to allow the alleys to become filled with runners and then plow out the old matted rows. This should be done every two years. Many seasons runners do not form abundantly enough or do not root sufficiently well to renew the fields in this way. Under such circumstances the patch must be plowed up and reset. It is agreed by those who follow this method of renewal that no field should be run in berries longer than six years, usually four years being the limit. One or two grain crops should always intervene before planting again in berries.

W. L. HOWARD.
Missouri Experiment Station.

Ozark Fruit-Growers' Association Shipping Peaches.

This association has opened headquarters in Fort Smith and Van Buren, Ark., for the peach season. Secretary G. A. Atwood is in charge of the Fort Smith headquarters, and J. A. Taylor is in charge at Van Buren. This association, according to Mr. Taylor, will handle 90 per cent of the Arkansas crop this season, and about 60 per cent of the Missouri crop. This is the first season, we believe, that the association has undertaken this work, and we certainly hope it will succeed in its plans. The association will load several cars of peaches at Van Buren for export. Mr. Taylor was interested in exporting some peaches from Oklahoma last year, and the success then attained encourages him to believe that Arkansas peaches can be profitably exported this season.

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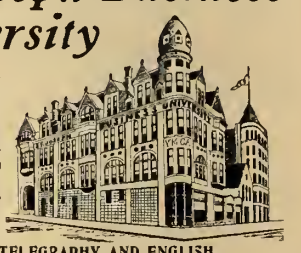

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On June 28 Cumberland Raspberries sold for $2.25 per crate on the K. C. market; Kansas Raspberries sold for $1.50 to $1.75.

On June 29 Cumberland sold for $2.00 to $2.10; Kansas sold for $1.50 to $1.60.

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Also Kansas, Hopkins, Gregg, Miller, and Thwack.

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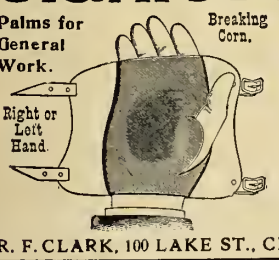

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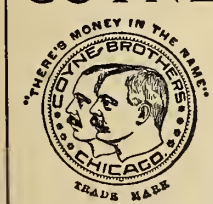

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Renew your subscription today.

Fruit Prospects.

There has been no great change in crop conditions since the July issue of the Fruit-Grower was sent out. The apple crop is now the great crop for fruit farmers, and this is in bad condition throughout the Middle West. New York's crop is fair, but not so large as was at first indicated. Pennsylvania and states in that section are in about the same condition, although West Virginia and Virginia send unfavorable reports as to their crop. Ohio, Indiana and Illinois promise 25 to 33 per cent of crop, but fruit is scabby. Missouri is no better. Kansas, Arkansas, Nebraska and Iowa promise a better crop than this, but in these states the crop will not be half a full crop. The apple buyers have more favorable reports than these, they claim, but the Fruit-Grower believes, from its correspondence, that the reports published in this paper have been in every way reliable. The crop of Missouri, Illinois and Kansas, for instance, has been given as 65 to 70 per cent of a full crop by a prominent publication. We have not heard of even a single orchard in any of these states which promises as much as 65 per cent of a full crop, much less to give this estimate as the average for all the bearing trees in the state. The prices received for summer fruit have been very high, as a rule, and this is a good indication of the condition of the crop generally.

Peaches are turning out a pretty good crop, all things considered, and in some places has been even a full crop. The grape crop still promises well. Some complaint has been made of the fruit rotting, but it is believed this rot has stopped, and that the crop will mature nicely. If no further rotting occurs, the crop of grapes will be unusually large and of fine quality.

Peonies at Low Prices.

Within the past few years no flower has increased in popularity so much as has the peony. It is hardy, takes care of itself, is not subject to disease nor attacked by insects, blooms early and abundantly, and, finally, is one of the handsomest flowers that grows. The plants get better every year, and after having been planted a year or two will produce great masses of blooms. In this issue of The Fruit-Grower the Peterson Nursery, 164 La Salle street, Chicago, announce that for $5 they will ship ten roots of the best varieties. This is certainly a very liberal offer, and should be taken advantage of by hundreds of our readers, for there is no other way in which $5 can be so well spent in buying flowers. The editor of The Fruit-Grower bought a lot of peonies from Peterson's nursery several years ago, and it was the best investment in this line he ever made. The plants bloomed the first year, and every year have produced greater numbers of blooms, until this year great quantities of beautiful flowers, as fragrant as a rose, were produced. The Fruit-Grower would especially urge its readers to invest $5 in ten of these plants, and will guarantee results if the plants are given half a chance. The Peterson Nursery is one of the largest growers of peonies in the country, and has all varieties to select from in filling orders. Order today, and start the plants this fall.

Iowa State Fair.

In an age of celebrations of centennials and semi-centennials it is appropriate that the semi-centennial of the Iowa State Fair should be celebrated this year by Iowa people with a state fair that cannot be surpassed anywhere in the world. This is the high aim and purpose of those who are planning for the Iowa fair of 1904, August 19 to 26. To make the occasion noteworthy it is proposed that there shall be a reunion of all those who assisted in the formation of the first fair or attended the same, and especially of the exhibition. Not very many, it will be anticipated, will be found to attend this remarkable reunion; and yet, Secretary Simpson has already received letters from a number of those who would be eligible to participate in this gathering. The first state fair probably drew from at most a dozen counties in the southeastern part of the state, and most of the persons who attended live there now. But the names of the survivors will be secured as far as possible and a reunion be arranged for all who can attend the semi-centennial of the state fair organization.

Washington Fruit-Growers Meet.

Mr. T W. Clark, North Yakima, Wash., sends us a list of subscribers which he secured at the horticultural picnic held at the state fair grounds recently. Mr. Clark writes that the attendance was good and much interest manifested. Mr. Morehouse of the Spokane Commercial Club addressed the meeting, and told of the work which had been accomplished at Spokane, in the way of securing the establishment of a plant to work up the by-products of fruits. This factory will make vinegar, apple butter, etc., and if it is successful a similar plant will be established at North Yakima.

State Fruit Inspector A. Von Holderbeck of Tacoma made a plea for organization of fruit-growers. He told of some of the successful organizations of the country, and urged the fruit-growers of the Yakima Valley who are not members of the Yakima Horticultural Union, to join this association at once. He also urged the growers to be very careful in the grading and packing of their fruits, and recommended that they never let inferior fruit leave their farms. The fruit industry of the Yakima Valley is only in its infancy, and ranchers have been too careless in preparing their products for market.

Mr. Clark adds that the fruit-growers of the Yakima Valley have a grievance against nurserymen, and particularly against a large nursery company in Missouri, which has sold stock in the Yakima Valley. The stock purchased from this firm was not satisfactory, in that a great quantity of it did not live, and many trees were not true to name. Yet when appealed to, the firm declined to make any concessions whatever outside the regular rules of the firm. Mr. Clark adds that considerable feeling has been stirred up, and not many sales will be made by this firm in that locality hereafter, on account of the trouble indicated.

Louisiana Peach Orchards.

Elsewhere in this issue will be found the advertisement of the Louisiana Orchard Culture Company, Kansas City, Mo., which has a plan for planting peach orchards in Northwest Louisiana, where peaches are almost a sure crop. This company has large orchards of its own, and also plants orchards for other persons, caring for the trees until they reach bearing age, allowing the purchasers to pay for them on the installment plan. This section of Louisiana is well adapted to the growing of peaches. Commercial peach orchards already bearing are profitable, as the fruit comes on market ahead of the Alabama and Georgia peaches. A beautifully printed booklet.. "A Story of the Peach," has been issued by this firm, which will be sent free to those who ask for same, mentioning The Fruit-Grower. This booklet is illustrated with scenes of peach orchards, and presents a full explanation of the plan under which the Louisiana Orchad Culture Company plants and sells its orchards. Send for a copy.

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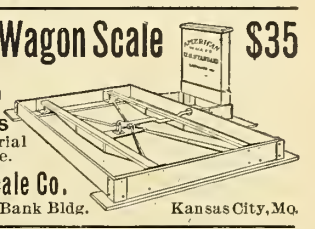

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Blackberries, Strawberries, Raspberries

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Please Mention Western Fruit-Grower.

Some Strawberry Notes

June 25, 1904.—Strawberry picking is unusually late this year. Our first picking was made Monday, June 20, and that, a small one. We are only seven miles from the ocean and that always makes our season a week or more later than in many other places only short distances away. The rose and strawberry show of the Rhode Island Horticultural Society was held this week at Providence. It was timed for that locality, but was altogether too early for us.

Two lines of work with strawberries are under way at the Rhode Island Experiment Station. One is selection from most productive plants, to determine, if possible, whether we can thereby increase productiveness. The other is that of growing seedlings from crosses.

The selection work has not thus far yielded the results which we had hoped for it. Many difficulties appear in this line of work. In the beginning we recorded the yields from plants kept in hills, then took runners from those which bore the heaviest yield. We straightway found, however, that such a plant was very likely to become so exhausted in bearing its heavy crop of fruit, as to give very weak plants, and with poorer results than those taken at random from young plantations. The next move was to allow five or six young plants to root, but to keep off all other runners. This required such it on. We are as yet entirely unable to form an opinion as to its value.

In the growing of seedlings we have been working largely for late varieties. Hunn has been used as a parent in many of the crosses, and always shows its influence strongly in the offspring. In going over the seedlings to determine the sex of blossoms, it is interesting to note that where both parents are perfect varieties, the offspring is almost wholly perfect. Where one parent is perfect, and the other imperfect, it is surprising to see how evenly divided the seedlings are likely to be. In these seedlings I have been struck with the fact that imperfect blossoms are very likely to be much smaller than perfect ones. Perhaps this is a general rule, but if so, 't had escaped my notice heretofore. Will some of the old strawberry-growers please tell us about this?

One cross which was made several years ago used pollen of the wild strawberry on the "Wm. Belt." Two objects were in mind in making this cross. One was the hope of introducing the flavor of the wild berry into our garden varieties. The other was a hope that we might possibly secure greater resistance to frost. The year the cross was made the strawberries suffered greatly from a late spring frost. Wm. Belt was injured less than many others. The wild berries were also injured comparatively little. This may have been in part a matter of the relation of blooming-time to the time when this frost occurred, but it seemed possible that there might be some inherent resisting power in these two parents. The offspring of the first cross gave very pretty berries, somewhat larger than wild fruit, but possessing all its characteristics. The plants were weak and slender, and produced runners without number. Some of these are fruiting in two- year-old beds this season, and under those conditions have shown great weakness of plant, and susceptibility to rust. They are carrying very little fruit, the majority of blossoms failing to develop. Crosses made between this and other garden varieties are coming on, and will give berries of fair size. Whether any of them will retain the wild flavor which we are after, remains to be seen.

SEEDLING OF WILD STRAWBERRY CROSSED WITH WM. BELT.

a constant watch that it was very apt to be neglected. The production of these young plants also reduced the vigor of the stool which was left to bear fruit.

The plan now adopted is to set the plants six feet apart in the row and allow the young plants to form a colony about each one. The yield of this colony is then recorded, instead of the yield of an individual plant kept in a hill. Five young plants are taken from each colony in the spring, before fruiting. The following year the selection goes on from those plants which were taken from the colony which proves to be most productive at picking-time. By this plan we hope to eliminate some of the uncertainties of the other method. The returns from such a colony ought to give us a more reliable estimate of the productiveness of a given strain than the yield from a single plant.

So many variable factors enter into the growth of plants that we can never be sure that all the conditions have been equal. If two men set them, one man firms the soil better than the other. Some irregularity may give one an advantage. An insect may weaken another. A third may need to be replaced entirely. In ordinary practice we do not note these things, and think little of them, but in determining a question so delicate as the influence of heredity, they may be sufficient to lead us entirely astray. Although we have had this selection work under way four of five years, we feel that we are only just beginning to learn how to carry

I should like to have an experience meeting on the subject of strawberry mulching. This is forced upon my attention now from an unpleasant experience which we are having the present season. Considerable swampy land is to be found in this region and we have been in the habit of buying bog-hay for a mulch. Last year we got some which had evidently ripened its seeds to perfection, and we seeded our bed most thoroughly with the fine wiry grass, which has kept us busy this summer, and apparently will as long as the bed stands. We did not have enough of this hay, and used some brush and evergreen boughs on part of the bed. We found that the plants under these boughs came through the winter fully as well

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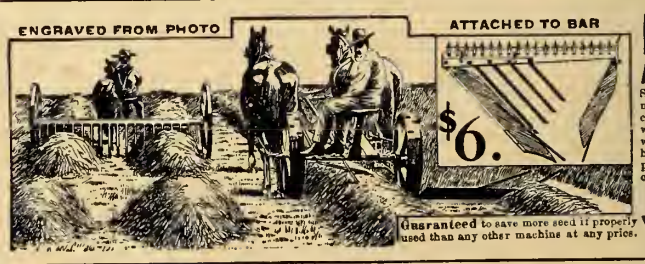

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as under the other mulch, and started up much more promptly in spring. We have concluded that we want no more bog-hay for this purpose, and are not sure but that we shall be content with common brush, cut in the fall with the leaves on, if we find nothing better. We mean to try a little experiment in growing material, but will prefer to tell about that later.

We have not yet solved, to our satisfaction, the problem of keeping a bed under such conditions as to always look well when visitors come, and also to give best returns, keep the berries clean, and put the cost on a business-like basis. I hope that some of our strawberry growers can give us suggestions in this line.

Our beds suffered from winter-killing this year much worse than usual. There were several light snow-storms, followed by rain, which caused ice to form wherever depressions occurred in the field. Under such conditions the plants were killed outright. Oftentimes the line is very sharply drawn between healthy plants and no plants at all in the same row.

FRED W. CARD.
Rhode Island Experiment Station.

Unfermented Grape Juice.

At the present time prospects are good for a very large crop of grapes. Vines are well set, bunches are full, and the only danger now is that fruit will rot. With a large crop of grapes, there will be much interest in methods of utilizing a portion of the crop for winter use, keeping it off the market in autumn. New York growers have profited by the establishment of factories which use great quantities of grapes each year for the purpose of making unfermented grape juice. This is a growing industry, and is worthy of being pushed. To make the unfermented juice on a large scale a large plant is needed, but every family can prepare grape juice for home use with very little trouble or expense. Farmers' Bulletin No. 175 of the United States Department of Agriculture, gives full directions for the making of this juice at home.

Fermentation of the juice must be prevented, of course. This fermentation is due to invisible spores of various fungi, yeasts and bacteria, which are inert when dry, but after the grapes are crushed and the spores are immersed in the juice they become active and begin to multiply rapidly. These germs, or spores, can be killed by heating the juice to a certain temperature, and practical tests have shown that the juice can be sterilized by heating to a temperature of from 165 to 176 degrees. At this temperature the flavor is hardly changed, while at a temperature much above 200 degrees there is a marked change in flavor. This is an important point, as the flavor and quality of the product depend on it.

Use only clean, sound, well-ripened but not over-ripe grapes. If an ordinary cider mill is at hand, it may be used for crushing and pressing, or the grapes may be crushed and pressed with the hands. If a light-colored juice is desired, put the crushed grapes in a cleanly washed cloth sack and tie up. Then either hang up securely and twist it or let two persons take hold, one on each end of the sack, and twist until the greater part of the juice is expressed. Then gradually heat the juice in a double boiler or a large stone jar in a pan of hot water, so that the juice does not come in direct contact with the fire, at a temperature of 180 degrees to 200 degrees Fahrenheit; never above 200. It is best to use a thermometer, but if there be none at hand heat the juice until it steams, but do not allow it to boil. Put in a glass or enameled vessel to settle for twenty-four hours; carefully drain the juice from the sediment and run it through several thicknesses of clean flannel, or a conic filter made from woolen cloth or felt may be used. After this fill into clean bottles. The bottles and corks should have been well sterilized beforehand; it is best to steam both bottles and corks for fifteen minutes at a temperature of 240 degrees. Do not fill the bottles entirely, but leave room for the liquid to expand again when heated. Fit a thin board over the bottom of an ordinary wash boiler, set the filled bottles (or ordinary glass fruit jars are just as good) in it, fill in with water around the bottles to within about an inch of the tops, and gradually heat until it is about to simmer. Then take the bottles out and cork or seal immediately. It is a good idea to take the further precaution of sealing the corks over with sealing wax or paraffine to prevent mold germs from entering through the corks.

Should it be desired to make red juice, heat the crushed grapes to not above 200 degrees, strain through a clean cloth or drip bag, using no pressure, set away to cool and settle, and proceed the same as with light-colored juice. Many people do not even go to the trouble of letting the juice settle after straining, but reheat it and seal it up immediately, simply setting the vessels away in a cool place in an upright position, where they will be undisturbed. The juice is thus allowed to settle, and when wanted for use the clear juice is simply taken off the sediment. Any person familiar with the process of canning fruit can also preserve grape juice, for the principles involved are identical.

One of the leading defects so far found in unfermented grape juice is that much of it is not clear, a condition which very much detracts from an otherwise attractive appearance and due to two causes already alluded to: Either the final sterilization in bottles has been at a higher temperature than the preceding one, or the juice has not been properly filtered or has not been filtered at all. In other cases the juice has been sterilized at such a high temperature that it has a disagreeable scorched taste. It should be remembered that attempts to sterilize it at a temperature above 195 degrees are dangerous, so far as the flavor of the finished product is concerned.

Another serious mistake is made sometimes by putting the juice into bottles so large that much of it becomes spoiled before it is used after the bottles are opened. Unfermented grape juice properly made and bottled will keep indefinitely, if it is not exposed to the atmosphere or mold germs; but when a bottle is once opened it should, like canned goods, be used as soon as possible, to keep it from spoiling.

Grape juice is valuable in cases of sickness, especially in the convalescent stage. It is valuable as a preventive, a restorative and as a cure. It is a food, drink and nourishment all in one. The effects of unfermented grape juice on the human system have been studied for a number of years, especially at the so-called grape cures so long in vogue in Europe. It is quite generally claimed that using a reasonably large amount of unfermented grape juice with an otherwise suitable mixed diet is beneficial, and that digestion is improved, intestinal fermentation diminished, and that gains in body weight will result.

Grape juice contains the same kinds of nutrients as other foods. The percentage of water is high, and thus it resembles liquid foods more closely than solid foods. It is sometimes compared with milk, the most common liquid food. It contains less water than milk, more carbohydrates, and less protein, fat and ash. Carbohydrates, largely present in the form of sugar, are the principal nutritive ingredients. It is evident, therefore, that grape juice is essentially an energy-yielding food, and may help the body to become fatter, though it cannot materially assist in building nitrogenous tissue. Sugars in moderate amounts are wholesome foods, and grape juice offers such material in a reasonably dilute as well as palatable form. Undoubtedly the agreeable flavor increases the appetite, a by no means unimportant consideration.

A nice drink for invalids, and one which is often used in hospitals, is made as follows: Put in the bottom of a wineglass two tablespoonfuls of grape juice; add to this the beaten white of one egg and a little chopped ice; sprinkle sugar over the top and serve.

Grape ice cream is made as follows: One quart of unfermented grape juice, one quart of cream, and the juice of one lemon. Bohemian cream is made of one pint of thick cream, one pint of grape-juice jelly; stir together; put in cups and set on ice; serve with lady fingers.

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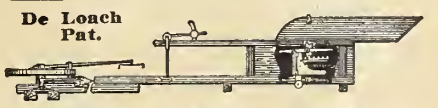

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Questions and Answers

How to Make Cucumber Pickles.—One of the members of The Fruit-Grower Family asks for a formula to put up cucumber pickles. Here is the recipe we use:

Cucumber Pickles.—Pick and wash thoroughly the cucumbers, then put in a salt brine about thirty-six hours; take them out and pack in self-sealing jars; provide enough cider vinegar to cover the pickles in the jars, bring this vinegar to the boiling point, pour over the pickles and seal the jars. Before pouring the vinegar over the pickles we put into each half gallon of pickles about a tablespoonful of pickle spice and two tablespoonfuls of sugar.

Beet Pickles.—Cook the beets thoroughly, slice into self-sealing jars, adding two tablespoonfuls of sugar and nearly one tablespoonful of pickle spice to each quart; then pour over the beets cider vinegar which has been brought to a boil, and seal the jars.—R. E. L. Black, Sampsel Station, Mo.

Cucumber Pickles.—Wash and wipe one-half bushel (or less) of medium-size cucumbers; pack close in a jar, sprinkle over the top one pint of salt, and pour over them a sufficient quantity of boiling water to cover them. Let this stand until cold, or allow to stand over night if prepared in the evening; when cold, drain and place about a gallon at a time on the stove in enough cold vinegar to cover level; this need not be very strong vinegar; add a lump of alum about the size of a small hickorynut, to keep the pickles firm and brittle—too much alum is injurious. Have on the stove in another kettle a gallon of the best cider vinegar, to which add one-half pint brown sugar; have spices prepared, such as sliced horse-radish, green and red peppers, sliced in rings, black and yellow mustard seed, a few cloves, some stick cinnamon; the spices can be dropped in the prepared vinegar, or each spice can be prepared by sprinkling with salt and pouring over them boiling water, letting this stand for fifteen minutes, and then drop them into boiling water, letting this stand for fifteen minutes, and then drop a sufficient quantity in each jar or bottle of pickles. When the pickles come to the boiling point in the dilute vinegar, take them out and pack in pickle bottles or fruit jars, mixing with them the spices—a layer of pickle and then some spices, and so on, shaking bottles or jars so as to pack tightly; when full, cover with the hot sweetened vinegar and seal as you would canned fruit. These pickles are equal to the best brand of imported pickles.

Another Recipe.—Prepare—that is, peel and remove the seeds of ripe cucumbers; quarter them and sprinkle with salt over night, using only a little salt; in the morning drain them. Bring to a boil sufficient cider vinegar, sweetened, using about one-half pint of brown sugar to a gallon of vinegar; add spices to suit, as in the foregoing recipe. When vinegar boils, drop in the prepared cucumbers; bring to a boil for about one-half minute to a minute, pack in jars and fill up with the vinegar, and seal air-tight, as for canned fruit.. This is an excellent recipe. Pickles will keep and will be crisp and white if not boiled too long.—Mrs. M. K. Heilesen, Elkhorn, Iowa.

The Cornichon Grape.—Noting inquiry from T. E. M., in July issue, I will say the late black grape he refers to is the Cornichon. It is largely grown in California, but is not as popular as the large red grape, the Flame Tokay. However, it ripens after most of the Tokays are gone, and does not rot readily after the fall rains. Cornichon, in French means "cucumber," and is applied on account of the shape of the berry. I do not know whether it would be possible to grow this grape in Northern Alabama. At Southern Pines, Ga., Baron von Herrf planted some vines that I sent him some years ago, but I do not know whether they were successful or not. Like all European grapes, the Cornichon is subject in moist climates to black rot and peronospera, which in some localities, France, for instance, can be controlled by spraying with Bordeaux. These diseases are unknown in California. It is also subject to phylloxera, so if experimented with in the East, vines propagated on resistant stock should be used, Rupestris, Lenior or Riparia. It would probably stand the winter temperatures all right.—Frank T. Swett, Martinez, Cal.

Another Reply to the Same Query.—The name of the grape to which T. B. M., Glen Ellyn, Ill., refers, on page 16 of July issue, is the Cornichon.. It seems to be a very hardy grower with me. It is in no way as good as the Concord, but its shape makes it sort of a novelty and the tough skin and slowness of ripening makes it one of the best shippers. I think it would grow all right anywhere in the South, but would need different—shorter—pruning. For table use the Mission, Malvase, Rose of Peru are far better, but are not good shippers.. I will furnish cuttings of the Cornichon to anyone who will pay postage, next March or April.—C. W. Dayton, Chatsworth Park, California.

C. J. H., Memphis, Tenn.—Will you please give names and as nearly as possible the period of ripening in Tennessee of fancy native plums, which are suitable for planting in this state. Which is the best stalk to use on which to bud peach, where borers are particularly bad?

Answer by Prof. Charles A. Keffer, Tennessee Experiment Station: The only native plum that is grown to any extent in Tennessee is the Wild Goose, and this seems to me to possess more desirable characteristics than any other native form I have seen tried in this state. It ripens over a considerable period, beginning about the 15th of July. Among the English plums that succeed in this vicinity are the Lombard and Bradshaw. The Jefferson is a European variety of very fine quality that should succeed. Instead of attempting to find a borer proof stalk, I would guard against trouble from borers by washing the trees. We have found in our experiments that a wash composed of one quart of crude carbolic acid to ten pounds of very strong soap suds is an excellent preventive. Apply at the time of blooming in the spring and again in midsummer. The plum stalk is usually considered much more resistant to borers than peach stalks, but it is hardly so congenial a stalk to the peach and it is difficult to buy peach trees in any quantity on this stalk.

B. D., Seneca, Mo. — Is gypsum or land plaster of any benefit to strawberries, raspberries and blackberries? If so, when should it be applied, in what quastity, and where can it be procured?

Answer by Dr. Whitten: Gypsum or land plaster has a slight value for berries in certain soils. Usually, however, the comparatively new strawberry lands of this state do not need the plaster. Wood ashes are usually more beneficial than the plaster where they can be obtained.

J. C. B., Saluda, N. C. — (1) Will you please tell me what is the best time of the year to set out grape cuttings? Would it not be well to set them in the fall when I trim my vines? (2) Also please tell me if the quince can be successfully grafted onto apple, and what would be the result?

Answer by Dr. Whitten: (1) Grape cuttings may be put out in the autumn at the time the vines are pruned, as soon as their leaves are off. Many varieties succeed well in favorable soil if done in this way. It is perhaps safer, however, to make the cuttings in the fall when the pruning is done, and pack them in moist sawdust and keep in a cool cellar where they will not dry out during the winter. They may then be planted out in rows in early spring. Treated in this way they will callous and sometimes make roots in the sawdust during the winter and will escape the possibility of being injured in case the winter is a severe one. (2) The quince may be grafted on the apple, though it is not customary to graft it upon an old growing apple tree. If the apple root is used it is best to take one year old apple roots and make whip grafts on the short piece of root during the winter, in the cellar, and keep the grafts packed until spring in sawdust. The apple root will cause the quince to start and once it is started the bottom of the scion will put out roots of its own.

(Other Queries on Page Twenty.)

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GEORGE W. MORRIS, Lyndon, Kan.

We are the largest dealers in real estate in Grand Valley, the famous peach, apple and pear growing section of Western Colorado. Orchards here 8 years old net the growers from $500 to $700 per acre. The climate is the best in the world and is a specific for lung and throat troubles and asthma. Write us for information. The Home Loan & Investment Co., 357 Main Street, Grand Junction, Colo.

Farm for Sale.—137-acre farm, well improved, 50 acres cleared, well watered, good saleable white oak timber, well watered, school, churches handy, on the public road, a fine orchard, 1,000 peach trees, mostly Elbertas; 200 Keiffer pear; will soon be in bearing, with quite a number of other kinds of fruit is bearing. This is in Bollinger Co., Mo., in a fine strawberry country. Anyone who wants to know any particulars of this farm, write me; I will answer them at once. W. V. FROMAN, Lutesville, Mo.

For Sale—Fruit ranch in the famous Payette Valley of Idaho. No drouths, no floods; plenty of water when you want it, and only when you want it. A bargain. Address J. T. Morey, Nebraska City, Neb.

For Sale--40-acre fruit farm, 2 miles from Olney, Ill.; 25 acres in good bearing apple trees, besides other fruit; near school and church; good 6-room house and cellar, new barn and outbuildings, all in first-class condition; plenty of good water. Price $3,000. W. A. WHEELER, Olney, Ill.

Fine Fruit Farm for Sale—40 acres; 25 in bearing orchard, 4 in Strawberries; 1½ miles from R. R. Station. C. P. SAVILLE, Purdy, Mo.

DO YOU WANT CASH
FOR YOUR REAL ESTATE OR BUSINESS?

I can get it for you. Send me full description and lowest cash price. My methods differ from all others. My office is headquarters for cash buyers. Makes no difference where you are located. Write today. Established 1881. Bank references.
FRANK P. CLEVLAND,
Real Estate Expt..
2955 Adams Exp. Bldg. Chicago, Ill.

We Can Sell Your Farm
OR OTHER REAL ESTATE.
no matter where it is or what it is worth. Send description, state price and learn our wonderfully successful plan. Address,
Southern Minnesota Valley Land Co.
MADELIA, MINN.

WE CAN SELL
YOUR FARM, RANCH, HOME OR OTHER PROPERTY
No matter where located. If you desire a quick sale, send us description and price. Before buying a farm, ranch, home or property of any kind, anywhere, write us. We have or can get what you want.
N. B. JOHNSON & CO.,
505-H Bank of Commerce Bldg., KANSAS CITY, MO.

FOR SALE.
Fruit, Poultry and Dairy Farm.
This farm is situated in Lincoln County, Mo., 68 miles from St. Louis, on the great Burlington Ry., and is only one mile from the growing town of Elsberry, with a population of 1,200. It contains 159 acres all fenced, two houses of three and five rooms each, new barn, fine wells and two never-failing springs; plenty of timber for farm use, good pastures, 60 acres in clover, 40 acres in orchard—1,200 apple, 6 years old; 500 peach, 6 years old; 700 apple, 5 years old; 1,600 peach 1 and 2 years old; apples, scattering crop; peaches, full crop—1,000 bushels to market at once; pears, plums, cherries, berries, etc. All trees in splendid condition. The soil is a clay loam and is very fertile. All land is tillable. Clover is a sure crop, with blue glass everywhere. This is an ideal site for orchard, and was selected as the best location in the whole state, soil, transportation, markets, etc., considered. There will be $2,000.00 worth of soil products sold from place this year, not counting live stock. This is a great opportunity for a man with large family of boys and girls able to do all their own work, or it is a fine investment., The future prospects for money making on this place are very promising. The farm is in the Elsberry school district. The town is fast growing in the direction of this farm. Land adjoining it sold for 100 per a crelast spring with no improvements. I offer this farm for sale at $60 per acre and invite anyone desiring a splendid farm to write me, or better, come at once to see it. We are only 1½ hours ride from St. Louis. Take in the World's Fair, and see this farm on same trip. Will sell purchaser hay, corn, Jersey cattle, work stock and implements if wanted. Possession given October 1, 1904. JAMES M. ROGERS, Elsberry, Mo.

JUICY FRUIT
That's what we're raising in car load lots in "Sunny South Missouri" and "North Arkansas." Here are some of the kinds of farms they are raising them on:

160 acres Howell Co., Mo., 1 mile good R. R. town, 2 sets improvements, fine water, 60 cultivated, 100 big oak timber, 20 acres apples 9 yrs. old, 250 peach trees, nice garden, on main road. If set to fruit solid would sell for $20,000. My price $2,700.

160 McDonald Co.., Mo.. 2½ miles fine shipping point; 40 cultivated, 300 12-yr. old trees assorted, 500 3-yr, old apple and peach trees, 4-room house, barn, 5 wells, spring; beautiful laying land. Should be all set to fruit. Price, $1,600.

80 acres Lawrence Co., Ark., 2½ miles R. R. town, 1,400 apple, 300 peach, 400 plum, 200 cherry, 85 pear, all 6 years old, ½ acre strawberries, and vineyard, 8,000 grafted peaches in nursery row; house, barn, cellar, fine spring. The price—am ashamed to tell you—only $2,000, ½ cash.

These are samples—640 acres fine fruit land all in big open timber, 5 miles R. R. town, only $4 per acre. Write me for what you want. I have them.—LOTT, "The Land Man," 127 W. 8th, Kansas City, Mo.

For Sale or Exchange
Will sell 80 acres, 8 miles south of Kansas City, for $12,000 and take first-class residence or city property for $6,000. This has 20 acres of fruit, mostly apples; it has pears, peaches, plums, cherries and blackberries. Fine land, but poor improvements. Land two miles north selling at from $300 to $500 an acre.

J. H. LIPSCOMB
305 Fidelity Trust Company Bldg. Kansas City, Mo.

WANTED—A practical fruit-grower as partner and manager of a large fruit farm. Small capital required. Address W. J. S., 4043 Juniata St., St. Louis, Mo.

Own a Fruit Farm
In the Famous Fruit Belt of Michigan

The greatest Fruit Belt in the world! Good soil. Healthful climate. Pure water. Gently rolling slopes. Excellent air drainage. All the finest varieties of peaches, plums, apples, pears, cherries grapes and berries grown in abundance.

We control thousands of acres of wild lands along the line of the **Pere Marquette Railroad** in the **Lower Peninsula of Michigan**, especially adapted to fruit culture and located convenient to Grand Rapids, Chicago, Detroit and Milwaukee markets.

If you want to secure reliable information regarding this "Fruit Belt Region of Michigan,' write us.

Michigan Land Association
MANISTEE, MICHIGAN

$15 TO TEXAS AND BACK

"The Texas Train" now leaves St. Louis 5 p. m. daily. The time to Texas has been considerably shortened and the service has been improved. Through sleepers are carried to Pine Bluff, Shreveport, Texarkana, Dallas, Ft. Worth, Corsicana, Waco. The Waco car is one of the new excursion sleepers put on for the World's Fair. Clean, cool, easy riding and just half the standard sleeper rate. New reclining chair cars and dining cars operated by this company. It's a fine train and reaches direct or makes close connection for all Texas points, also southwest Louisiana.

Round trip home-seekers' ticket first and third Tuesdays of each month, one-fare plus $2. August 9 and 23 and September 13 and 27, special round trip home-seekers' tickets to Dallas, Ft. Worth, Waco, Houston, Galveston, San Antonio, Corpus Christi, Amarilla, Quanah and intermediate points at rate of $15, stop-overs both ways, 21 days return limit.

Write us for full particulars, time tables and descriptive literature.

E. W. LaBeaume
G. P. & T. A.
Cotton Belt Route ST. LOUIS

Big Horn Basin

The Burlington Route has published folders descriptive of the Big Horn Basin, South Platte Valley, and the Nebraska grazing country.

These sections offer rare opportunities to the ranchman, farmer and investor.

Folders giving valuable and reliable information will be sent free on application.

R. H. CROZIER, D. P. A.,
Burlington Route.
St. Joseph, Mo.

OUR SPECIALTIES

APPLE, PEAR and FOREST TREE SEEDLINGS. APPLE and PEAR GRAFTS for the planter as well as the nursery trade, also a FINE GENERAL STOCK OF TREES AND PLANTS at very favorable prices. Get our prices. General catalogue on application.—J. A. GAGE. Beatrice, Neb

A man 37 years of age with 15 years' experience in raising small fruits wishes a position as working foreman or manager. Having sold my farm, wish to move West or South.
Box 84, Darien, N. Y.

Make your own Fertilizer at small cost with
Wilson's Phosphate Mills
From 1 to 40 H. P. Send for catalogue.
WILSON BROS. Sole Mfrs., Easton, Pa.

The Perfection Currant.

Last winter The Fruit-Grower made mention of this new currant, which is the first fruit to receive $50 Barry gold medal, awarded through the Western New York Horticultural Society. At that time we had never seen the fruit, but recently C. M. Hooker & Sons, Rochester, N. Y., introducers of this new currant, sent us some sample bunches, which were very fine, indeed, and the Perfection is certainly worthy the Barry medal which was awarded it. Fruit is very large, of a beautiful red color. Bunches short and full; quality first-class in every way. It is seldom a new fruit is worthy the high praise it receives on every hand, for there is always a tendency to exaggerate, but we believe the Perfection currant comes up to every claim made for it. It is certainly a fine thing, as shown by the specimens we received ,and it will doubtless be largely planted.

The Famous "Malakoff" Wheat.

Ratekin's Seed House, Shenandoah, Iowa, reliable in every way, added largely to their high reputation by introducing "Malakoff" wheat, which they sell at $2.00 per bushel, and Turkish Red, at $1.50. These winter seed wheats are the best on the market. "Malakoff" is a Russian wheat from Odessa, the seaport in the Black Sea. It originated in the Crimea, and is a magnificent compact grain. The Russians grow this wheat extensively, and a line of steamers carries all the surplus in bulk to London. In quality, weight, condition, and grade it surpasses all other wheat delivered at that great city. The Ratekin seed farm has taken select seed of this famous Russian production and by cultivation and breeding improved upon the parent stock. It is practically a "bonanza" wheat, but they are not asking bonanza prices for it. "Turkish Red" is a bearded, hardy variety, is strictly iron-clad, absolutely free from rust, and withstands all unfavorable conditions. The Iowa Agricultural College obtained best results from this wheat ten years running. At Ratekin's you get this wheat to perfection. Notice the advertisement and address RATEKIN'S SEED HOUSE, Shenandoah, Iowa.

Spalding's Commercial College.

Spalding's Commercial College, Kansas City, Mo., has just published a quarterly edition of its free College Journal of twenty-four pages, devoted to the interests of business education. It contains a biographical sketch and photogravure picture of its founder and president, several views of its large and elegant College rooms, also cuts of some of the silver and bronze medals awarded for its beautiful penmanship for over twenty years at the county and interstate fairs. It also contains full and complete descriptions of the commercial, shorthand typewriting, telegraph and English courses of study of its experienced faculty of sixteen teachers and lecturers, and of the beautiful diplomas awarded its graduates. In addition to this it also contains letters of the highest literary indorsements from Prof. J. M. Greenwood, LL.D., superintendent of city public schools. Professor W. H. Johnson, superintendent of Jackson county schools; Professor W. H. Williams, principal of the Bryant public school, together with numerous other highly commendatory letters from recent graduates holding lucrative positions in Kansas City, Mo., and elsewhere. It also contains information in regard to its free employment bureau, which has placed, during the past thirty-eight years, thousands of its graduates and former students in good positions in Kansas City, Mo., and elsewhere, and which is now many times unable to supply the demand for help which often averages ten calls per day.

Fertile Valley of the Mississippi.

While it is true Oklahoma, Indian Territory and Texas invite the Homeseeker and others in search of a profitable investment and business competency, there is another field along the Frisco System quite recently opened to those interested in a personal betterment of financial resources.

On June 1st, the line of railroad heretofore known as the St. Louis, Memphis & Southeastern (now Frisco System), was extended to St. Louis, thus making a territory in Missouri and Arkansas, along the west bank of the Mississippi River, accessible by way of St. Louis.

The present service consists of passenger train leaving Union Station 7:10 a. m. daily, for Cape Girardeau, Luxora, Carruthersville and intermediate points to Memphis, also the Cape Girardeau accommodation (daily), leaving Union Station 4:20 p. m.

Some years since, perhaps a quarter of a century, this section was avoided by reason of want of development or progressiveness; now, however, it is considred equal, as the homeseeker and investor may measure, to Oklahoma, Indian Territory or Texas. The change in condition throughout was accomplished by large governmental expenditure, a progressive people and extended railroad facilities promoted and maintained by the Frisco System, operating, as it does, nearly 700 miles of railway in the immediate Mississippi Valley, less than 300 miles distant from St. Louis.

The soil is exceedingly fertile, crops invariably abundant, timber interests extensive and resourceful.

Those desiring additional particulars will receive immediate response.

Address,
Passenger Traffic Department,
FRISCO SYSTEM,
SAINT LOUIS.

Young Men Wanted.

Young men should consider the increasing demand for the service of competent veterinarians needed everywhere. High values in live stock justifies men in contemplating a course in a first-class Veterinary College. The government cannot secure a sufficient number of competent veterinarians for service. Young men should look into this. The Kansas City Veterinary College affords young men the greatest opportunities in preparing for this service. Send for free catalog. Their ad appears on page two.

It is difficult to imagine any excuse that's good enough for not owning an O. K. Washing Machine. The family washing, a big one, is done in an hour. It formerly took the best part of the day. It is almost no labor to operate it. A young boy or girl can turn it. There's no bending over the machine or breathing the fumes. Compare that with the old way—hours of bending over the tub, nostrils constantly in the hot steam over suds and dirty clothes, the ceaseless rub, rub, rub, and the killing backache. Surely the H. F. Bramer Mfg. Co. is a woman's benefactor. They make the O. K. and two other washers, the O. I. C. and the Original Brammer. These are the outcome of twenty-five years' experience in building washers. They have brought the matter down to a point where no family can afford to be without one of their machines. A book giving particulars will come promptly if you write direct to the factory. Address them at 0000 Rockingham Road, Davenport, Iowa.

One of the few railroad companies that owns and operates the sleeping cars in service on its lines, is the Chicago, Milwaukee & St. Paul.

The sleeping cars on this line were formerly Pullman cars, operated by the Pullman Company, but for a dozen years past the railway company has owned and operated the sleeping cars, a departure from the old standard pattern of cars has been made to the extent of adding about six inches to the width and height of the sleepers. This permits of wider and higher berths. Length has also been added to berths, so that comfort is found in them which is lacking in ordinary sleeping cars.

These large cars are in service on practically all of the lines of the St. Paul Road, and are very popular with the traveling public.

Need a Fruit Picker?

On page 4 of this issue appears the advertisement of W. S. Morgan, Hardy, Ark., who has a fruit picker which is said to be one of the very best of these devices. The illustration in the advertisement gives one a good idea of the picker and how it works. Those who have large trees, with fruit on ends of limbs or in other inaccessible places, should write to Mr. Hardy at once in regard to this picker. When you write, please mention The Western Fruit-Grower.

A Good Farm for Sale.

Just north of St. Louis, along the Mississipi River hills is a most excellent fruit country, close to market, with good soil, elevation, etc. James M. Rogers, Elsberry, Mo., has a valuable farm in this district, which he offers for sale in our "Farms for Sale" columns this month. The farm is in good condition, is well located, and is offered at a low price. The health of Mr. Rogers' wife makes a change necessary and for that reason the place is offered for sale. Those who are looking for a good location to engage in fruit growing, or in dairy farming, or in farming of any kind, will do well to look up this offer on the part of Mr. Rogers.

Husking Bands, Pins and Hooks.

As corn-husking time approaches there is increased interest in husking hooks and pins, and therefore the advertisement of R. F. Clark, 100 Lake street, Chicago which appears elsewhere in this issue, is timely. Mr. Clark makes all kinds of husking pins, hooks and bands, which can be purchased through local dealers, or if the latter does not keep them, can be ordered direct. The circulars of this firm show many patterns of these goods, which will suit all tastes. In addition to this line, Mr. Clark makes a "Palm" which will protect the hands in all kinds of rough work. This article is advertised in a separate place in this issue. We recommend that our readers read these advertisements carefully and send for circulars describing the goods more fully. If this work is attended to at once, things will be ready for the corn-husking season when it arrives.

Young Men This Is Your Opportunity.

If you wish to earn a salary from $1,200 to $3,000 a year, your attention is called to the advertisement on page 12 of the Western Veterinary College of Kansas City, Mo. Write them today for a catalog giving full particulars, at the same time mentioning where you saw the ad.

Special Summer Tourist Rate to Detroit, Mich.

The Chicago Great Western Railway will sell round trip tickets at one fare plus 2.00. Tickets on sale daily. Good returning until October 31st. For further information apply M. F. Montgomery, City Pass. & Ticket Agent, 414 Felix St., St. Joseph, Mo.

Maher & Grosh, Toledo, Ohio. I have used your knives for fifteen years. They are all that you claim for them. F. M. WALLACE, Raedersburg, Mont.

If you want a good knife, see the ad of Maher & Grosh, Toledo, Ohio, elsewhere in this issue.

Tourist Rates.

The Frisco System will issue, during the Summer months, Tourist round-trip tickets to various resorts and locations —the Mountains, Lakes and Seashore, at greatly reduced rates, with ample return limit.

Call on nearest agent, or address
Passenger Traffic Department
SAINT LOUIS.

Notes.

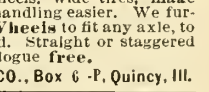
A letter from the DeLoach Mill Mfg. Co., Atlanta, Ga., calls attention to the fact that Mr. A. A. DeLoach is the original patentee of the variable friction feed for saw mills, and that the company named are the sole manufacturers under this patent, and are prepared to institute proceedings against any infringment of this patent.

Rev. R. Vallquist, Hoffman, Minn., writes that he would like to hear from nurserymen who have a line of stock suitable for that climate. We would recommend that he correspond with some of the horticultural workers of Minnesota who are doing so much for that Northern country.

G. W. Hoover, secretary of the Farmers' Club at Glenwood Springs, Colo., writes that the directors of the fair ,to be held at that place Sept. 22 to 24, would like to have exhibits from manufacturers of farm and garden tools and especially from manufacturers of power spraying outfits. Mr. Hoover says there is much interest in power spraying outfits and the firm which exhibits a good machine will make many sales.

W. R. Eastman of Coin, Iowa, who has attended agricultural college for two years, writes us that he would like to secure a position with some good orchardist, so that he can work with practical men and gain practical experience. Any of our readers who are interested should address W. R. Eastman, care C. H. Henderson, Coin, Iowa.

FARMERS HANDY WAGON



Low steel wheels, wide tires, make loading and handling easier. We furnish **Steel Wheels** to fit any axle, to carry any load. Straight or staggered spokes. Catalogue **free.**
EMPIRE MFG. CO., Box 6 -P, Quincy, Ill.

300,000 Acres of Wild Land For Sale

in the Lower Peninsula of

MICHIGAN

Michigan Lands are now CHEAP. The demand is rapidly increasing and they will soon double and treble in value.

Write for Circulars and Particulars.

Michigan Land Association
MANISTEE, MICHIGAN

Forest Tree Seeds and Seedlings

We have an immense stock of Tree Seedlings growing for fall delivery. Our specialties are: Catalpas, 3 varieties; Black Locust, Russian Mulberry, Box Elder, Ash, American Persimmon, Red Buds, Maples, Athea Rosea, Lindens, Beech, Birch, Yucca, etc., of which we have an immense stock and can give very low prices. Also collected Seedlings, Tree and Shrub Seeds, etc. Send for trade list.

Forest Nursery & Seed Co.
Irving College, Warren Co., Tenn.

POULTRY SUCCESS

The 20th Century Poultry Magazine

15th year, 32 to 64 pages. Beautifully illustrated up-to-date and helpful. Best known writers. Shows readers how to succeed with poultry. 50c per year. Special Introductory offers: 1 year, 25 cts., including large practical poultry book free; 4 mos. trial 10 cts. Stamps accepted. Sample copy free.
POULTRY SUCCESS COMPANY
Dept. 97, Springfield, Ohio, or Des Doines, Iowa

Itching Skin, Eczema

ALL SKIN DISEASES CURED

Send 6 cts. for Trial Treatment, Testimonials. W. Bullard, 317 Theodore St., Detroit, Mich.

No More Blind Horses

For Specific Ophthalmia, Moon Blindness and other sore eyes, **BARRY CO., Iowa City, Iowa,** have a sure cure.

WE WILL PAY $50.00.

for a case of Eczema, Piles, Pimples, etc., which we cannot positively quickly cure with the new Radium Remedy, Ec-Zine. Many cases are cured by the samples we send free. No money wanted. Write today. Ec-Zine Co., S, Ashland Block, Chicago.

THE BIG TREES OF CALIFORNIA.

Some months ago The Fruit-Grower published a letter from Dr. J. W. Greene, of Missouri, telling of a visit he had made to Luther Burbank. We have received the following letter telling of a visit he made to the big trees of California, and his interesting comments upon the trip. The letter was received some time ago, but this is the first opportunity we have had to publish it—but it is good enough to keep. He writes:

Since my last letter from the home of Burbank, I have visited about a dozen more of the Golden State's towns and fruit sections.

From San Francisco I jumped down the Coast Line railroad to San Louis Obispo, 250 miles south, and am working my way back to the greatest Pacific coast city. I am here at Santa Cruz, 100 miles south of San Francisco.

San Louis Obispo is in the northern end of California's burnt district, where less than an inch of rain had fallen in nine months, up to February 10th. For the first 100 miles out north from 'Bispo I didn't see green grass enough to feed a jack rabbit. Great numbers of cattle and other stock had starved to death. Little hay could be furnished; and the quarantine laws prevent the moving of cattle north to where they might be fed. Good yearling calves were selling at $5 to the few who could care for them. But since then they have had some rain, though by no means enough to secure crops. That is mostly a grazing section with some wheat and barley. The Coast Line from Los Angeles to San Francisco, five hundred miles, runs mostly through a sub-mountain and foot-hill country; and, excepting at either end of this line, gives one a poor idea of rich and lovely California, which is about 900 miles long.

Santa Cruz is one of the state's most noted sea beach resorts and boasts of the best all-year-round climate. In summer it is indeed a "tented city;" sought by thousands of people from the intense summer heat up the interior valleys and from Nevada and Arizona. It is also known abroad as being one of the homes of the Big Redwood Trees. I have taken a holiday here to go out, eight miles, on the narrow gauge to see the big trees that have excited the admiration of travelers from all the world; a variety of timber that grows only in California.

It is said, or thought, to be a cross between our common red cedar and some sort of pine or spruce. It is said to bear no seeds. Anyhow, be that so or not, I could find no seedlings in my six hours looking for them.

These forest giants and wonders have been written up so often that I don't presume much more could be added. And yet every visitor feels like he'd be an ingrate not to say something in their inexpressible honor.

In all my life I've never before so realized my lingual weakness as I do at the thought of expressing my reverential awe and awful reverence as I bowed my humble head at the feet of these most ancient of living land marks of all flora creation. The word worship conveys but a shadow of my feeling as I sit in silent meditation at the root of a tree that measures one hundred and ten feet in circumference, six feet above ground, and is said to be 360 feet high; a tree that was old old when Adam was "made."

Think of a tree five thousand years older than Christ would be if living! A tree that has lived through the ups and downs of successive civilizations before the Sphinx or pyramids of Egypt were thought of. According to accounts Adam was "made" only about five thousand years ago, while some of these California redwoods have over seven thousand annual sap rings—so it is said.

Enwrapt in speechless contemplation I wondered what of the world's lacking history these dumb old, old witnesses could supply. And from the sublime to the rediculous I could but contemplate the claims of science and wonder whether some super-ancient ancestor of mine may not have climbed the very tree that I looked upon in awe and dropped his useless prehensible tail right where I sat. (Such might have been the case if the silly popular misunderstandings of evolution were true.)

When I arose from my seat at the root of this the largest tree of the immediate group, "Cathedral," as it was named years ago by Colonel Bob Ingersoll, I dug up a little lone seedling strawberry plant and have sent it back to Missouri. It took one whole night of my "sub-conscious mind" to think out how to make $5,000 out of this visit to the big trees. I will get six thousand different readers of the Western Fruit- Grower to send me a dollar each for a name for this strawberry; the name to be the most appropriate for the berry when "tested." To get them interested I'll offer one thousand dollars for the acceptable name. The winner will get $1,000 and I'll get $5,000 net. To make it surely impartial the names sent in (with the $1) will be numbered without the contestant's name.

And of course all over $5,000 I'll give to The Fruit-Grower for advertising my new strawberry. To make it pay each name I'll (later on) give each contestant one plant, to breed "pedigreed stock" from, to sell to his or her neighbor.

Many an "originator" has made his stake on a less honest scheme than this, for I will claim only one (not "25") reason why people should contribute to me. You see, Brother Irvine, if I got but one in twenty of the 120,000 regular subscribers to The Fruit-Grower I'd get my needed six thousand.

This Santa Cruz grove contains 360 acres, forty of which is fenced with an up and down fence, two inches thick and sixteen feet high. This select forty acres will be sacredly preserved during the life time of a good old lady of eighty years. But unless the government or state buys the land only the stumps of this wonderful forest will be here for the next generation to wonder at.

Even while my guide showed me through this fenced part he called my attention to the sound of the woodman's maul "felling" similar trees not four hundred yards distant; felling them even for railroad ties.

To realize what this sublimest of Nature's works may look like after this old lady's death I had only to walk over a suspension foot bridge across the little San Fernando river and take a sorrowful look at "The Black Tombstone Cemetery." There on a single mutilated acre stand the charred stumps of 125 immense trees that were sacrificed a quarter of a century ago; evidences of our "great civilization."

Other peoples before us have come and gone, one race after another, worshipfully respecting God's grandest works; we have in sacreligous contempt destroyed this building of centuries for contemptible dollars.

When a dozen generations of the offspring of these covetuous vandals shall have been forgotten these 125 blackened monster stumps will yet be in existence, unless blown out to cry aloud against the wanton wickedness of their ancestors.

As a fit rebuke to these destructive woodmen of years ago there lives, in an insane old French hermit, who lives on charity and spends his life in a little hut, among these black stumps, soliloquizing of the wickedness of the men who would fain rob the Creator of his glory on such grand creation.

While I couldn't understand much of the man's talk I could interpret, "Sacra nome de Dieu" (dam 'm in the name of God). Further I could comprehend his energetic scathing eloquence, now pathetic and then vindictive, as, regardless of my presence, he preached to the black tombstones of the once mighty towering redwood trees.

If Dowie is "Elias II," then this venerable old dweller among the tombs must be Apostle Paul II; as he is the very likeness of the bald-headed, bowlegged St. Paul we see in the paintings of the "Masters."

The big trees are named for various noted Americans. One is "General Fremont." In the hollow of this tree he made his headquarters, awhile, in 1846, when on his memorable "path-finding" trip that made him the first presidential candidate of the Republican party—in 1856. In 1888 the general returned, with his wife and daughter, to visit his old home in the hollow tree of Santa Cruz, and I have a photo of him as he stood in solemn meditation, leaning against the tree that had made no noticeable change in forty-two years, while he had grown old; old in what was but a day to the tree that had sheltered him and his companions of youth.

No noticeable change, only his smoke hole and window had closed up by new formation. It is said the brave old general wept bitterly as his lips refused to tell of his companions all gone, excepting from his lone memory.

Well, how I have wandered off from the theme perhaps more interesting to fruit-growers. On that subject I'll hurriedly remark that here is the home of the Logan berry, though not really its birthplace.

It has been planted so extensively in this section of the state, and has proven so productive that many fields of it have been cleaned out, for want of market.

While over-production may have been the main cause for reducing the acreage I suspect another one. The berry is too sour for many people; then its somewhat muddy color works against it. I'm fruiting some at Eden Greene this year. I'm eating lots of fine, seedless persimmons, as big as Winesap apples in the name of the readers of The Frult-Grower. Goodbye.

J. W. GREENE.

A Pleasure To Answer Questions

Write, or call, and I will tell you what the cost of a ticket is to any point east, west, southwest or northwest. I will also let you know the best way to reach it, when you will arrive, whether or not a change of cars is necessary, and why you should take the Rock Island System.

The finest sleepers Pullman could build are now in through service between St. Joseph and Chicago via the Rock Island. Leave Union Station every evening at 7:05 o'clock.

Rock Island System

JOHN J. GOODRICH,
City Passenger Agent
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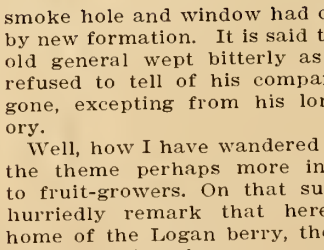

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Poultry Department

Producing Early Molting of Hens.

The process of molting is a severe drain on a hen's vitality, and it covers such a long period of time that the production of eggs is almost entirely stopped. Poultrymen are interested in any plan which will shorten the time of molting, and also in any plan which will hasten the beginning of the molt, so that hens will be ready for egg production in early fall, when higher prices usually prevail. Winter eggs are the ones which bring the most money, and they cannot be secured unless the hens can be brought to a condition of having finished their molt, and are ready for business.

The West Virginia Experiment Station calls attention to the fact that in case molting is much delayed the production of the new coat of feathers in cold weather is such a drain on the vitality of the fowls that few if any eggs re produced until spring, while if the molt takes place early in the season the fowls begin winter in good condition, and with proper housing and feeding may be made to lay during the entire winter.

The station reports tests on two-year-old Rhode Island Reds and White Leghorns of the Van Dresser method of promoting early molting, which consists in withholding food either wholly or in part for a few days, which stops egg production and reduces the weight of the fowls, and then feeding heavily on a ration suitable for the formation of the feathers and the general building up of the system. Beginning August 5, the chickens received no food for thirteen days except the very small amount they could pick up in 15 by 100 foot runs. They were then fed liberally on mash, beef scraps, corn, wheat and oats, i. e., a ration rich in protein or nitrogenous matter, which is believed to be especially valuable for promoting the growth of feathers as well as muscle.

The hens stopped laying on the seventh day. Thirty days after the test began the Rhode Island Reds had practically a complete coat of new feathers, had begun to lay, and within a week from that time one-half the hens were laying regularly, while another lot of Rhode Island Reds which had been fed continuously, were just beginning to molt, and the egg production had declined materally. The White Leghorns were a trifle slower in molting than the Rhode Island Reds, but otherwise the treatment affected them in a similar way.

The results seem to warrant the conclusion that mature hens which are fed sparingly for about two weeks and then receive a rich nitrogenous ration molt more rapidly and with more uniformity, and enter the cold weather of winter in better condition than similar fowls fed continually during the molting period on an egg-producing ration.

Guinea Fowls for Farmers.

A writer in the American Agriculturist makes a plea for guinea fowls on the farm, as follows:

"The guinea hen, both as a useful and ornamental bird should have a place on every farm. The only objection usually made against them is on account of their noisy outcries. One soon becomes accustomed to their peculiar music and hardly notices it or disregards it on account of their many desirable qualities. They are attractive to the sight, amusing in their habits and actions and by many the flesh and eggs are considered superior articles of diet. Their flesh is dark and much like that of the prairie chicken. Their eggs are fully equal to those of the common chicken, differing only in having a less quantity of albumen. They begin to lay the first warm spring days depositing their eggs in any convenient hen's nest and later when vegetation is advanced, they secrete their nests, which are often found to contain from 50 to 100 eggs each. Some of them will not choose individual nests, and if turkeys are kept with them it is frequently the case that guineas will be hatched by them, four weeks being required to hatch both sorts of eggs. Guineas usually hatch their broods about the last of July and require no care or attention if they have sufficient run. The mother hen at this time is very shy and it will only be by accident that you see her, closely followed by her brood of twenty or more chickens. Their food at this time consists entirely of insects, of which they destroy surprising numbers. One morning in September six young guineas were shot and in cleaning them their crops were found completely extended with grasshoppers, each crop containing more than half a pint."

It is surely true that for the number of chicks hatched and taken care of, when left to herself, the guinea hen is a close rival to the quail.

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Questions and Answers

(Continued from Page Seventeen.)

J. G. P., Jacksonville, Ill.—Please tell the difference between what is called the hedge row and the matted row for strawberries. In setting them should they be set the same distance apart and the same distance in the row?

Answer.—The difference consists in the width of row which is allowed to form. In the hedge row, the plants are not allowed to set many new plants, and these are placed by hand, to secure a narrow row, with the plants well distributed in same. In the matted row the plants are allowed to make as many runners as they will, making a "matted row." The difference between the systems is well indicated by the names which have been given—"hedge row" and "matted row." The plants in the hedge row are set closer together than in the matted row, for in the latter the plants are allowed to form more runners. The hedge row will produce larger berries, but perhaps not so many of them per acre.

—

J. R. T., Harriman, Tenn.—Can shingles be made more durable by dipping them in any kind of liquid? Also, can I treat shingle nails, to prevent their rusting out?

Answer.—A number of preparations are advertised, which are claimed to make shingles more durable. Any dealer in paints can likely furnish this information; also as to the shingle nails.

—

C. W. C., Willow Springs, Mo.—Will you kindly ask through The Fruit-Grower if any of the readers have had any experience with the sand vetch, and how they raise it for hay? Will it re-seed itself?

Who has had experience and will answer this question?

—

H. B. N., Matchless, Wis.—What is the best method of propagating and improving the apple? Has budding any superiority over grafting, and if so, why? We find grafting referred to in the Bible. What relation does it sustain to our methods of changing the varieties of fruits?

Answer.—We fear our reader has a wrong idea of the purpose of budding or grafting. Neither is done, primarily, to improve the varieties of fruits, but simply to propagate a given variety and to keep it true to its type. As to which is the better method of propagating the apple, opinions differ, but for Northern localities, unless the stocks on which the varieties are to be budded are known to be perfectly hardy, grafting will doubtless be the better method of propagation.

—

J. W. R., Miamisburg, Ohio.—Who is the originator of the Elberta peach? At what price did the originator dispose of it?

Answer.—The Elberta originated in Georgia, we believe in the orchard of Mr. Rumph. We do not know how the original stock was disposed of, nor at what price.

—

W. I., Kansas City, Mo.—I am a city farmer—that is, I have a garden and a few fruit trees and a strawberry bed in my back yard. I have to pay to have manure hauled, about 75 cents to $1 a load, and I have wondered if I could not more cheaply fertilize by using packing house fertilizer. How about this? I want to experiment by using this fertilizer on my strawberry bed anyway. The plants were set this spring, on good soil. Now, I want to distribute commercial fertilizer along the rows, cultivating it into the soil, and desire to know how much complete fertilizer to use. The formula I have is the same as the one prepared by Armour & Co., for use by the members of the Missouri Horticultural Society. Don't say how much per acre to apply; I have only a few rows of strawberries, plants set in rows three feet apart, with plants 18 inches apart in row. Most runners will be kept cut off. Now how much of this fertilizer, by weight or by measure, should be used for each of these plants, which are now well established?

Answer by Dr. Whitten: As to whether stable manure or commercial fertilizers will be most profitable to use in the garden mentioned depends very largely upon the texture of the soil. If the soil already contains abundant humus—that is, if it is a fine, mellow mould which does not bake, it is probable that the commercial fertilizers will prove most satisfactory. In case the soil has little vegetable mould in it, no doubt the manure will give the best satisfaction for a season or two, until the soil gets well mellowed and spongy by the addition of organic matter. For present use it might be safest to recommend that the land be occasionally manured, say, every few years, and that the commercial fertilizers be used in the intervening years. Commercial fertilizers will unquestionably add the necessary plant food, but they do not so fully take the place of necessary organic matter in the soil which makes the soil spongy, mellow and retentive of moisture. For young growing season, will be sufficient. It is not best to put it in a pile at the roots of the plant, but to spread it around over the area where the roots strawberry plants just set out, a tablespoonful of complete fertilizer to each plant, applied about twice during the of each plant are spreading and work it into the soil with a cultivator, garden rake, hoe, or such other implement as is used for cultivation.

—

C. H. C., Kangly, Ill.—I would like a little information in regard to blackberries and raspberries. How does Ancient Briton, and Eldorado compare with Snyder, in regards to size, hardiness and productiveness. Also the season. (2) Do you think it best to pinch off the shoots of blackberries when two feet high, and raspberries the first year at twelve inches? Some advocate this method and others say, no, as it has a tendency to make too many small branches and are liable to get winter killed. (3) Do nurserymen tie up raspberries as we do grapes? (4) How do Haymaker and Cardinal compare with Columbian, as regards season, size, productiveness and hardiness? Will Senator Dunlap strawberry fertilize kinds as late as the Enormous, or do you need some as late as the imperfect ones? How are the reports of the Mercereau blackberry?

(1) I have not seen the Ancient Briton and Eldorado blackberry grown commercially in this state to a sufficient extent to say how they will compare with the Snyder. In certain sections these varieties are now doing well and it is at least worth trying them in Missouri. At the present time, however, the leading growers regard the Snyder as being our leading commercial berry for this state. (2) The general plan is to pinch back the young shoots of the blackberry when they have reached a height of 2 to 2½ feet, so as to cause them to branch well from the ground up. Raspberries are pinched back in the same way to cause them to branch well, except that the pinching is done when they are from 20 to 24 inches high. Some pinch them when the young canes are shorter than this, say, 12 to 14 inches. (3) It is not customary in commercial planting to tie the berries to trellises, though in private grounds where only a few plants are grown, this practice is sometimes satisfactory. It requires too much labor and expense, however, to do it generally on a commercial scale. (4) I am not much acquainted with the Haymaker, but the Cardinal raspberry is a good one; so is also the Columbian. In making a planting of blackberries it is well to plant the leading commercial sorts first and then to try the leading new varieties on a small scale at first and finally enlarge the planting with those varieties which do best with one variety and some with another. In planting the staminate strawberries to fertilize the pistillate sorts, it is best to plant together those varieties which blossom at the same time. The blossoming time of berries varies slightly in different sorts and localities, and it is best for each man to work out the combinations for himself by observing his own berries and their time of blossoming under his conditions.

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The Western Fruit-Grower

An Illustrated Monthly Magazine For Progressive American Farmers

Volume Fifteen | ST. JOSEPH, MISSOURI, SEPTEMBER, 1904. | Number Nine

Irrigation With Windmill

Recently there have been many requests for information concerning the irrigation of fruits in localities where there is either a deficiency of rainfall, or where the rainfall is apt to be not properly distributed. The Fruit-Grower has no better information on the subject than an article which was published last summer in our columns. This article told of the experience of Mr. Geo. A. Steele of Callaway, Neb., who has grown fruits profitably in localities where other persons had told him fruits could not be grown. The issue in which this article appeared is now out of print, and as this issue of The Fruit-Grower will reach thousands of persons who did not see the article last year, we have reprinted the article by Mr. Steele, knowing it will not hurt the regular readers of the paper to read it again. Mr. Steele's experience is not unusual, but it tells how a determined man can succeed where others have failed. Mr. Steele's article follows:

I gave my first year's experience with windmill irrigation in The Fruit-Grower some months ago. The second year I increased the amount of land under irrigation, and since then I have successfuily irrigated two acres of garden and fruit with an eight-foot Aermotor mill and a six-inch irrigation pump. I have never had any serious lack of water, although some times I have felt very anxious to have the wind blow. Nearly all the plot is set to fruit trees and I raise vegetables and small fruits between the rows of trees.

Since the first year moles and mice have worked in the banks of my reservoir and caused considerable trouble and loss of water. I have tried cementing the walls on the inner surface with only partial success; willows, rushes and water grass have got such a foothoid that even when the banks are well cleaned off and a thick coat of cement applied, the growth of vegetation will soon force up the cement in great chunks. I have thought of building a reservoir with plank sides and earthen bottom, the bottom can be puddled so as to hold water very satisfactory.

At first my only way of letting out water from the reservoir was through a plank box six by eight inches square extending through the wall of the reservoir with a leather faced plank door on the inside, but I found it very difficult to prevent loss of water by leaking.

I now have two outlets, one a six-inch galvanized iron pipe to let water into raised earthen ditch, and one four-inch duck hose. I got a blacksmith to make gates with levers attached and with holes drilled through the gates so I could bolt on a piece of soft leather a little larger than the inside of pipe. I find this much more satisfactory than any board arrangement I could conceive.

I have also found that duck hose is much more saving of water and labor than an open ditch. I got my first idea of home-made hose and connections from articles in The Fruit-Grower. For a four-inch hose I use number four sail duck 30 inches wide: it costs me 32c per yard.

I cut in two in the middle, double under the raw edge a trifle, fold over even with the selvage edge, sew up the seam on a sewing machine with number 30 thread. I sew two rows of stitching, quite near the edge, or the hose will not be quite four inches; have never had any trouble with its ripping or leaking where joined together. Some water will seep through the duck at first, but the cloth will soon get soaked so very little water can get through. The best way to connect two pieces of hose is to have a short length of pipe of same size as hose, draw ends of hose over each end of pipe and fasten securely with a strap or cord.

It is very convenient after setting out a few rows of cabbage or strawberries to be able to run water down the rows; not very much danger of a poor stand under such conditions.

During the summer of 1901 when there was such a general complaint of a poor stand and a short plant crop, I got a perfect stand, a fine growth with an abundance of plants.

In the spring of 1902 I had one-half an acre of strawberries ready to bear, they had been covered all winter with coarse stable manure; when uncovered in the spring I found there were millions of cut worms ready to take the new growth as fast as it came. I did not know what to do, but I at last got hold of how to poison. I mixed one pound of Paris green with one bushel of bran and a gallon of sorghum, using enough water to make it into a stiff dough. I took a big pail of the mixture and walking along the row would drop a table-

"FRUITS OF IRRIGATION."

spoonful about every eighteen inches. I did not have much faith in the application and did not go over but half of the bed at first; the next day I began to look for dead worms and had no trouble to find hundreds of them, so I immediately prepared the material to go over the rest of the strawberries and such vegetables and plants as the cut worms were working on. I can pronounce the remedy an unqualified success. I had no more damage to speak of.

Some may think it wrong to put out poison where the birds can get it, but I did not find a single dead bird. I am a bird lover and a bird protector, but I certainly think that whenever crops are assailed by worms or insects that we can kill by the use of poison, we are justified in so doing, even if it should result in the loss of a few birds.

Just to show how great a pest the cut worms were in 1902 I will say that thousands of acres of winter grain were destroyed or badly damaged. A few rows of my strawberries next to the prairie grass were so badly damaged that they only made about one-fourth of a crop and rest of the rows were badly damaged. Yet in spite of damage by worms and a further loss by hail storm right in the height of the season, I picked 1,850 boxes from one-half an acre.

One store in town took all my berries at $2.60 per crate. They were fine berries for any country. People from the East and South where they are supposed to raise fine fruit, often remarked, "What beautiful berries."

Last winter after the ground was frozen I covered my strawberries with hay and straw. About one-half of the bed I did not get covered until we had a snow of about ten inches. I spread the straw as evenly as possible on top of the snow. I left the covering on as late as safe in the spring. I could find ice under the straw for two weeks after the corn fields were in shape to put in wheat. My vines were late in blooming and but very few blooms were open when the hard freeze the last of April came, so I lost but a very few berries by frost. As a result of plenty of water last fall and good protection, they blossomed and set very full on account of an unusually wet spring. I did very little irrigation before the berries began to ripen, which was about the first of June; after that we had nearly three weeks without rain. I began to use all the water I could get before it was seriously needed, and although we had less wind than usual during a dry spell, I got over most of the patch before there was much loss from drought. The chinch bugs did considerable damage, but fortunately they did not spread very much until the season was nearly over. Wherever they did show up in any considerable number in just a day or two the fruit stems would lop over and the berries ripen prematurely and be small and withered; a good many were not fit for market.

June 23 we had a very heavy rain; the creek raised enough to cut out part of my dam and there was enough hail to pound up the vines so as to do considerable damage. For four days after the storm we were obliged to sort all the berries as we picked them; we sorted out twelve crates; we sold four crates for canning and used the balance ourselves.

We picked in all 3,480 boxes from two-thirds of an acre. The same store took my crop that did last year and paid me $2.65 per crate.

So far I have used the matted row system with a rather wide row, but I think in the future I shall use a narrow row, as I have found it difficult to get a wide row well soaked while the mulching is on and only the outer plants derive any benefit from the mulch.

My experience would not be worth relating if I lived in Eastern Nebraska or Kansas, but conditions have been such here for years that people had given up trying to raise strawberries. A good many have been encouraged by my success to prepare a small plot at least, where they can water it. I sold plants to a number of different ones last spring and I think there will be a still larger number planted next spring. I have tried a number of varieties of strawberries, but so far have found nothing to equal Bederwood and Warfield. If Warfield was perfect flowered I would plant nothing else.

The Clyde starts out very promising, but never gives many berries at picking time. The Brandywine is a fine berry, but the plants do not seem to thrive in our soil and climate. Mt. Vernon and Enhance are both very vigorous growers and give some large fine berries, but have never yielded for me near as much as Bederwood and Warfield. I thought this year there would be a good crop and probably there would if they had not been late so the hail storm injured them just as they were fairly started ripening. The Enhance has the peculiarity of ripening a few berries late in the fall; late last October, after hard frosts, we had a nice mess of berries.

I can not raise raspberries without winter protection and that requires too much labor to grow them on a very large scale. Laying down and covering with dirt I have found most successful,but last fall I pruned back close and covered the rows with damaged hay; it proved just fairly successful with Kansas and Conrath black caps, but the Loudons were nearly entirely killed.

I am having pretty good success with Lucretia dewberries. They require winter protection and I have

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We hope every member of "The Family" who appreciates The Fruit-Grower, will make an effort to send in at least one "block of five" between now and spring. A subscription blank is enclosed for this purpose and sample copies will be sent on request. Show The Fruit-Grower to your neighbors who grow fruit and a block of five may be secured in short order.

The Fruit-Grower Co., St. Joseph, Mo.

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To every reader whose date tag reads "Oct. '04", or farther back, we are this month sending a letter with a notice of delinquency. We hope all in arrears will remit promptly, or notify us if paper should be discontinued. **Remember,** that you may send in your own renewal and **four new names** in a block of "five for One Dollar." Address

The Fruit-Grower Co., St. Joseph, Mo.

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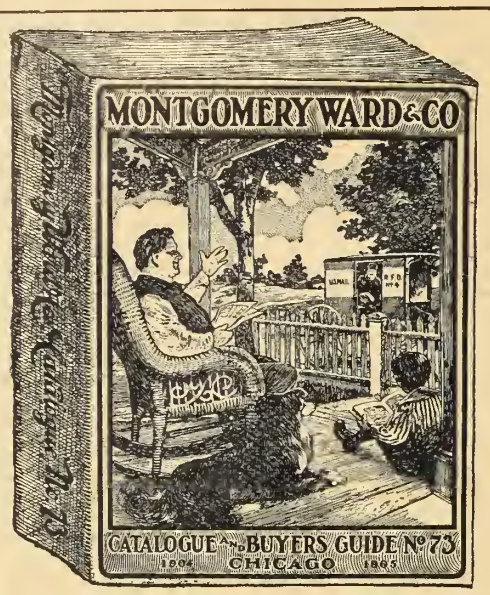

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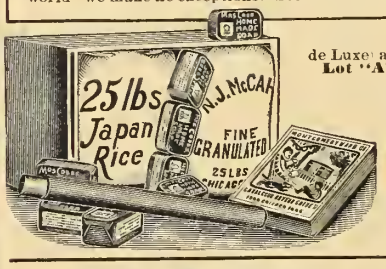

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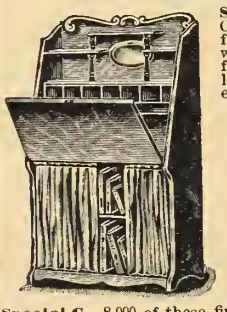

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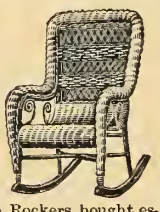

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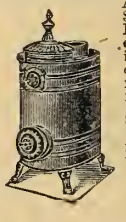

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not yet found just how best to cover them and when to uncover. I had thought that the best time to uncover was rather early before the buds had opened any. I uncovered rather early this spring and cold weather following, killed back a good deal of the tops; one vine I overlooked and did not uncover until quite late; it started to grow clear to the tips and I thought I had hit it now, but the last of April freeze killed it back worse than those uncovered early. I will have quite a fair crop of dewberries after all. I have been more successful in getting dewberries to grow when I let them put forth a new growth of five or six inches in the spring before I move them. Can in that way get a nearly perfect stand.

GEO. A. STEELE.

Callaway, Neb.

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I. J. Howard wants information concerning some varieties of apples which he knew when he lived in Missouri. He described them as follows: "No. 1 is what we used to call 'Sheepnose,' and was in nearly every orchard in Gasconade County in the 70s. It was a fine dark red apple, with some stripes on it; ripened in August; flesh white and mealy; finest sweet apple I ever saw. No. 2 was a sweet apple, about the size of Early Harvest, only it was flat and almost white until ripe, then it was as yellow as gold and as sweet as honey. We called it 'Honey-Core.' This apple ripened in July or August. Does any nurseyman grow these varieties now?"

The first was doubtless the Chenango Strawberry, which is grown by nearly every nurseryman. Some persons know it as Sheepnose. Who can recognize the description of the second apple?

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Mr. L. G. Wilton of Charlotte, Mich., writes that prospects are for a good crop of apples in that county. He says: "Apples are looking fine, with no scab upon them. I have 500 trees of Ben Davis, 100 trees of Grimes, besides Baldwin and Snow apples; have sprayed four times; orchard is twenty-five years old, well cultivated. There is a good opening here for a reliable apple shipper. Northern Spy apples are not plentiful this year, but other varieties are a good crop."

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O. F. Griffith, Cedar Falls, Iowa, sometime ago wrote us as follows: "I don't suppose any words of mine will affect in any way the standard of excellence of The Fruit-Grower, but I cannot forbear expressing my appreciation of your wonderful success, as exhibited in the January number. A whole volume of rich horticultural lore, and all for 4 cents, beats anything on record. I take and read other journals, but The Fruit-Grower is my life in horticulture; count me as a life subscriber. Cannot do without it."

⚜ ⚜ ⚜

On Tuesday, July 19, the Central of Georgia railway hauled an even 100 carloads of peaches from the South Georgia district. This breaks all records for one day's business. Up to July 16 this road had hauled 1,360 cars of peaches, more than double the record for last year's entire Georgia crop.

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"I herewith send $1 to renew my subscription for three years. This is part of my profit from one acre of strawberries, from which we picked 4,110 quarts, and sold them at home from $1.75 to $2.40 per crate."—J. L. Patterson, Baldwin, Ill. (How is that for a yield for 1904?)—Editor.

⚜ ⚜ ⚜

"I am much pleased with The Fruit-Grower, and get a lot of good, useful information from it. It is the only paper I take that deals exclusively with fruit culture, and I am glad it does deal with merely that one subject."—Francis S. Wallbridge, Belleville, Ont.

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Georgia Horticultural Meeting.

The twenty-eighth annual session of the Georgia State Horticultural Society was held at Tallulah Lodge, Ga., Thursday and Friday, August 4 and 5, 1904. There was a good attendance, although but few members from Northwest Georgia were able to attend, that section being in the midst of its Elberta shipment. Northwest Georgia supplies about two-fifths of the entire peach shipments of the State, the record for this season being some 3,800 cars, of which Northwest Georgia contributed about 1,600 or 1,700. The total falls some 700 cars short of the estimate at the beginning of the shipping season, though much larger than ever before.

President Prosper J. Berckmans was detained by important business and could not be present at the session, and Vice-President W. D. Hammock presided in his place. There was an excellent exhibit of fruit. Some 75 varieties of peaches were shown, the Georgia Experiment Station alone displaying 63 varieties. There were over 140 varieties of grapes and 30 varieties of apples, those from Habersham county being especially fine. Native plums were all gone except a few varieties of Americanas and Domesticas. Of Japan plums only Wickson, Satsuma and Apple were left. The Wickson were unusually fine—gigantic. Two eighty-pound watermelons were exhibited by M. B. Jones, of Thomasville.

Of new fruits attention was called to Kennesaw, Cornelia and Frances peaches. Kennesaw follows Carman, Cornelia ripens ahead of Belle and Frances after Elberta—the latter an especially large and fine yellow freestone.

With grapes Muench (one of Munson's) was suggested as a commercial successor to Concord and Niagara; bunches large and long, black; quality meaty and good.

Of the extensive program the following addresses deserve special mention: "Watermelons," by M. B. Jones, of Thomasville, Ga.; "Strawberries," by S. S. Smith, of Decatur, Ga.; "The Practical Enforcement of Bird Protection," by Prof. T. Gilbert Pearson, secretary North Carolina Audubon Society; "The Pecan in Georgia," by J. B. Wright, Cairo , Ga.; "The Past Year's Work," annual resume of work in the State Department of Entomology, by Prof. Wilmon Newell, state entomologist.; "Scale Control in 1904" by Prof. R. . Smith, assistant state entomologist; "Cultural Methods With the Peach," by Louis A. Berckmans, Augusta, Ga.

It developed that the lime-sulphur-salt wash has again given noted satisfaction both as a fungicide and as a scale destroyer. It seems to have proved as effective against peach leaf curl and brown rot (Scalerotinia fructigena) as Bordeaux mixture, and all that could be desired in scale control. Kerosene is now entirely a back number in this state.

The past dry season has not proved favorable to the development of brown rot, and peaches and plums were therefore unusually sound, but it seems to be the general consensus of opinion that Bordeaux, while not a preventative, yet exercises a marked effect in its control and its use is still recommended. Curculio is considerably less this year than usual. This is always the case with a heavy fruit crop. The opinion seems also to prevail that paris green is somehow a decided factor in reducing curculio when applied with Bordeaux mixture, though considerable doubt was expressed as to its efficiency. Jarring for this pest is not generally practiced by commercial growers.

A practical lesson was given on the value of thinning, especially with a heavy crop in a dry season. The fruit exhibited was uniformly undersized where thinning was not practiced.

Lady Thompson still seems the favorite main crop strawberry in this section, with Brandywine as a succession. Haverland and Bubach were also strongly recommended.

Location seems to be regarded as the main factor in frost control with peaches. Whitening the twigs with a whitewish spray as a second coat on either Bordeaux or lime-sulphur-salt sprayings seems to markedly retard bud development; but smudging is regarded as of doubtful utility.

Prosper J. Berckmans of Augusta, was, for the twenty-eighth consecutive time, chosen as president of the society. Secretary Hugh N. Starnes, biologist and horticulturist of Georgia Experiment Station, declined re-election and nominated for the position Charles T. Smith of Concord, a prominent nurseryman. Mr. Smith was unanimously elected and will guide the affairs of the society for the next year.

Macon was selected as the next place of meeting—the date being left (as usual) to the president.

HUGH N. STARNES, Secretary.

Apple Day at the World's Fair.

A letter from Mr. T. C. Wilson, Hannibal, Mo., secretary of the American Apple Growers' Congress, states that the executive committee of this organization has postponed "Apple Day" at the World's Fair from September 27 to October 4. It is the intention of the society that every person who visits the fair on this day shall have one or more apples, and for this purpose every grower is urged to select a package of nice Grimes, Jonathan, Wealthy or other good eating apples and forward for distribution at this time. The plan arranged contemplates giving every contributor credit for the fruit which he sends. Full directions for the shipment of the fruit will be furnished those who apply to Secretary Wilson, at the above address.

The annual meeting of the congress will be held in the Horticultural Building, World's fair grounds, on November 9, 10 and 11, and a very attractive program is being arranged for this occasion. It will be the purpose of the program committee to get the best talent available and to discuss such subjects as are not usually handled by the state horticultural societies, but such as are of vital importance to the commercial side of apple growing. The executive committee is called, to meet in the Horticultural Building, on Tuesday, August 30, at 3 o'clock p. m., for the purpose of hearing the report of Statistician John T. Stinson. This report is supposed to show the exact condition of the apple crop all over the apple-producing territory, and will be mailed out to members of the congress only. Those who wish to have the benefit of these reports must become members by enclosing the three-dollar ($3.00) fee to the secretary.

Fancy Methods of Training Fruit Trees.

In the grounds about the French building, east of the Administration building, on the World's Fair grounds, is an exhibit which every fruit-grower who attends the Fair should see. In the grounds surrounding this building are examples of the various styles of training fruit trees which are used in France, and which are entirely unfamiliar to most Americans. Pear, apple, peach and cherry trees are trained in espalier and cordon forms, in shapes which most of us would have thought impossible. These methods of training are, of course, impracticable and unnecessary in this country. They are used in the gardens of Europe, and are necessary in many places, for by training them in fan-shapes the trees can be attached to the sunny side of a wall, and thereby have the advantage of the most favorable surroundings. In this country we have all sorts of climate, so that the needs of each fruit can be supplied. But as samples showing how these trees can be trained this exhibit is most interesting, and will be attractive to every visitor to the Fair who grows fruit trees.

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Strawberry Gossip

The picking season for strawberries for 1904 is a thing of the past. With the exception of a week of damp, cloudy weather, which induced considerable rotting of the fruit, the season has been a favorable one. There was no injury from drouth, which so commonly occurs, and the weather at picking time was not nearly so wet as last year. Yet the season as a whole has been so wet and cold that the quality of the fruit has seemed to suffer. During the early part of the picking season nearly all kinds seemed deficient in flavor.

Vigor of Plants vs. Productiveness.

One can not help admiring a strong, vigorous-growing plant, but too often this characteristic does not go with good fruiting qualities. Apparently some medium ground is to be preferred, for a plant which is deficient in leaves cannot develop its fruit properly. One which produces a wealth of foliage may spend its energies in this way, to the neglect of fruit-bearing. I do not recall a single instance among all our seedlings in fruit this year, where a rank growth of vines has been coupled with heavy fruit production; yet our most productive kinds have, as a rule, produced a good, healthy and fairly strong growth of leaves.

Late Fruiting vs. Productiveness.

This season's observations have been similar to those of previous years in many of the plants which early in the season seemed to promise a good yield late in the season, have proved disappointing as the season has progressed. It often happens that a plant which shows an abundance of green fruit when other varieties are ripening, will not carry out that fruit well, so that the yield is found to be light. Sometimes rotting of the fruit is responsible for much of the loss, and often the berries are not perfectly pollinated. I am inclined to doubt whether we shall ever be able to get as great productiveness in a very late variety, as we can get in the mid-season sorts. Of course it may happen that these varieties do not secure a fair showing, from the fact that when grown in a small way some of the fruit comes on after pickIng is really over, and is more likely to be neglected or overlooked than if coming at the regular time. It may be that if planted in larger numbers, with varieties together, all of which blossom and mature late, the difficulty from imperfect pollination would be largely overcome, and the results might be better.

A New Strawberry Picker.

A strawberry picker which Is being advertised somewhat this year, came to hand just at the close of the season, too late to put it to a practical test. From a few moments observation in the field, it would seem to be an open question, whether it may not be as much, or more, work to get the berry in just the right position to be picked, as it is to pick it by hand. However, one could not pass judgment upon that without a more thorough trial than we have given. The invention is, apparently, so new, that the construction is not as good as it should be, in all points, especially in the matter of the cutting-device. This implement has one decided advantage, In that the frult need not be handled at all with the hands. A careful look at the hands of berry-pickers would often lead one to consider this a more Important polnt, than it at first appears.

Notes On Varieties.

Only a few of the newer varieties have been fruiting on our grounds this year, under conditions which will admit of comparison.

The following may be mentloned:

Aroma—This chanced to be in an unfavorable location, the row running through a depression, so that most of the plants were killed out in winter. With us, it does not rank high, either in vigor, dlsease-resistance nor size. The fruit is regular, of good appearance, firm texture, good quality. The form Is ovate; flavor, sub-acid; color, crimson; color of flesh, scarlet with a lighter center; calyx, depressed, of medium size; core, solld or spongy.

Challenge—Fairly vigorous, moderately productive, and of average size. Appearance, not very good, but texture excellent, and quality good; fruit long, flattened conical, of dark color, with light flesh; calyx small and the core solid. The leaves are short, of medium size and the fruiting stems weak.

Hero—This is a vigorous plant, but lackIng in productiveness and size; fruit regular, of good appearance and high quality, but not of very good texture.

Marshall—Our conditions were evidently not good enough for this fine old family berry. It retained Its high quality, but had little else to commend it, as seen here this year, the yield being very low, and the size rather small.

Lyon—Vigorous plants, free from disease, but lacking in productiveness. The fruit is of average quality, but does not rank high, either in size, appearance or texture. A little fruit appeared late.

Oom Paul—A vigorous variety, with large, tall leaves, resisting blight well, but not very productive. It has been below the average in size, texture, quality and resistance to rot.

Texas—This was one of the most promising of the named varieties which fruit this year. It is a vigorous plant with large, tall, dark leaves, resistant to blight. It appears to rank high in productiveness, appearance and quality, and fairly well in size, texture and resistance to rot. The fruit is short, rounded, acid, of light color with bright red flesh.

Uncle Jim.—Vigorous, resistant to disease, fairly productive, of good size and quality.

Yant—Vigorous and showing little blight, but only moderately productive. Fruit of average size and appearance, and good texture, but low in quallty.

Glen Mary—This old variety still contlnues to be one of our best here. The plants this year were only moderately vigorous, but resisted blight well, and it always ranks high in productiveness. The fruit is large, of fairly good quality, but somewhat deficient in texture.

Notes on Seedlings.

Many seedlings are in fruit, a few of which may be of interest.

Wm. Belt crossed by wild.—These plants have developed great weakness this year. They seem unusually susceptible to rust, which has well-nigh destroyed the foliage. In productiveness, they have been absolutely deficient, producing very little fruit of value, although In previous years, as younger plants, they have borne fairly well, considering their character and parentage. It is very evident that we must get further away from the wild plant than this, if we hope to secure anything of value.

Crescent crossed by Glen Mary.—One seedling of thls parentage, of which a short strip of row was in fruit this year, proved very vigorous and productive. The plants resisted blight well and the fruit was very regular of good appearance, excellent texture, and ranked high In resistance to rot, but not high in size, or quality. In appearance it is much like Crescent.

McKinley crossed by Ridgeway.—This parentage has been one of our most promising lines this year. The plants are strong with large, tall, wrinkled leaves, resisting blight much better than the average, and ranking high in productiveness. The fruit is large, regular, of good appearance and excellent texture, but only average quality. It also appeared to resist rot well. Form, short, flattened; flavor, sub-acid; color, light; color of flesh, white, tinged with red; calyx, large; depressed; core, solld and good.

Glen Mary crossed by Wm. Belt.—One seedling of this parentage Is a fine appearing berry. Plant vigorous, resisting blight well, and fairly productive. Fruit ranking high in size, regularity, appearance and quality. Form, short, conical; flavor, sub-acid; color, light red, extending through the flesh; core, open, with a slightly hardened center.

Hunn Crossed by Ideal.—Seedlings of thls parentage very similar in appearance. Nearly all have short leaves, which are dark and glossy. The fruit is nearly always round,

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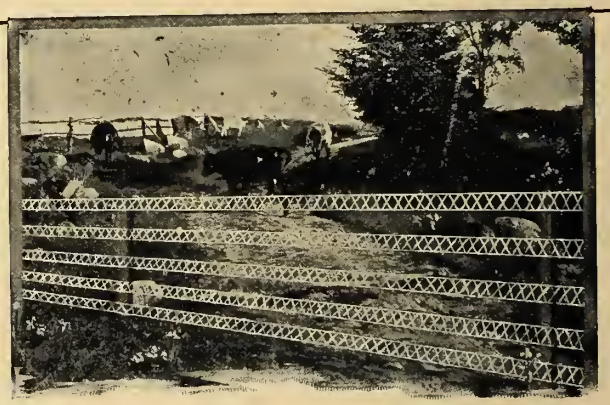

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dark, glossy and sour, ripening late. This is one of our most promising lines for lateness of fruit, but as yet we have not secured suffcient productiveness and in many cases the plants lack vigor. FRED W. CARD.

Kingston, R. I.

Strawberries in Massachusetts.

Again the time has come when I look with interest to see what are the reports on various varieties of strawberries and taking it for granted that others do the same, I submit my own report. Massachusetts has a most uncertain climate for fruit-growing, but this year strawberries did their best, the weather conditions being unusually good.

I would dismiss as unworthy of even description the following varieties, viz: Palmer, Kansas and Crimson Cluster and would only add that Palmer bears almost no berries, while Kansas is worse, for it bears such small berries. New York, too, almost belongs in this category since with me it promises, like Jessie, great things at blooming time and produces very few berries. If I have the true New York they are practically a Jessie. Brandywine bears less and less every year.

Now, as to some varieties that are valuable: I had in all about twenty varieties in bearing. I will mention these in about their order of ripening.

Excelsior began to ripen May 31, a thing almost unknown in this locality. Began to pick June 8. This is undoubtedly the best early berry ever sent out, but some one please hustle and give us a better one. The berries are large and beautiful at first, though later many small ones appear, are very smooth and very firm, of fine flavor when dead ripe, but except when very ripe are so sour as to be of no value if a better quality berry can be found. Very heavy cropper; rusts badly unless sprayed.

Texas comes a close second, if indeed it be second in time of ripening. My Texas presented the handsomest sight I ever saw, at the time of the first ripening. The berries were very large and hung suspended by the stalks well up from the ground. The quality is better than Excelsior, lighter color and hulls rather badly; not nearly as heavy bearer as the latter.

By this time Dunlap is ready for business. Oh, those great, big dark red, luscious berries! Very firm, very fair bearers, but not equal to Pocomoke for quantity. All right for size unless fancy berries desired.

Pocomoke and Sample ought to get married and set up housekeeping. The former is a fine pollenizer for Sample, ripens about the same time and can be picked in the same basket. Pocomoke produces a most immense crop of berries, the earlier berries being very large, dark colored, firm berries of good quality. The berries hide away under the leaves and close to the root of the plant so as to make it difficult to pick. Its season is very long, but the last berries tend to run down in size; nevertheless one could well afford to throw away all the small ones.

Sample is of perfect shape and form if fertilized properly; rather soft and liable to rot on wet ground and rather small on very dry ground. Has one valuable quality in that its blooms are as near frost proof as perhaps any variety in existence.

Glen Mary comes at about the same time and is my pet strawberry. It yields an enormous crop of very large berries with very white noses, early in the season, and inclined to have rough, almost nubby noses, that appear to have been improperly fertilized. Should be planted just like a pistillate variety. The berries seemed to grow more smooth toward the last and yielded big berries this year up to July 14, and one box as late as July 25. These last three varieties are by far my best kinds. The two latter need spraying for rust, which often affects the plants very seriously.

Challenge promised a most tremendous crop of the largest berries, but the foliage utterly failed. The plants did not rust, but just did not put out leaves at bearing time, though the summer they were set out the foliage was fine. Of course the berries soon grew very small. The berries are very white on the under side until dead ripe; firm and good.

Uncle Jim produced a very heavy crop of berries of the largest size, light in color, but of fine quality. Picked heavy for a short time, and then were done.

Morgan's Favorite were just about like the latter, except possibly a little different in shape. The berries are of very finest quality and perhaps the largest of any variety I ever tried. Both Uncle Jim and Morgans are very like Jessie and New York in foliage, but, unlike these two varieties, bear heavy crops but rot badly if very unfavorable weather sets in.

Miller promised fine, but as the bed was water soaked until late in the spring, began to ripen late and bore a moderate crop of fine, glossy red berries about as large and soft as Sample, but far superior in quality. The foliage is, I think, the best I ever saw.

Rough Rider produced a few pickings of fine berries, then run small. No later than Glen Mary and about half as productive.

The largest crop of berries of the largest average size I ever raised was Clyde (an early berry), but they are soft and of poor quality—just bags of water. I tried them again this year for a final test, using a fertilizer containing 10 to 12% potash and I believe they were lighter in color and more watery than ever, though the berries were of the largest size.

And now just a word for the man who raises plants of new untried varieties and sells them for a big price: Is he a fraud? I will answer I have tried most of the best older varieties and have not yet found one worthy of cultivation when compared with these new kinds, nor do I see many larger berries in market than the ones I raise. I would far rather pay $10.00 per 1,000 for plants of my best varieties than set plants of any old variety I have yet seen unless it be Bubach, even if the plants were given me, and yet I raise for fruit, not plants to sell. ALBERT F. TENNY.

Ipswich, Mass.

Bordeaux Mixture for Peach Leaf Cure.

Noticing an article in July paper by E. E. Herriman, I will give you my experience with peach leaf curl. Our trees were very badly affected, and as this was the first we have had this disease, we mixed up a dose of Bordeaux full strength, 6-4-50, using air slacked lime. Some of the trees were almost denuded, but in a short time the curl was gone and new leaves began to appear. Now they are all right. Couldn't see that the mixture at this strength injured the foliage or fruit. If we had continued the spraying it might have done some damage. But we only sprayed once, which seemed sufficient.

A. M. BENJAMIN.

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The pecan crop of Texas is reported to be light.

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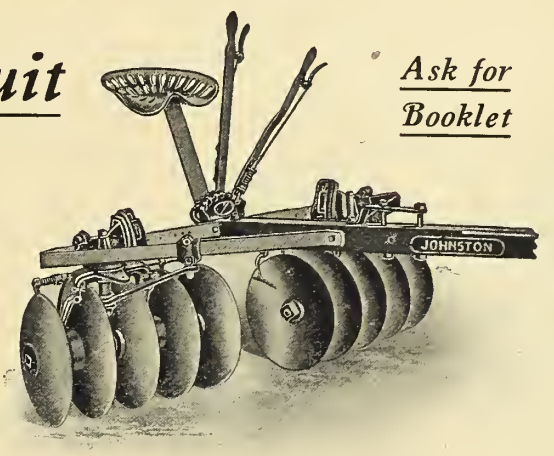

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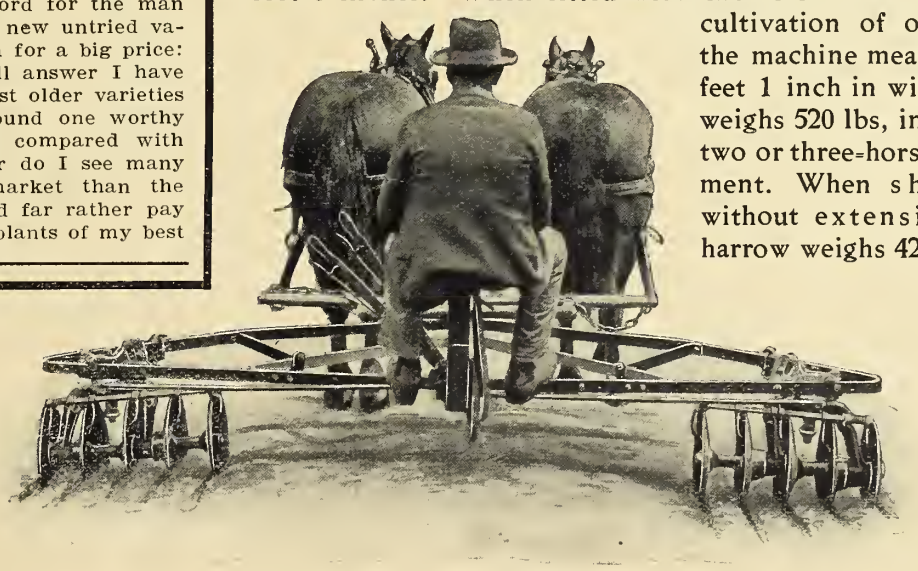

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Johnny Appleseed

The Humble Record of John Chapman, Apostle of Apple-Growing

The recent unveiling of a monument to the memory of John Chapman, better known throughout Ohio, Indiana and Pennsylvania under the name of "Johnny Appleseed," in the Sherman-Heineman Park at Mansfield, Ohio, calls renewed attention to a unique character. The plain shaft that commemorates his gentle, beneficent life was erected through the generosity of Hon. Martin B. Bushnell, a banker and one of the park commissioners of Mansfield, whose father, a physician, was a warm personal friend of Chapman and regarded him as one of the most remarkable men of his time. He was one of the few who had sufficient discernment to recognize the inherent nobility of this pioneer horticulturist and to give him credit for all that he was doing in the service of humanity.

Considering the little that is known of Chapman, it is not surprising that a novelist, unfamiliar with the details

MONUMENT ERECTED TO THE MEMORY OF JOHN CHAPMAN—"JOHNNY APPLESEED."

of his career, should make the mistake of regarding him as demented. I refer to the late Mrs. Mary Hartwell Catherwood, who gives one the impression, in her "Lazarre," that Johnny Appleseed was "clouded in mind." That he was erratic is unquestionably true, but that is no reason why he should be considered a lunatic. I have recently corresponded with a number of men and women who knew Chapman personally and not one throws the slightest doubt on his sanity. In our day it is hard, of course, to comprehend the usefulness of a man who devoted the best years of his life to the service of the advancing host of pioneers, with little prospect of material reward.

Chapman was born at Springfield, Mass., in 1775. Nothing is known of his boyhood, but in the early part of the past century, he came to Ohio in the company of a half-brother. After a sojourn of a year or two, the young men returned to Springfield and persuaded Nathaniel Chapman, their father, to transfer the family home to Marietta, Ohio, where it remained until Nathaniel removed to Dutch creek, the place of his death. Numerous descendants of this early settler are now scattered throughout the states of Ohio and Indiana.

John is said to have located first near Pittsburg, Pa., where he began his self-imposed task of clearing the wilderness and planting appleseeds. His first invasion of the Buckeye State, with a cargo of appleseeds from the ciderpresses of Western Pennsylvania, occurred in 1806. One fine day, in that year, a settler in Jefferson county noticed a queer looking craft coming down the Ohio river above Steubenville. It consisted of two birch-bark canoes, that were lashed together and propelled by an oddly dressed person and proved to be loaded with sacks containing appleseeds. On landing Chapman introduced himself and stated that he intended to establish nurseries along the river front. Subsequently he extended his operations into the interior of the state, along the Muskingum and Walhonding rivers, and planted nurseries in a number of counties. In every open spot, wherever the soil seemed suitable, he established orchards. Now and then he was also obliged to make clearings in the wilderness to achieve his purpose. But, undaunted by obstacles, in a country swarming with wild animals and venomous snakes, he forged ahead and planted his seeds and surrounded his nurseries with brush fences. He traveled hundreds of miles annually to visit and prune his ungrafted stock, but when the pioneers came he had young fruit trees ready for them. Thus he performed a task the advance guard of civilization was unable to perform for itself. These early settlers were too busy in wresting a livelihood from the soil and in fighting Indians to engage in the slow process of raising apple-trees from seeds.

For a number of years Johnny lived the life of a hermit in a little cabin near Perrysville, Ohio, but later he shared the abode of a sister at Mansfield.

His methods of travel varied. Sometimes he journeyed afoot, at other times he took to the waterways or employed a horse to transport his precious seed-bags, which were made of leather to protect their contents against the dense underbrush, brambles and thorny thickets. Rosella Rice, one of his contemporaries, gives the following description of one of these bags in a report to the Ashland County (Ohio) Pioneer Historical Society: "I should think there was at least a bushel and a half in it and it was so full, that, instead of being tied and leaving something for a hand-hold, it was sewed up snugly, and one end was as smooth and tight as the other. It must have been as hard to carry as a box of the same size."

In a recent letter to me, Mr. H. R. Smith, of Mansfield, who was well acquainted with Chapman, states: "He would go down along the Ohio river in the fall, to where they had some old orchards and gather appleseeds at their cider-presses. He had an old horse, which he would ride down and coming back he would put his appleseeds in bags and put them on the horse and lead the horse. He told me about one of his trips; getting belated and coming to no house to stay over night, he looked around in the woods for some place to lodge in and found a hollow log into which he crept. During the night he heard a rumbling noise, so in the morning he made an examination and found a bear with two little cubs in the other end of the log."

During his journeys Chapman usually camped out. He carried a kit of cooking utensils and was an expert in woodcraft. A welcome guest at the fireside of any pioneer, he seldom availed himself of the proffered shelter. But when he did, he preferred to lie on the floor, with his poor old horny feet to the fire. So far as is known, he never slept in a bed.

According to all accounts "Johnny Appleseed" was not prepossessing in appearance. He is described as having been about 5 feet 9 inches in height, rather spare in build, but large-boned and sinewy. Dark and sparkling eyes were deep set in a weather-beaten countenance and he wore his hair and beard long, after the manner of the frontiersmen of that day. His clothing was generally half worn out before he obtained it in exchange for the one commodity in which he dealt—apple trees. His headgear was wide-brimmed. During the summer he generally went barefooted and sometimes even scorned

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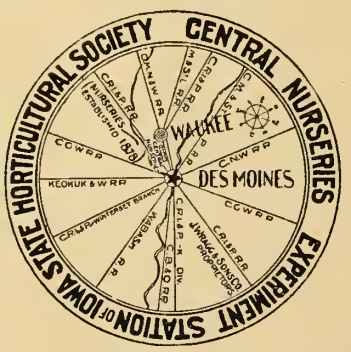

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Another great advantage enjoyed by our nurseries is that one of the Iowa Experiment Stations is located on our grounds. The tests of methods, varieties, etc., continually carried on here, throw much light upon our field of work, enabling us to know just what to recommend and what to discard. This information we endeavor to transmit to our customers most faithfully.

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HARTFORD, Ia., Aug. 20, 1903.

This is to Certify, That I have known the Hartford Pear Tree since 1865, and have been sole owner of the premises on which the tree stands for the last fifteen years; and during this time I have picked large crops annually, from this tree. At no time has it borne less than ten bushels of pears yearly. Several years during this time I have picked from eighteen to twenty bushels; and one year the tree bore, at least, twenty-five bushels, from which I sold twenty-two bushels of marketable fruit, at $2.00 per bushel. (Signed.) JAMES RICHARDSON.

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footwear during the more inclement seasons.

Mr. J. H. Archer, of Fort Wayne, Ind., in a letter now before me, relates that Johnny found it convenient to wear a boot and a shoe so that, in crossing a small stream he could step into the middle of the current with the boot and land on the other bank with the shoe.

Chapman is said to have been quick in conversation and action. Usually tacitturn, he became eloquent and enthusiastic when speaking of apples. One of his contemporaries, astonished at his beautiful description of excellent fruit, asserts that it was poetical and that he expressed himself in language remarkably well chosen. In fact, the impression was general that Johnny had been well educated.

Of his business methods, the late Rosella Rice says: "If a man wanted trees and was not able to pay for them, Johnny took his note, and if the man ever got able and was willing to pay the debt, he took the money thankfully; but if not, it was well. Sometimes he took a coat, one of which we remember having seen. It was a sky-blue, light, very fine, firm and soft, made in the prevailing Quaker style, with bright silver-looking buttons on it; two rows, as large at least as silver dollars. Some way the button holes were out of sight,

"JOHNNY APPLESEED.
(From an old print.)

hidden by a fold perhaps. The coat was a choice wedding garment of a wealthy young Quaker, and, in time, prosperity and its attendant blessings made the young man grow rotund in stature, and the coat did not fit. Then he had loops put on it and finally he traded it to Johnny for trees; and Johnny's home was at my grandfather's, and by that means the coat came into our family and hung by the year on a peg upstairs. I can remember how Johnny looked in his queer clothing—combination suits as the girls of nowadays call it. He was such a good, kind, generous man, that he thought it was wrong to expend money on clothes to be worn just for their fine appearance. He thought if he was comfortably clad and in attire that suited the weather, it was sufficient. His headcovering was often a pasteboard hat of his own making, with one broad side to it, that he wore next the sunshine to protect his face. It was a very unsightly object, to be sure, and yet never one of us children ventured to laugh; we held Johnny in tender regard. His pantaloons were old and scant and short, with some sort of a substitute for 'gallows' or suspenders. He never wore a coat unless it was in the winter time, and his feet were knobby and horny and frequently bare. Sometimes he wore sandals—rude soles with thong fastenings. The bosom of his shirt was always pulled out loosely, so as to make a kind of a pocket or pouch in which he carried his books. We have seen Johnny frequently wearing an old coffee-sack for a coat, with holes cut in it for his arms."

From some intimations he dropped at Mansfield and other points Chapman was commonly supposed to be a regularly ordained Swedenborgian missionary, which would account for the zeal with which he distributed the literature of that sect.

In a way he might be considered the first man to start a circulating library west of the Allegheny. Levi Zimmerman, of Mansfield, now 90 years of age, in a recent communication to me, recounted how Chapman met him on the street one day and asked him whether he could read. Upon receiving a reply in the affirmative, Johnny tore a Swedenborgian book in two and gave Zimmerman half, requesting him to visit another person later on to exchange parts. Thus his books were no dust collectors and circulated among many families.

Mr. Hiram R. Smith relates the following anecdote of the subject of this sketch, which illustrates that, in addition to the strong religious bent of his mind, he possessed a sense of humor: "Away back in the twenties Rev. Adam Paine, a sort of Lorenzo Dow, was once preaching on a public square in Mansfield. As I was passing through I saw Johnny lying upon a pile of boards listening to the sermon. When Paine called out: 'Where now is your barefooted pilgrim on his way to heaven?' Johnny, holding up his bare pedals exclaimed: 'Here he is!'"

Some men who knew Johnny Appleseed described him as harmless, which is rather ambiguous. Mr. Smith is more exact. At the close of his letter to me, he makes the following statement: "He was one of the best conditioned men I ever met. He never got mad, no matter what you would say to him. He would never kill anything, not even an insect or a wild animal. He would say they had as good a right to live as he had."

Though unarmed, the pioneer horticulturist was seldom molested. The Indians liked him and treated him very kindly. They regarded him, from his habits, as a man above his fellows and he was known among them as a great "Medicine Man." Probably this was due to the fact that he was intimately acquainted with the virtues of many medicinal herbs, whose distribution he attempted to equalize by sowing seeds of them in localities in which they were not represented. He ascribed great medicinal virtues to the fennel (which was probably indigenous to Pennsylvania) and was in the habit of scattering seeds of it along his path, especially in the vicinity of dwellings. In this way, with the best of intentions, he introduced one of the worst pests the farming population of Indiana has to contend with today.

During the war of 1812, Chapman often warned the settlers of approaching danger. On one occasion, when the inhabitants of Mansfield were terror-stricken by rumors of a hostile attack, he sped through the wilderness to Mt. Vernon, 30 miles away, where Captain Douglas had a troop of cavalry, and secured aid.

In 1838, when civilization began to encroach upon his old haunts, he resolved to pass on to the westward, and so sadly made the rounds among his old friends and bade them farewell. He settled down in the wilderness, in the vicinity of what is now Fort Wayne, Ind., where he laid down a life full of labor and pain and usefulness, a life that was humble unto self-abnegation, on the eleventh of March, 1847, at the age of 72.

His death was characteristic of the man. Hearing that some cattle had broken down the brushwood fence of a nursery he had planted, he decided to investigate. It was winter and the nursery was twenty-five miles away, but he bravely started out afoot to save his beloved trees. He worked for hours in the cold and snow, repaired the fence, and then set out for home. Chilled to the bone and fainting from fatigue, he took refuge in the cabin of a settler, Wm. Worth, who had known him in Ohio and, of course, welcomed him warmly. The next morning the poor old man was delirious and soon succumbed to pneumonia. He was buried on the west bank of the Saint Joe river, two and one-half miles north of Fort Wayne. The site of his grave, general opinion to the contrary notwithstanding, is known and has been marked during the past year (1903) by three ungrafted appletrees. These were planted by Mr. J. H. Archer, of Fort Wayne, Ind., at the request of Mr. M. S. Bushnell. Mr. Archer is a grandson of David Archer, in whose private burial ground Johnny Appleseed was laid to rest. Thus his deeds will live anew every spring-time in the fragrance of the apple-blossoms he loved so well!

Chapman never married and rumor had it that a love affair in the old Bay State was the cause of his celibacy.

In reviewing his career, we scarcely require the assurance of Rosella Rice that he was scrupulously honest. Nor was he, as is commonly supposed, a mendicant. He led a life of supreme simplicity from choice, but was never in indigent circumstances. As a matter of fact he left an estate of $2,000, a not inconsiderable achievement for his time and generation.

Detroit, Mich. H. ERICHSEN.

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ST. JOSEPH MISSOURI

Address all Communications and make Remittances Payable to "The Fruit-Grower Company," Seventh and Charles Streets, St. Joseph, Mo.

W. G. Campbell, Jr., General Manager James M. Irvine, Managing Editor

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Entered as Second-Class Matter in the Postoffice at Saint Joseph, Missouri

Volume 15 ST. JOSEPH, MO. SEPTEMBER 15, 1904. Number 9

Before you go to the World's Fair make a list of the things you want especially to see while there. Some of these things may not be on exhibition, but many of them will be, and unless you go with a memorandum to look for them, you may miss them. One thing which every farmer should do, we believe, is to think of the articles needed on the farm, in the way of implements, machinery, etc., and while at the fair inspect exhibits of this kind very carefully. You may remember the advertisement of some machine which has interested you, for instance, but have never seen the machine itself. Now, it may be that this machine is on exhibition in St. Louis, and you will have opportunity to see it and have it explained to you by an attendant in charge. In this way the fair can have an additional value to all our readers, for they will have an opportunity to examine advertised articles there which will not be offered again for a long time. Get all the good you can out of the fair.

"East, west,
Hame's best."

The truth of this quotation is impressed very forcibly upon one who visits the exhibits of the different states at the World's Fair. In the Horticultural or Agricultural buildings, for instance, it is pleasing to note the loyalty with which those in charge of the different state exhibits stand up for their respective states. To hear a man from the Texas exhibit talk, one would think Texas grew nearly all the fruit produced in the world. But go over to the Missouri exhibit, or to the Kansas exhibit, or to Oklahoma, and you will come away with the idea that Texas is a small factor in the production of the fruit of this country. But in every state exhibit will be found enthusiastic persons who are not willing to admit that any state can excel them. And this is right, too, for loyalty to one's state is most commendable. But one has really no idea of the resources of this country until one hears the claims made for the various states by these loyal representatives. Truly, this is a great country.

When you visit the Agricultural Building at the World's Fair, don't fail to inspect the exhibit which has been made to show how food-products are adulterated. There are some startling things shown in this exhibit, and will at once explain how some kinds of jellies, preserves, etc., as well as other articles of food, can be sold so cheaply. They contain practically no fruit at all. Every person who grows fruit has an interest in this exhibit, for the adulteration of jellies, cider, preserves, jams, etc., means that there is a lessened demand for fruits. Not only this, but many persons who are deceived by these adulterated goods lose all confidence in fruit products, and the consumption is decreased by this much. If the people are given good, pure products, the consumption of the same will greatly increase. Look at this exhibit, and then help work to secure the enactment and enforcement of pure food laws in all the states. To show how this thing works, we will say that recently it became evident that many places in New York were using acids in the making of lemonade, simply adding a small piece of lemon to the drink, to deceive the purchaser. This information was brought to the notice of firms which deal in lemons, and now the New York Fruit Exchange has employed agents to find out the places where the law is being violated, and arrests will follow. Of course, this work is commendable, from the standpoint of the protection which will be afforded the public—but at the same time it is going to help the demand for lemons, for it will mean that lemons shall be used to make the popular drink instead of injurious acids. Fruit farmers, of all persons, should be interested in pure food laws, and if there is one who is in any way doubtful, his doubts can be set aside by the exhibit in the Agricultural Building at St. Louis.

The Fruit-Grower wants to suggest a line of work for some of our experiment stations for next spring. A number of stations, it seems to us, could profitably take up the work. This work is to go out among the orchardists of the state and investigate the work of spraying which is being done, and then report why so much of the spraying is ineffectual. No one who attends the various horticultural meetings, and hears the reports of successes and failures, can doubt that a great deal of the spraying which is done every season is ineffectual. There is a reason for this, and yet from the reports which are submitted at the meetings, one can hardly tell what has caused the failures. Now, why would it not be a good plan to send experienced men out to see this spraying done, and then report the causes of failure? We believe this would be a good work, and one which would produce practical results. A great many things can combine to render spraying ineffectual, and a report of actual observations among farmers who are doing the work would help other growers everywhere to locate the cause of their failure. The theory of spraying is all right, and many practical men succeed in holding insects and fungous diseases in check. But at the same time many other men fail, and some plan must be devised to help these men, other than by the publication of bulletins, etc. The best way is to hold field meetings in every fruit-growing section, and have actual demonstrations of how the work should be done, out in the orchards. This will take considerable time to cover every part of any state, and in the meantime it seems to us to be a good plan to have representatives of the experiment stations go out among the farmers who are spraying, see how the work is being done, and then publish reports of the conditions as they found them and point out the mistakes that have been made. The mistakes that one man makes are the ones which others will make, as a rule, and these need to be specially pointed out. Let us all work to the end that all spraying may be made effectual—for the fact remains that, in spite of all which has been said and published on the subject, there is still much spraying done which is absolutely worthless.

The Fruit-Grower does not know what plans have been made for the distribution of apples on "Apple Day" at the World's Fair, but we would respectfully suggest that these apples be distributed from the Horticultural building. We had heard a suggestion that it would be necessary to give each visitor his apple, or apples, when he entered the grounds, for if the matter is not attended to then, there will be no way to prevent one person from "repeating" at the distribution and thus securing more than his share. Give the visitors coupons at the gates, if necessary, these coupons calling for a share of the apples to be distributed, but by all means let the distribution take place from the Horticultural building. In this way many persons who might not visit this building, in its out-of-the-way location, may be induced to inspect the fruit exhibit. If the horticulturists are to furnish the attraction for Apple Day, by all means let them get the benefit of the advertising.

Attention has been called many times to the work which is being done in breeding seed corn for larger yields, or to secure grains which will have different chemical constituents. This work is well set forth in the splendid exhibit of Illinois in the Agricultural Building at the World's Fair, where the chemical contents of different strains of corn are clearly shown by the contents of glass jars. Thus corn has been bred for specific purposes, with remarkable results. Now the Grain Dealers' Association have taken cognizance of the possibilities along this line, and are urging that seed corn—and other seeds for that matter—be carefully selected, to the end that the greatest possible yields may be secured. At the last meeting of the association resolutions were passed calling on all seedmen to select corn of certain types, which have the desired qualities, and which will greatly increase the size and quality of yield. This resolution reads: "Resolved, That the Grain Dealers' Association now in convention assembled does hereby urgently request all firms engaged in the selling of seed grain to adopt a line of business policy that will result in giving more attention to the question of type, breeding and adaptability, and thereby assist in improving the quality and yield of grains." This is a good move, and the corn growers' associations throughout the country will help to bring about the desired results. May the time soon come when we shall give as much attention to the propagation of fruit trees, and the selection of trees from which scions and buds shall be taken, together with due consideration of the stocks on which the varieties are to be budded or grafted.

Recently the Fruit-Grower issued a little booklet, telling the story of the paper, how it was started and how it has been built up during the past eight years. This booklet has been sent to advertisers and to a number of farm papers throughout the country. Later we will send a copy to each reader of the paper, as a souvenir of The Fruit-Grower and its purpose. The most complimentary letters are being received from those who have already seen the booklet. From advertisers, from personal friends and from publishers of various papers these letters are coming. We wish that man who says there is no sentiment in business life today could read some of our letters, received from busy men! He would quickly realize his mistake. Someway we have always imagined railroad officials as being not only very busy men, but that they, of all men, had less sentiment about their business affairs. Yet a great many of these men, who have seen this booklet, have written us letters of congratulation, and the other day the general passenger agent of one of the largest trunk lines wrote us a most kindly letter, and asked for several more copies of the booklet. We repeat, what we have said many times before, that the Fruit-Grower has more good loyal friends than any institution we know of, among advertisers and subscribers, among other farm papers. Here is what the Farmers' Voice, of Chicago, says about The Fruit-Grower and its booklet, in its editorial columns. Could anything be more complimentary than this:

"'The Evolution of An Idea' is the title of an exceptionally handsome brochure which has just come to The Farmers' Voice, and the matter it contains is of unusual interest, indeed. It is the story of the way in which four young wage-workers united their meagre financial resources and large faith and hope and self-confidence, and by energy, honesty, intelligence and the true spirit of enterprise have built up one of the most splendid horticultural publications in the United States, and all within less than eight years.

"In January, 1897, James M. Irvine, William G. Campbell, Jr., F. Lewis Campbell and Charles Work were fellow printers in the city of St. Joseph, Mo. Practical men in their craft, young and ambitious, they resolved to own a shop of their own, and as some of their number believed that there was a future for a horticultural paper published in the center of the great orchard region of the Mississippi valley, they decided to put out a paper along horticultural lines. What they lacked in money they made up in energy, and, having laid their plans, they set about executing them with a vim that would consider nothing short of success. Working for wages during the hours of the day, their evenings were spent in 'hustling' for the idol of their professional dreams—The Western Fruit-Grower. It was a thrifty youngster from the day of its birth, and it has grown amazingly, until today it occupies a leading place among the publications of its class, and with a fine advertising patronage and a circulation among the men who make the orchards and the gardens of the West the marvels of productiveness they are, it is destined to still greater things. The Farmers' Voice congratulates 'the boys' on their noble success and hopes that others as deserving shall find in their example encouragement and inspiration to achieve similar results. Missouri and St. Joseph have every reason to be proud of them and their work."

The interest of the railroads of Georgia in the development of the resources of that state was well illustrated by the fact that the Georgia railroad and the Central of Georgit road provided special trains to take the members of the American Association of Nursersymen through some of the peach orchards along their respective lines. But the roads are interested in the development of the state in other ways. The printed matter which is prepared by the Central of Georgia, for instance, is of the very highest character, and sets forth the advantages of the state. Another indication of the interest of the roads in the welfare of the farmers is shown by the fact that the Central of Georgia, and perhaps other roads for all we know, have a standing offer of half fare to every farmer who desires to visit the Georgia Agricultural Station. This station is doing a great work for the farmers, and knowing this, the road named offers reduced rates for farmers who wish to visit the station. This rate is good any time, whether one man goes or a large party. How is that for enterprise on the part of a railroad? We commend this plan to some of our northern roads.

Barrels for apples are quoted at higher prices in the East than they were last year at the opening of the season. Predictions are freely made that the high price of last season will be exceeded.

The apple crop in Europe is reported to be good this year, so that American apples which are shipped to Europe will have to face this competition.

When you write to our advertisers please say that you saw the ad in The Western Fruit-Grower.

Notes by the Way

It is most interesting to stand in the Horticultural Building at the World's Fair and study the persons who inspect the fruit exhibits of the various states. One cannot fail to be impressed, while so doing, of the lasting impressions which are formed in youth. Many of the persons who visit the building and examine the exhibits are reminded by the fruit on display of that which grew in their father's or their grandfather's orchard years ago. There are no better apples on display now—no, there are none so good, they say. And yet throughout the vast building will be found persons who critically examine the fruit on each table looking for apples like they used to know.

Most of these persons have some one with them; perhaps a father tells his son of the fruit he knew when a boy; perhaps an old man with a grandchild, and sometimes a husband with his wife, who was married in a state far distant from the old home. To all these companions the seekers tell of the merits of the old-time fruit, and they wax eloquent in its praise.

Here is a man who was born in New York. He now lives out West. Ignoring the fine apples exhibited from his new home, he goes over to the New York exhibit, telling his companion he wants to find some of the old-time fruit—the Greenings, the Spy apples and the Russets he knew when a boy at home. The companion follows eagerly, for he has heard of this perfect fruit many, many times—and now he hopes to see it. But he is disappointed. There is no fruit, even from New York, where the Greenings, the Spy and other apples grow to such perfection, which will equal the fruit the old man knew in his boyhood days.

Here is a man who now lives in New York state, but who was born in Canada. Does he notice the fine apple exhibit from New York? Not carefully, we think, for he is looking for the Fameuse apple—ah, there is no apple like the Fameuse, he says. And he searches the building to see if, perchance, there is an exhibit which contains this apple upon which he fed in childhood. There are Greenings, etc., galore, but he wants the Fameuse. But the Fameuse he knew as a boy is nowhere to be found, he says. While they grow this variety now, it is not like it once was——not like it was when he was at home on the Canadian farm, before he moved to "the States." And so his search, too, is unrewarded.

Here comes a man from Montana, with his wife, who is a native of Minnesota. They have admired the Minnesota apples, which really are a revelation to many visitors. But the husband has told his wife of the apples on the old farm in Missouri, where he was born—for even Missouri is an old state "back east" to the resident of Montana. He has told her of the Genitons which grew on the old trees at home, and which were the finest apples ever grown anywhere. And they come over to the Missouri exhibit to look for this old variety, the mouth of the husband watering as he thinks of the joys of his youth, and the appetite of the wife whetted keen by the glowing description of her husband. And so they search the large exhibit of apples from Missouri for the old-fashioned Geniton.

They fail to find this paragon of apples. Even if a plate is found, it is not like the old Genitons; not so red, nor so crisp, nor so juicy, he says. And then he asks for the Milam, does this man from Montana, but who has come home to Missouri for a short stay.

"What! No Milams on exhibit?" It cannot be that this old apple has been allowed to die out in Missouri orchards. The very thought of it is a severe blow, for this old apple has been a part of this man's recollection of his boyhood days in Missouri. He well remembers how the Milam was the one great apple in autumn; when as a boy he went to school in the morning, he first filled his pockets with Milam apples, and they comforted him all day long. By and by the supply of Milams gave out, for it was never a long keeper, even in the old days. Its place was taken by other sorts, which were stored in the cellar. These, too, went the way of all things earthly, but still the boys were comforted, for was there not a supply of Genitons in the "apple-hole" in the garden? And was there not enough apples of this variety to last until the coming of spring? Well this old man remembers the day when, after all other apples were gone, it was necessary to open the "apple-hole." The ground was tightly frozen, but this mattered not. Beneath the frozen surface was a thick covering of clean wheat straw, and then came the pile of Genlton apples. A little hard work with the pick was necessary to get through the crust, but finally an entrance was effected, the straw was pushed to one side, and, thrusting an arm to the limit through the opening, the cold, firm apples could be found.

Ah, me! were there ever apples so good as these? The Milams, the Rambos and all the other erstwhile favorites are forgotten in the presence of these Genitons. This variety wilts now, it is said, but it did not in the good old days, when they were stored in the garden, in a bed of straw, with a covering of earth to protect from the frost and cold.

No, there are no apples in the Missouri exhibit like these old favorites, this man tells his wife—and she, good soul, believes him. And, indeed, there are not! There are other varieties, to be sure, plenty of them, and the specimens are perfect, but these cannot fill the place in the old man's mind—nor in his stomach—which the old Milams, Rambos and Genitons did. For he was a boy then, and that was many years ago.

Here is still another one looking for some of the old-time fruits. This time an old lady, who passes the splendid exhibits of Elberta, Champion, Salway and other varieties of peaches. Coming from so many different localities, there are varieties ripening over a long season—but this old woman is not looking for them. She is looking for the old-time "Indian peaches" which she knew when a girl. Perhaps the tree grew in a fence corner—more than likely it did; it was small and a clingstone, two characteristics which would bar it from the commercial markets of today. But she remembers them as the best peaches she ever ate, and she wants to find them in the fruit exhibit. Certainly, where there is so much fruit on display, there ought to be one plate, at least, of this good old peach! But, tired with her search and wearied with asking questions, she gives up, and has to content herself with a mental picture of the old home, with its rail fence, and the fruit from this old tree which grew in the fence corner.

But is the fruit exhibit a disappointment to these persons, whose search was unrewarded? Not a bit of it. They are all the better pleased, and the memories which have been revived are very precious to them. They feel disappointed, it is true, but it may be said, quietly, and out of their hearing, that many of them would have been more disappointed if they had found the objects of their search.

The Horticultural Building is a great place to revive these old memories, and induces many persons to view again the scenes of their childhood. It is well worth a trip to the fair to view this wonderful display of fruit, and worth more to certain of the old men and women of our country for the memories which are revived. There is no pain connected with the disappointment—in fact, the chief disappointment has been borne by those who accompanied these various advocates of the old-time fruits, for having heard so much of them, they longed to see these paragons of horticulture. And they are the ones who are disappointed.

Time flies, and with the passing years the old apples and peaches of childhood days lose all their imperfections, and their good qualities are multiplied, until, as we remember them today, they were better than anything we have in the fruit line now—indeed, they were better than anything can possibly be today.

J. M. I.

Protection for Originators of New Fruits.

Some time ago Mr. Jacob Moore of New York wrote The Fruit-Grower in regard to a plan which will protect the originator of new fruits. Mr. Moore says it is one of the most important matters which can come before horticultural societies, for unt'l some way is devised to protect the originator or introducer, there will be little incentive to their product'on. Mr. Moore says that the matter has been brought up before the Western New York Horticultural Society, but that certain nurserymen suppressed it. These nurserymen, he claims, have followed the practice of waiting until some other firm has introduced a new fruit, and then try to reap a share of the benefit of the advertising. Not all nurserymen are like this, however, for at the last meeting of the Nurserymen's Association President Kirkpatrick told The Fruit-Grower that some way must be devised to protect the originator and introducers of new fruits, else there will be little progress.

When one cons'ders that Ephraim Bull, who originated the Concord grape, died a poor man, and that Peter Gideon, who gave the Wealthy apple to the world, died almost an object of charity, one can readily appreciate that these public benefactors ought to have a reward for the'r work. Mr. Moore, according to American Gardening, is giving his time to the breeding of new fruits, at the sacrifice of any pecuniary reward. He has given to horticulture the Brighton, Diamond and other good grapes; the Ruby, Diploma and Red Cross Currants, and has on his grounds several hundred seedl'ngs of grapes, pears, apples, currants, etc., none of which have yet been disseminated, but many of which are valuable. One of these is the "sugar" pear, a variety of very high quality.

Speaking further of Mr. Moore and his work, and the plan he advocates of providing a reward for originators of new fruits, American Gardening says:

"The story of Mr. Moore's life work is one of persistent and enthusiastic, but half-thwarted endeavor. The man is utterly absorbed in his work. He willingly subjects himself to privations in order that he may indulge his one great passion, the creation of new and better varieties of fruits. In this he has met with remarkable success; but the very intensity of his devotion to his chosen work has militated against financial success. As a consequence he has at times found himself hampered in his efforts by lack of a sufficiency of the indispensable though very prosaic cash necessary to give effectiveness to even the noblest enthusiasm.

"One great trouble is, that Mr. Moore has not been adequately recompensed for the indubitable services that he has rendered the horticultural world. Certain it is that, in general, originators of varieties are poorly paid, as compared with inventors.

"The remedy for this condition, Mr. Moore declares, is the enactment of a law providing for the registration of new varieties of plants by the originators and preserving to them the enjoyment of the fruit of their toil, somewhat as is done for inventors by the patent laws. The enactment of such a law would be only justice to the plant breeder, and is a consummation devoutly to be wished. At Mr. Moore's suggestion this matter was brought up at the last meeting of the New York State Fruit-Growers' Association, and a committee appointed to inquire what can be done to secure the enactment of such a law. The work of Jacob Moore is rich in suggestiveness. For every piece of accomplishment there arises in his brain the suggestions for a dozen more equally good or better. His mind is overflowing with ideas, but he is forced to see himself held back from putting them into execution by reason of his untoward circumstances. Jacob Moore is one of America's greatest benefactors; yet for him there is no compensation other than the knowledge of his service."

High Praise from One Who Knows

The Fruit-Grower Co., St. Joseph, Mo.

Gentlemen: I want to congratulate you upon the fact that you are publishing the best fruit journal in the world. As a grower of fruits I appreciate the superior quality of your paper. As a newspaper man I want to say that The Fruit-Grower is the most ably edited, managed and printed class journal in America.

THOMAS F. RIGG, Iowa Falls, Iowa.

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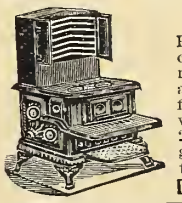
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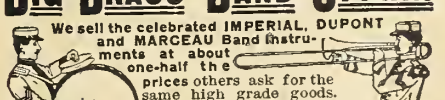
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The Family Circle

This issue of The Fruit-Grower will reach thousands of persons who have never seen the paper before, and therefore we want to again explain what we mean by "The Family Circle." Subscribers of The Fruit-Grower are members of "The Family," and this department is intended for the exchange of suggestions in regard to the improvement of the paper, and the advancement of the interests of the members of The Family.

As evidence of this friendly feeling which exists among readers of The Fruit-Grower—among members of The Family, if you please—we want to refer to the offer made by one of our readers in August issue to send cuttings of a certain variety of grapes to any of our readers who would send postage. This shows a friendliness which is commendable.

Speaking of cases of this kind, we recently received a request from one of our readers for some seeds of the Crimson Giant radish, which was recommended so highly in our gardening department. This department is conducted by Mr. Henry Field, and the request was forwarded to him. Now, it happened that Mr. Field had some seeds left from last spring, and he was perfectly willing to forward the seeds—but the person making the request had failed to give his address! And now this member of The Family is wondering why the seeds were never sent. This explains matters.

We refer to this case, for we want to again urge the members of The Family to never write any letter without giving your address plainly. Don't write anything you will be ashamed to sign—and then never fail to sign your name plainly, with postoffice address. As the subscription season approaches, when thousands of our readers are sending renewals and new subscriptions, we want to impress this fact on all their minds. Don't fail to write all names plainly, too, for this will save much confusion. Will the members of The Family try to remember this? Don't say you never do anything of this kind, for thousands of persons do overlook these things, and maybe you are one who occasionally fails.

At various times we have referred to foreign members of The Fruit-Grower Family. We want now to quote from a letter from a New Zealand subscriber, who writes:

"As the term of my subscription ends in September I herewith inclose postoffice order for $1, desiring you to continue sending me your paper for the ensuing year. The Fruit-Grower is a capital paper, and is extremely helpful to all interested in growing fruits. The conditions here more nearly resemble those of California, especially the northern part of that state. Still, many varieties of your peaches are largely planted here, and many varieties of Missouri apples are becoming standard sorts here, especially the varieties that resist woolly aphis."

You will note the foreign members of The Family have to pay $1 per year for The Fruit-Grower; this is due to the extra postage we have to pay on foreign papers. Note, too, that this man renewed his subscription in July, when his time did not expire until September. We commend his example to all our readers.

The other day we received a letter from one of our readers, a preacher, who lives up in Canada. He renews his subscription, but asks that we discontinue his paper when his time is out, as he "has been driven out of the fruit business by the universal rascality of the commission business; they are the greatest enemy of your paper."

Now, we mention this case, simply for the reason that we hope few of our readers will be compelled to quit the fruit business on account of rascally commission men. And at the same time we trust our Canadian brother will not lost faith in all commission men, for really there are lots of good men in this business, as well as some rogues. But this is so in all vocations, and we trust the members of The Family will seek to find the rellable commission men, and then freeze out the unreliable ones. But don't be a quitter, if you can help it.

Now, just a personal word between Brother Jonathan and the other members of The Family. Notices are sent to those members whose subscriptions are in arrears this month. The date at which the subscription of every reader expires is shown by the date on the wrapper in which his paper is received. Now, why not renew this subscription promptly? It is a very small matter to any one reader, but think what the total must be to The Fruit-Grower! The sum is a large one, and is badly needed just now to help perfect arrangements for the splendid issues we will send out during the coming winter months. Will not every reader examine the date on his wrapper, and renew his subscription today? Is it asking too much?

Remember how you find fault with the commission man because he does not remit for your fruit when his remittance is due—you have all had this experience, likely. How much different is it where a subscriber does not send to a publication the money due on subscription?

Think of this, please, examine the date on you wrapper—and then see that your subscription is paid up. And would it not be a good idea to try to get up a club of new subscribers, and thus secure four new subscriptions and your own renewal, all for $1. This is the plan that strikes us with most favor.

Just a hint about The Fruit-Grower for the coming season: It will be better than ever before, and likely will be larger. For the winter months we will have attractive colored covers, and have arranged for some special articles. The other day we closed an agreement with Mr. T. E. Orr, secretary of the American Poultry Association, for a series of articles for January, February and March, on a special subject which will be announced later. Other special articles are now being arranged, so that on the whole we expect The Fruit-Grower next winter to be better than any previous issues. See if we are not correct in this prediction.

In order to bring this about we will need the help and co-operation of every member of The Family? Will you do your part? Commence by renewing your subscription and getting us some new subscribers. Now is the time to begin this work.

BROTHER JONATHAN.

Missouri Valley Horticultural Society.

The August meeting of this society was held at Parkville, Mo., and was one of the best attended meetings of the year. The meeting was held in the new Alumni building of Park College, and dinner was served on the third floor of the same building. On the second floor a very good exhibit of fruit had been arranged. The visitors were surprised to find such good apples on the tables. The exhibit of peaches was especially fine, and after the close of the meeting much of the fruit was packed to be sent to the World's Fair.

During the morning the visitors were taken for a ride out in the country for a short distance and over the college farm. Passing Mr. Dan Lowmiller's orchard, it was found that he has a pretty fair crop of fruit. Maiden Blush trees were well loaded, and Jonathan and York Imperial show up nicely. Mr. Lowmiller says he attributes much of his success to the fact that he has sprayed his orchard for a number of years, using liquid, and this season he went out between showers and sprayed the trees, and managed to do effective work. He used Disparene as an insecticide this year, and at the present time this poison is found sticking to the foliage of the trees. Mr. Lowmiller believes it is the best insecticide he has ever used.

The trip over the college farm was much enjoyed. This farm consists of over 1,200 acres, and is managed in the interest of the college. The school partakes of the industrial nature, and many of the students help in the farm work. Great quantities of vegetables and fruits are grown, and stored away or canned for use by the students

Wallace Power Sprayer

Is now able to show strong expressions of approval from every important fruit-growing section of the country. It has demonstrated its superiority over all others for large operations. Purely automatic, power from wagon wheels, sprays highest trees thoroughly, pays for itself in a single season. Record of 1900 gallons sprayed out in one day.

READ THESE 1904 TESTIMONIALS:

"We have been testing spraying machinery throughout the whole season, and, I believe, are qualified to make comparisons. Your compressed air sprayer is far superior to any hand spraying outfit we have ever used. MICHIGAN AGRICULTURAL COLLEGE."

"I never bought a piece of machinery that did its work better than your sprayer. You need have no fear to send the most skeptical to our orchard to investigate. I can spray the highest apple trees with ease. Your pump saves me $6.00 and more every day over the hand pump. S. McCORD, Benton Harbor, Mich."

"My machine is very satisfactory and I am well pleased with it. It is all you claim for it, and I would ask nothing better. F. A. SCHERMERHORN, Ogden, Kan."

"I send you photo of Indian boys spraying in the school orchard. I spray with 80 pounds pressure and find it is doing good work. I am pleased with the machine and the boys like to use it. H. CROFOOT, of U. S. Indian Agricultural College, Chilocco, Okla."

"I am highly pleased with your machine. I worked with it myself yesterday and it was more fun than I have had in many months. Our trees are mammoth, but we sprayed them thoroughly. SUPT. ODD FELLOWS' HOME, LOCKPORT, N. Y."

ASK FOR TESTIMONIALS FROM OTHER FRUIT SECTIONS.

They show universal satisfaction in all sections in all sized trees and with all spray mixtures.

RESPONSIBLE DEALERS WANTED.

Now is the time to place orders for machines for winter spraying. Machines furnished either unmounted or mounted and with 200 gallon spray tank as here shown. Either with or without mechanical agitator. Power fits any wagon and attaches to any shape or sized tank.

LOOK US UP AT THE ST. LOUIS FAIR.

We're located in the Machinery Department of the Horticultural Building. If you don't go, write us at the factory to send you Booklet A and some of the descriptive matter we're handing out at St. Louis.

WALLACE MACHINERY CO., CHAMPAIGN, ILL.

Let Us Print Your Nursery Catalog

SINCE placing this advertisement in the last two issues of The Fruit-Grower, the Printing Department has been almost swamped with inquiries for estimates on Catalogs. We have received a large number of favorable replies from nurserymen and our business in this department will be larger than ever before. As we stated in our first talk to you on this matter we are making a specialty of this class of work. We are fully equipped to handle Catalogs of any size. We have a large number of cuts that we keep on hand for the use of our customers in printing their Catalogs.

We would advise you to get your copy in early, as during the months of November, December and January we will be loaded down with orders.

Write us regarding your Catalogs, for estimates, and we will use our knowledge to help you in getting out your advertising in a way that will pull business. Address

PRINTING DEPARTMENT

The Fruit-Grower Co., St. Joseph, Mo.

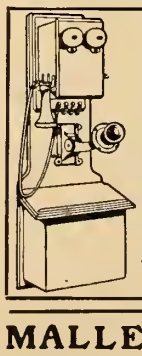
RADUMITE

A WONDERFUL METAL—Polishes Silver by simply being in the water with it. No chemicals of any kind required. THE METAL DOES THE WORK. Polishes all your silver in less time than you can polish a single piece by any other method. Does not injure the silver. LASTS A LIFE-TIME. Household size sent to any part of the U. S. on receipt of 50c.

AGENTS WANTED RADUMITE COMPANY, ST. PAUL, MINN.

The MOUNT HOPE NURSERIES of LAWRENCE, KAN.

Solicit correspondence and list of wants from all prospective purchasers of nursery stock. Complete line of Fruits and Ornamentals. **Apple and Peach Orchards a Specialty.** Good local and traveling salesmen wanted. Liberal Pay. Address, **A. C. GRIESA, Prop.**



POWERFUL 15 Years' Experience in Manufacture of Our Generators guaranteed to **RING 35 TO 40 PHONES** on one **"Elliott" PARTY LINE** line, party line Insts. acknowledged "WORLD BEATERS." Can whisper over them. Special discount on first 'phone in a section. Before you buy write for our "New Model 1904." Catalog and introductory prices, free; you'll not REGRET IT. **TELEPHONES**

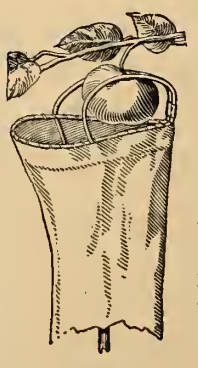
THE ELLIOTT TEL. & ELECTRIC CO. INDIANAPOLIS, IND.

MALLEABLE STOVES

COOKS AND RANGES—$5.00 CASH and $5.00 EACH MONTH buys direct from Foundry. Nonbreakable—everlasting. The Best in the World. Quick bakers. Fuel Savers. Any kind of fuel. Write for Malleable Magazine (free) and learn advantages of Malleable over ordinary kind.

MALLEABLE RANGE FOUNDRY, ST. CHARLES, ILL.

CLIMAX FRUIT PICKER



Solved at last. After the many failures patented in this country during the last 20 years and selling at $1.00 to $3.00 each, the picker that does the work is found to consist of but three pieces. A piece of wire, a pole and canvas bag. Tested last year and approved. Works high as well as low. No bruising of fruit or muscle. No breaking of trees or bones. Hard and dangerous work made rapid, easy and safe. Try one and you will do the talking yourself. We'll keep still. Retails at 75c. Dozen lots, 60c. Special to trade.

CLIMAX FRUIT PICKER

NEW PHILADELPHIA, ILL.

Third Anniversary Announcement

No More Long Waits for Your Money — WE PAY CASH

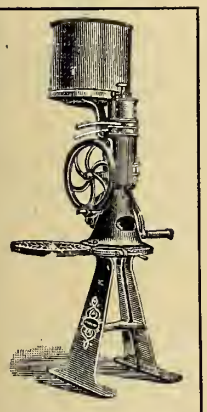
SILENT PARTNER.

A beautiful and instructive story of thrift is repeated in silent eloquence every day by the faithful cow through the established basis on which she does business. She asks for protection and care and good, wholesome food and pure water, and for all this she offers cash. The beef steer buys his feed on two or three years' time and then makes a big fuss about his importance in the financial world. The American hog buys his corn on a year's time, or more, and squeals if he don't get it. The good-natured, modest cow offers the highest price for feed of any of them and offers **Cash.** We acknowledge her example as worthy of imitation and hereafter we shall recognize the very exalted plan on which she does business by sending to the man who feeds her, the spot cash for every shipment of her product we receive.

Remember when you send cream to us it means an immediate exchange for its equivalent in cash, and you and the cow and we will all get on the same basis.

Very respectfully,

Blue Valley Creamery Co.



Empire Separator

The foundation of this wonderful system that satisfies everybody. Responsible for the wonderful transformation in the dairy world.

Blue Valley Creamery Co., Always in the Lead

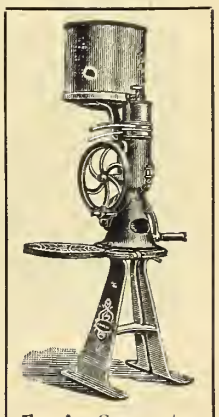
BUTTER-FAT on the CASH LIST Where it Belongs

No More Long Waits for Your Money—CREAM IS CASH

Third Anniversary Announcement of the Creamery With the Best System in the World.

Monday, August 22, 1904, marked another epoch in the history of Western dairying because of the most attractive feature introduced by us through the payment of spot cash for every shipment of cream. During the eventful three years in which we have been engaged in the creamery business on a system that has given universal satisfaction we have never lost sight of the very important place occupied by the man who produced the raw material, and in his interest we have constantly worked trying to increase his profit and reduce his labor. Every cent we have been able to save has been a cent made for him. Having had this constantly in mind it gives us extreme pleasure and is a matter of no small amount of pride that we were able on our third anniversary, to announce to the dairymen of the West that their interest will be further subserved and their profit increased by our paying SPOT CASH for every shipment of cream. A wonderful transformation in the dairy business generally and a phenomenal growth in our business has taken place in three years because of the system on which we operate. Three years ago this month we were the smallest creamery in the West. Today we are the largest exclusive pure creamery butter factory in the world. Three years ago we had fourteen patrons. Today we have over 5,000 individual shippers and are increasing at the rate of 100 per month. Three years ago we paid for cream bought in July $179.34. Today we have a monthly payroll of $75,000.00. Three years ago, under the old system, butter fat was selling for 13 cents while New York quotation for butter was 21 cents. Today we are paying 16 cents for butter fat, and butter in New York is worth only 17½ cents. Three years ago under the old system your skim milk was sour, dirty, dangerous to feed, and almost worthless. Today the most valuable feed on the farm is the pure, fresh, sweet skim milk. And finally, three years ago, you waited about sixty days for your money. Today we are able to gratify our most intense desire (ever since we commenced), and pay SPOT CASH for your cream, and this without extra expense, but an actual saving of office force. With another pledge that we will continue to study your interests, and if possible increase your results, hoping that we may continue to merit the hearty co-operation and loyal support we have always received, we are,

Very respectfully,



Empire Separator

Noted for its simplicity, ease of operation, durability, and satisfaction to care for.

The dairyman's best friend.

BLUE VALLEY CREAMERY CO., ST. JOSEPH, MO.

during the winter. The farm is under the management of Mr. George R. Murray, and is in good condition, except that very hard rains just previous to the visit had washed some of the hillsides. This farm, in common with other hillside fruit farms along the Missouri River, must be handled carefully to prevent washing of the soil. This is really one of the problems which must be solved in the near future on these hillside farms.

The dinner was in every way a success, with food enough to have supplied twice as many guests. After dinner the meeting was called to order. Reports of committees showed that the crop of peaches is good, but prices are not high. Grapes were reported a good crop, but rotting somewhat. Apples were reported a very light crop, and of poor quality. Vegetables were reported as having improved greatly during the past few weeks, and the outlook is good. Potatoes promise a much better crop than had at first been supposed. Corn was reported as having improved wonderfully. Indeed to look at some of the corn on exhibition, one would think this is to be a banner year.

Prof. W. L. Howard of the University of Missouri was present and gave a talk on the subject of "Ginseng." He showed photographs of the plant, seeds and roots of various ages. While there has been a market for all the ginseng which has been grown heretofore, he warned those present that when all the ginseng which has been planted comes into the market, there may be trouble in disposing of it. He said if anyone wanted to experiment with ginseng, it would be well to begin on a small scale, and not to be carried away by some of the boom stories which have been circulated.

Mr. N. F. Murray read a paper on "Horticultural Development of Missouri." He told of the wonderful increase in the planting of apple trees, and yet he made the prediction that the increase in the number of trees which come to profitable bearing is not keeping pace with the increase in population. He urged growers to care for their orchards and returns will be satisfactory. He told of the work of the Missouri State Horticultural Society, and particularly the part the society has taken in arranging fruit displays for various expositions. Many times, he said, the society has undertaken this work without funds, and has always made a good showing. He paid high tribute to the part Secretary Goodman has taken in this work, as well as the other officials of the society.

At the conclusion of Mr. Murray's paper a gentleman introduced a resolution expressing confidence in the integrity and honesty of Mr. Goodman and Mr. Gano, which resolution was adopted.

Mr. Goodman was present, and was called upon to tell something of the World's Fair. He described the Missouri exhibit particularly, and told how the fruit is placed on display and judged. While no definite report can be made upon any of the scores until after the close of the exposition, Mr. Goodman said he had learned that the only barrel of fruit which has scored absolutely perfect was a barrel which was packed on the Park College farm. During the week beginning August 15 peaches had been distributed from the Missouri exhibit, a carload having been donated by the growers of Howell and Oregon Counties. A magnificent show of peaches had been maintained, more than a thousand plates of this fruit having been on the tables at one time. He asked that those present keep on the lookout for choice fruit, which can be sent to the fair, to help maintain the Missouri exhibit until the close of the exposition.

Good as the Best, at bed-rock prices. 5,000,000 Choice Strawberry Plants, Blackberries, Black and Red Raspberries. Mammoth Rhubarb plants.
A. Y. CATHCART, BRISTOL, IND.

Immune Hogs

By feeding the sow Ridgway's Vaccine—10 cents a litter—the pigs are vaccinated before birth, hence are born **cholera proof.** One million successful tests, 10,000 strong testimonials. In further proof will ship my own pigs and expose anywhere in sick cholera herds, **at my own expense.** Agents wanted.
Robert Ridgway, Box F, Amboy, Ind.

Protected by sixteen patents. The latest improved. Made in five sizes, for all sizes of stumps and trees. Fully warranted. Catalogue free. Dept. D., W. SMITH GRUBBER CO., La Crosse, Wis.

Horticulture at World's Fair

THE Horticultural Building at St. Louis will appeal to readers of The Fruit-Grower, we believe, as will no other building on the grounds. All the members of The Fruit-Grower Family will visit this building, yet it is so far removed from the main part of the grounds that only a small percentage of the ordinary visitors to the exposition will see the horticultural exhibit at all. And yet this building is one of the most satisfactory on the grounds and the exhibits are the finest ever made.

The Fruit-Grower representative has made several trips to the fair, the latest visit being early in August. At that time the exhibit tables contained many nice plates of fruit of the crop of 1904—plums, peaches and apples from the southern states, while cherries and berries were still on the tables of the northern states. While in the building The Fruit-Grower representative interviewed a number of the superintendents as to the proportion of their apples on exhibit which had been sprayed, and that which was unsprayed. Few of the superintendents could give definite data, for the reason that the fruit had been collected by different persons, as a rule, being made up of the jars of fruit, and a good display of nuts which are grown in Missouri. Later strawberries were shown, but this feature of the display was not all that was desired, on account of the excessive rains, which rendered the fruit unfit for shipment, being too soft. In addition to this, there was much trouble with the express companies in getting fruit to the grounds, after it arrived in St. Louis, so that it often happened that fruit which arrived one morning remained in a warm room at the express office until the next morning. This same trouble was experienced by other states.

Following berries came cherries, peaches and plums, with summer apples of various kinds. Great quantities of peaches were given away on August 15, and throughout the entire period since the exhibit was opened Superintendent Goodman has distributed Missouri apples judiciously to those visitors who were not acquainted with the excellence of Missouri fruit. Later apples of the crop of 1904 will be given out, and the exhibit should be a splendid advertisement for Missouri, and her resources.

The installation of the Missouri exhibit is very attractive. A facade surround almost the entire exhibit, thus separating it somewhat from other

VIEW OF PORTION OF THE MISSOURI EXHIBIT, FROM THE OUTSIDE

and no record had been kept of that which had been sprayed. Superintendent Galloway of the Oregon exhibit, however, said that all his apples had been sprayed—simply for the reason that the progressive growers of that state do not try to raise apples any more without spraying. This statement was made by others, but most exhibits had been made up of sprayed and unsprayed fruit. It would have been interesting to know about the treatment the orchards had received, which produced the show fruit.

Most persons will enter the Horticultural building through the entrance toward the Agricultural building, which is the chief attraction of "Agricultural Hill." The visitors are met at the very threshold by the Missouri exhibit, with Illinois just across the aisle. It is fitting that Missouri should be thus located, as the hostess state. In preparing the exhibit the Missouri commission and Mr. L. A. Goodman, superintendent of horticulture, have had in view the fact that Missouri is hostess, and no pains or expense have been spared to make the exhibit creditable. And Missouri has certainly done herself proud. Other states claim to have better exhibits—California, for instance—yet The Fruit-Grower will have to stand up for Missouri. We know how unfavorable have been the past two seasons for fruit-growers, and can all the more appreciate the wonderful showing which has been made.

Missouri has more jars of fruit, preserved in liquid, than any other state, and these have been an important factor in making the exhibit attractive. At the opening of the fair the tables were covered with apples, kept in cold storage, the rest of the exhibit states. The exhibit tables, as a rule, are covered with plate mirrors, so that the reflection adds much to the attractiveness of the display. With fountains playing, and with baskets of fruit scattered throughout the exhibit, the effect is pleasing. Missouri has made a hit, too, by providing seats, where tired visitors may rest, and a barrel of ice water is one of the most popular places in the building, for it is one of the few places on the grounds where ice water can be had free of charge.

Special attention of visitors is called to a large map on the wall of the Missouri exhibit, which shows the best fruit lands of the state. This map was prepared by the University of Missouri, and shows the character of different soils of the state, each kind of soil being marked by different colors. The best fruit lands, for commercial purposes, are plainly marked, and this feature of the exhibit should be very helpful and instructive. It has been said that Missouri's fruit exhibit, with the installation, has cost $50,000. This is likely considerably more than has been spent on any other exhibit in the building. In caring for the Missouri exhibit Mr. Goodman has had the assistance of Mr. John Evans during the entire fair, and at other times Mr. Robnett, Mr. Gano, Mr. Dutcher and others have helped do the honors.

Next to Missouri is the Illinois exhibit, which is in charge of Mr. J. W. Stanton. The exhibit is a good one in every way, and is rather more on the commercial line than Missouri's showing. Mr. Stanton has added a very attractive feature, showing samples of commercial fruit packing. Barrels of apples are shown, as packed

Protect Your Trees With Our

Veneered Tree Protectors

75c per 100 $5.00 per 1000

Send for circular and testimonials from our customers in fifteen states in the Union who are and have been using them for years.

Their Advantages Are:

1. The prevention of injury from rabbits and mice.
2. The prevention of injury from bores and other insect pests.
3. From the hot, blistering sun and winter's blasts.
4. From injury against the whipple tree while cultivating the orchard.
5. Against sun scald. (Trees thus protected will not become hide-bound.)
6. They are cheaper than corn stalks in the long run, or any other kind of protector that has ever been used, besides being a great deal more effective in many ways, and only cost ½c per tree.
7. They beautify your orchard and enhance their own value 100 per cent immediately after being put on a tree.
8. If our Protectors are properly put on and looked after, they will last as long as the trees need protecting.
9. It will prevent the bark from bursting open on young trees in extreme cold weather.
10. Invaluable to Celery-Growers for bleaching their celery.
11. Taking into consideration their durability and advantages, they are the cheapest and best protector that has ever been offered to the public.

NURSERY STOCK

Nurserymen, Dealers and Planters, send for our wholesale prices upon all kinds of Nursery Stock before placing your order. WE CAN SAVE YOU MONEY.

Hart Pioneer Nurseries
FORT SCOTT, KANSAS

Do You Spray?

Would You Like to Save

One-third

of Your Spraying Material—

One-third

of Your Time—

One-half

of Your Labor—

And at the same time do more thorough work? If so, call at our Exhibit in the Horticultural Building, St. Louis Exposition, and

Let Us Show You How It Can Be Done

MACHINES IN OPERATION AT ALL TIMES. OR ADDRESS

The

Niagara Gas Sprayer Co.
MIDDLEPORT, N. Y., U. S. A.

DOUBLE ACTION Cutaway Harrow Used by CLARK

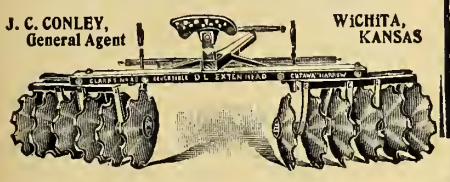
FOR LARGE HAY CROP

CLARK'S SULKY CUTAWAY REVERSIBLE DISK PLOW

CUTAWAY HARROW CO. HIGGANUM, CONN. U.S.A. SEND FOR CIRCULARS.

Cutaway Headquarters for the Southwest

J. C. CONLEY, General Agent — WICHITA, KANSAS



Wholesale stock of Cutaway Machines and Repairs at Wichita, Kan.

J. C. CONLEY, Gen. Agt.

SAPERDINE

Best Borer Preventive known. A scientific method approved by orchardists. No wrappers, no paint, no wash. Record marvelous. Prevents borers and injury by rabbits. Applied once yearly. Cost 5 cents a tree first five years. Non-poisonous. Correspondence solicited. Address

DR. H. O. BEESON, NOEL, MO.

TREE PAINT For Borers, Rabbits, Insects, etc. Best, cheapest tree protector out. Is a purely vegetable and mineral compound. 50,000 trees protected last year; get special offer. Agents wanted.

WM. ROBINSON, Bowling Green, Mo.

At Wholesale Direct to Planter

PECANS

GRAFTS AND BUDS

All kinds of Nut trees. June-bud Peach and Plum. Send for catalogue and Price List.

Oak Lawn Nursery, Huntsville, Ala.

3,000,000 June Bud Peach Trees

Budded from prolific bearing trees. We are exclusive wholesale, and sell direct to planters at wholesale prices. You can save money by buying from us. Trees guaranteed true to name and free from all diseases. State Entomologist's certificate with each shipment. Write for prices.

FLETCHER & HARRISON, Nurserymen and Orchardists, Cleveland, Tenn.

AUSTIN'S DEWBERRY

J. W. Austin, Pilot Point, Tex.

Original propagator and introducer. Headquarters for plants. Descriptive circular and treatise on dewberry culture, for your address on a postal card, if you please.

GINSENG The greatest plant on Earth. Fortunes in it. Now is the time to begin. Can furnish Seeds and Roots cheaper than any one. Write for our special price for September. Our stock is strictly American.

GENTRY GINSENG GARDENS

SEYMOUR, MO.

GINSENG Fortunes in this plant. Easily grown. Roots and seeds for sale. Room in your garden. Plant in Fall. Booklet and Magazine 4c.

Ozark Ginseng Co., Dept. PS, Joplin, Mo

GINSENG $25,000 made from one-half acre. Easily grown throughout the U. S. and Canada. Room in your garden to grow thousands of dollars' worth. Roots and seeds for sale. Send 4c for postage and get our booklet C. G. telling all about it. McDOWELL GINSENG GARDEN, Joplin, Mo

AMERICAN GINSENG

Water-tested seed of 1904. Roots of all sizes. Guaranteed strictly American. Write for prices and circulars.

A. GAGE, SEYMOUR, MISSOURI.

OLD CUSTOMERS

Continue to buy my strawberry plants. The finest lot I have ever offered are now growing for the spring of 1905. Free catalogue covering descriptions and culture ready January 1, 1905.

DR. E. L. BEAL, REPUBLIC, MO.

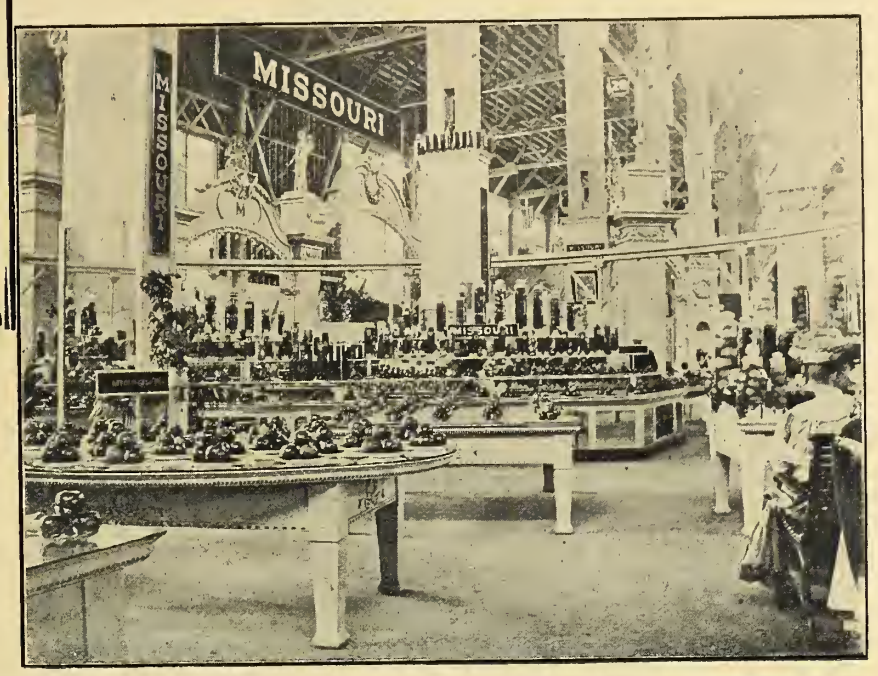
PEACH SEED

In any quantity

THOS. R. HAMAN, 1614 E. Oliver St., Baltimore, Md.

for market, and some boxes of Illinois fruit are also included. A full list of varieties of apples is shown, and fresh fruits of the season have been shown as they have ripened.

New York's exhibit at the time of our visit consisted of apples and currants. Some splendid currants were shown. New York's position as an apple state is shown by the prominence given this fruit, but later the exhibit of grapes from that state is expected to be wonderfully fine. New York was the only state which had grapes of 1903 crop on exhibition at the opening of the exposition, we believe, and those who remember the exhibit of grapes and pears made by the Empire State at Buffalo are expecting something fine in this line a little later.



SECTION OF MISSOURI EXHIBIT, TAKEN FROM INSIDE.

Mr. W. F. Schell is in charge of the Kansas exhibit, and has prepared an attractive display. The means at his command have been limited, and his appointment was delayed until last year's crop was past its prime, with earlier fruits, at least, so that the work could not be commenced as early as should have been done. In arranging the display Mr. Schell was assisted by Gerald L. Holsinger, and the showing made by these gentlemen is going to surprise some of the people of the Sunflower State, who had thought nothing could be done toward making a good show. In the exhibit of Kansas, as is also the case with Missouri and Illinois, the Jonathan apple shows up well. It is remarkable how this variety has kept in storage and the record it has made for itself.

Arkansas also shows excellent Jonathans, but the really showy feature of this exhibit has been the Arkansas Black apples, and no exhibit has attracted more attention than this feature of the Arkansas exhibit. Some of the seedlings for which Arkansas is noted are also shown, and Arkansas peaches and strawberries have made many new friends for themselves. Superintendent John P. Logan is most enthusiastic in his loyalty to Arkansas and Arkansas fruit, and has lost no opportunity to tell visitors of the resources of his state.

Nebraska is another state which has helped to boom the Jonathan apple at the fair, for the Jonathans from Southeastern Nebraska have been as fine as can be grown anywhere. The exhibit of this state is in charge of Superintendent Pollard and Mrs. J. H. Hadkinson. Those persons who have doubted if good fruit could be grown in Nebraska, and even some of the people of Nebraska themselves, have been surprised at some of the products of that state which have been shown, coming as they have from parts of the state which have not been pushed as fruit-growing localities, but where crops have been good for a number of years past. As explained in the report of the Nebraska Horticultural Society in the August issue of The Fruit-Grower, Nebraska is now growing fruits in parts of the state which had been included in the non-fruit sections, and this industry during the past few years has been very profitable.

Iowa's exhibit has been well maintained throughout the season. In the exhibit of this state will be found some of the varieties of apples which are being planted in the Northwestern states, and which are unknown to many fruit-growers from other parts of the country. For instance, the Wealthy is given a prominent place in this exhibit—and well it may be so honored, for the Wealthy is a great apple, and especially for Iowa. It is noteworthy that this apple, which is a summer variety even in Northern Missouri, is a good cold storage variety up in Iowa, and this year the crop of 1903, which had been kept in cold storage, met the new fruit from the crop of 1904 on the exhibit tables of Iowa. The study of varieties like this is one of the educational features of the horticultural exhibit.

MAIN AISLE IN ILLINOIS EXHIBIT.

California, of course, has done her-

The ROGERS

is the earliest of all Dewberries; bears heavy crops of large, firm fruit, that ships well and sells at fancy prices. It's flavor is unsurpassed.

THE ROGERS has passed the experimental stage. It has been sold in nearly every state in the Union, and is fast becoming the most popular Dewberry now in cultivation. My prices are reasonable and I guarantee all my plants to be genuine. Write for descriptive circular and prices. JAS. W. HAMLETT, Alvin, Texas.

Our 1905 Catalogue

will be worth $1 to any one Interested in small fruit. Senator Dunlap Strawberry, Cumberland, Cardinal and Haymaker Raspberry, Mercereau Blackberry and all the leading varieties. Catalogue sent for a postal.

G. S. Christy, Johnson, Neb.

NEW BLACKBERRY

"BRILL"—A cross between a Dew and Blackberry. The largest early berry in the state, as far as I know. Commences to ripen here about May 10th. Very hardy and very productive. Write for prices. I am growing some fine new Texas Peaches: Annie Orr, Arp Beauty (June Elberta), Phil Horton, etc. Address

John J. Brill, Grapeland, Tex.

Strawberry Plants

We have for Fall and Spring an extra fine lot of young, healthy plants, true to name; other plants and trees. Send for Free Catalogue.

John Lightfoot, Sherman Heights, Tenn.
R. F. D. No. 2.

Kansas Raspberry Tips

By thousand or car load. Dealers write for price, references and sample of plants.

Calame Fruit & Plant Co.

MELVILLE, ILLINOIS.

Raspberry Plants

Guaranteed true to name. Cumberland and Kansas, Haymaker and Cardinal; also Lucretia, Austin and Premo Dewberries. Write for prices to

C. G. Moremen, Brandenburg, Ky.

Our Grape Vines

Promise an unusually fine growth. Send list of wants for **Special** fall prices. We can please you.

EUGENE WILLETT
North Collins New York

Clinton Falls Nursery

Have you ever bought Nursery Stock of the Clinton Falls Nursery Company? If not, you should. Then you would receive first-class Northern Grown Stock at right prices, free re-place, fair treatment and assistance in building up an orchard.

Clinton Falls Nursery Co.

T. E. CASHMAN, Pres't & Mgr. Owatonna, Minn.

Kercheval's Nurseries

A fine lot of one and two-year Apple for Fall trade. No agents. Write for prices. Leading commercial varieties.

A. H. KERCHEVAL, Prop.

ELSBERRY, MO.

self proud in her horticultural exhibit, as this state always does. Oranges and lemons, apples and pears, almonds and olives—these are all found on the tables of the California exhiibt. We were told that every fruit which can be grown in California is on exhibition—and we can well believe this is so. Many fruits are shown in jars, in solution, California ranking next to Missouri, perhaps, in number of jars. Figs are shown in all stages of development; prunes fresh and prunes dried; almonds, walnuts—nearly anything you want will be found in the California exhibit, showing the wonderful versatility of the state. A feature is a model of an irrigated orange grove, showing just how the water is applied to the trees. The California exhibit is certainly an excellent one, and visitors can spend much time in it with profit.

Oregon has a good exhibit, in charge of a very pleasant young man named Galloway. There are no frills about this exhibit—simply a showing of good, commercial fruit. The apples have uniformly been of good quality, quite a feature having been made of the Oregon Newton Pippins, which have made a record of which the state is proud. The fruit from this section is all packed in boxes, and the exhibits have been made up, Mr. Galloway says, from the commercial packages. This speaks well for the quality of fruit which Oregon sends out to the world. At the time of our last visit there in August Mr. Galloway had on exhibition some cherries which beat anything in the building. They were Bing cherries, of enormous size and most excellent quality. The meat is red all through, very rich and sweet. The cherries are very firm and of enormous size. Asked as to exact size of them, Mr. Galloway said, "We'll measure them." Twelve Bing cherries placed side by side measured thirteen and three-quarters inches—thus the cherries were more than an inch in diameter. Single cherries measured more than three and a half inches around them. Oregon has prunes on exhibition, too, and at certain times cooked prunes are served to visitors. The Fruit-Grower representative was given a box of these prunes, and must say they were the best he ever ate—large and rich, parting readily from the seed, and without the flatness of some of the prunes on market.

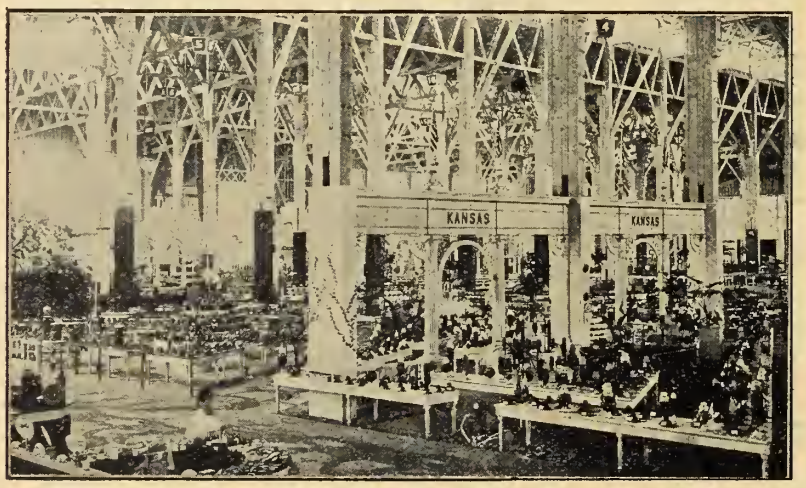
Over in the West Virginia exhibit we found Mr. S. W. Moore, an old member of The Fruit-Grower Family, in charge. Mr. Moore has a good exhibit of apples, and at the time of our visit had some very fine Abundance, Burbank and Gold plums on exhibition. Asked as to whether these plums had rotted this season, Mr. Moore said they had not; that by using the dust process of spraying he felt confident he could control the rot of the plums.

Colorado has a very neat exhibit, a feature being enormous refrigerators, in which small fruits—or large fruits, played, while still in cold storage, either, for that matter—can be dis- These refrigerators, of course, have glass tops and sides, and the fruit presents an attractive appearance. J. H. Crowley of Rocky Ford had sent some magnificent Duchess apples when we were there last, all as smooth as could be, without the sign of any insect about them. In this exhibit also was found a jar containing specimens of the Spencer Seedless apple, which is being pushed by Colorado people. The cross section of this apple showed it to be just as the originators have claimed, free from seeds. It is a decided novelty, and great claims are made for it by the introducers.

Prof. M. L. Dean is in charge of the Michigan exhibit, which has been well cared for throughout the season. Starting with a supply of apples of the crop of 1903, other fruits have been added as they have ripened. A very fine exhibit of currants was made when this fruit was at its best. By the way, it has been remarked many times that about the only fresh fruits from Michigan which are seen on the Missouri River markets are fine currants and red raspberries. These fruits must grow to perfection up there—at least those which are sent out are in great demand.

Wisconsin has cranberries and a lot of apples which are being extensively planted in that state. Such apples as Northwestern Greening, Wealthy, Duchess, Fameuse—all these are grown to perfection in Wisconsin, besides many others, and many growers up there are making a specialty of these.

Texas is to the front in this building—indeed, the Texas people have been claiming all along that Texas Ben Davis apples have outranked the Ben Davis from any other state in the Union. Not a great deal of last year's fruit was available for this exhibit, but the state has a very fine collection of pecans, and this, together with some winter fruit, occupied the tables until early fruit began to come forward from the Lone Star State. An especially attractive feature of this exhibit has been the new varieties which have been shown—such as Gonzales plum, Arp Beauty peach and other varieties which have originated in Texas. Texas Elberta peaches were very fine, and ranked well up with any which were shown from any state.



KANSAS EXHIBIT, LOOKING ACROSS THE MAIN EXHIBIT.

Oklahoma and Indian Territory both have good exhibits, though not so large as some of the states which have been in the business for a longer time. The exhibits from these territories are not what they would have been had it not been for the fact that much of this year's crop was injured early in the season. Two very large watermelons were features of Oklahoma's exhibit at the time of our last call at the exhibit.

Virginia has surprised some of the other states which had not counted upon the Old Dominion as an apple state. The tables of this state exhibit have been kept well covered during the exposition so far, and will be so maintained until the end.

New Mexico has a neat exhibit, in charge of a gentleman who is enthusiastic over the possibilities of that country. We asked him what percentage of the apples on his tables were sprayed, and he promptly replied that none of them had been sprayed, for the simple reason that there are no apple pests in New Mexico! How's that? The fruit was fine, although some of the apples were not so well colored as one would have supposed would have been the case in an irrigated country. At the time of our visit Elberta peaches grown in New Mexico, under irrigation, were being compared with this same variety grown in other sections—and we may safely say the comparison was no injury to the New Mexico fruit. The Elberta peach seems to be improved by irrigation—or at least we thought so while we ate irrigated Elbertas from the Pecos Valley. Some photo-

Fall Planting

The season is now on for placing orders for fall planting. It has been our custom to make frequent announcements in The Western Fruit-Grower. This has been the means of placing a good many thousand fruit trees from

Harrison's Nurseries

in the hands of readers of this paper. The people have had opportunity to test our claims of superiority. That accomplishes our purpose. We have the climatic conditions and the soil, and to these we add right methods of propagating. This results in the tree excellence for which the Harrison Nurseries have become so widely known. The sequel appears in the fact that where we place a small order with readers of this paper one year we invariably receive increased orders the next.

Our Present Tree Stock

is up to the usual high standard. No better showing is possible in **Apples, Peaches, Plums, Pears** and **Cherries** than is to be found right now in our nursery rows. Everything well rooted, strong, thrifty and vigorous. We take every care of small orders and are also prepared to make prompt shipments by the thousand or in carload lots. Our Fall Catalogue shows every variety in all season's apples you would care to plant. The same is true of peaches and other fruits.

We Pack for Safe Carriage

Trees are fresh dug and we guarantee delivery in perfect condition anywhere in the United States. We invite you to send for catalogue and get our prices before placing an order.

Harrison's Nurseries
Box 32, BERLIN, MARYLAND

OUR Strawberry Plants

ARE THE KIND THAT PAY YOU TO GROW

WE HAVE a large acreage of all the standard varieties, and while the season has been very unfavorable, our fields are in very fine condition and with average favorable weather we will have a good supply of plants. Our plant fields are all on new land, which insures you number one plants free from disease of any kind.

The Senator Dunlap is undoubtedly *the best* berry. A ten-acre field of Senator Dunlap and Warfield produced 900 crates at a single picking this season while other varieties, except the Gandy, were practically a failure. Gandy is a very close second to the Dunlap. Our new catalogue for 1905 will tell you all about 80 varieties growing on our grounds.

Our Raspberries have not made such a growth in the past five years as they have this season, which insures us a very large crop of fine plants. Our fields are entirely free from anthracnose. A very large stock of Miller, Loudon and other Red Raspberry.

The New Cardinal Raspberry made an extra fine growth this year, but we do not expect to have enough plants to supply the demand and would advise customers to get their orders in early. We have a large stock and think that we can supply most of them.

Blackberries Our Blackberries have made an immense growth this season. We shipped more than 150,000 plants the past season and think we will have 300,000 plants for next spring's trade. Our plants are the kind that pay our customers to plant and we take extra pains to have them strictly true to name. Write us freely about anything you want to know. Catalogue free. Address

F. W. Dixon, Holton, Kan.

Prompt shipment of Apple Barrels in any Quantity

Omaha Cooperage Co.

SOUTH OMAHA, NEB.

Greenwood County Nursery

We have to offer for fall 1904 and spring 1905, Apple, Crab Apple, Pear, Cherry, Plum, Peach, Apricot, Grape Vines, Gooseberry, Currants, Blackberry, Raspberry, Strawberry Plants, Rhubarb, Asparagus, Roses, Evergreens, Hedge Plants, Forest Tree Seedlings, Russian Mulberry, Catalpa, Soft Maple, Black and Honey Locust.

J. W. HINSHAW, Propr.

EUREKA, KAN.

The Fruit-Grower for 1903

We have on hand a few volumes of The Fruit-Grower for 1903, unbound, a set of which will be sent to any address for 50c, postpaid. Address

The Fruit-Grower Company

ST. JOSEPH, MISSOURI

How to Grow 400 Bu. Big Red-to-Center Strawberries

Over 12,000 qts. per acre, without work and worry. Or will you stay in the old rut and grow only 125 or 150 bu., when you can just as easily grow 375 to 400 bu.? Write me at once. SEND 10c IN A LETTER, and learn how you can do it. Bank and testimonial references; 32 years a practical grower.

JOHN SHANK, Mt. Sterling, Ill.

4,000,000 Peach Trees

Tennessee Wholesale Nurseries

JUNE BUDS A SPECIALTY

No agents traveled, but sell direct to planters at wholesale prices. Absolutely free from disease and true to name. Write for catalogue and prices before placing your order elsewhere. We guarantee our stock to be true to name. Largest Peach Nursery in the World. Address

J. C. HALE, WINCHESTER, TENN.

BLACK LOCUST. RUSSIAN MULBERRY

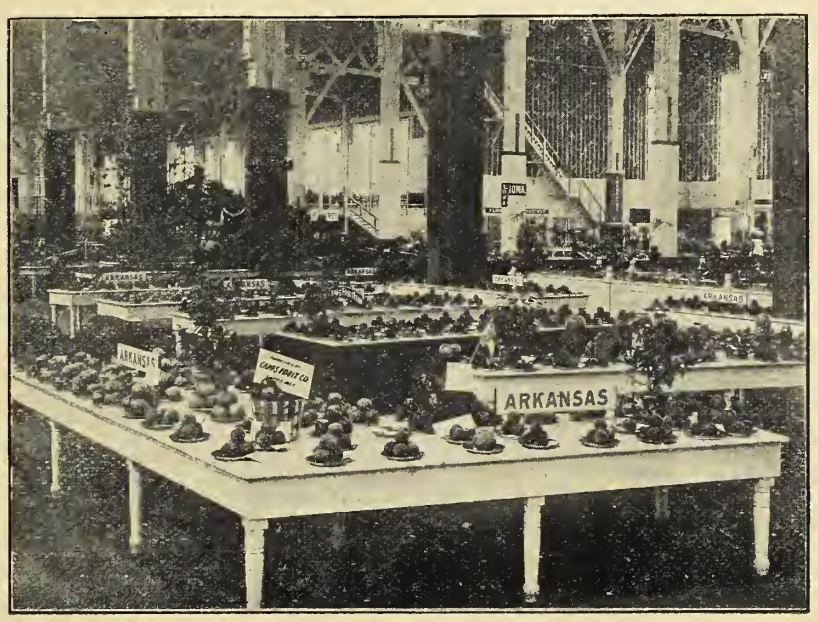
Apple and Pear Seedlings and Graft. Also General Stock for Nurserymen and the planter. Address J. A. GAGE, Beatrice, Neb.

graphs help to complete this exhibit, showing scenes in the wonderful Pecos Valley. A series of pictures of the ranch of Mr. C. Chisholm, Roswell, N. M., will give one a good idea of the possibilities of that country. Mr. Chisholm raises great numbers of hogs, allowing them to graze on alfalfa and finishing them with Kaffir corn.

Canada has a fine exhibit in the Horticultural building, a feature having been made of the fruits in jars. While visiting this exhibit the gentleman in charge gave us considerable information about the process of preserving fruits in liquids. Elsewhere in this issue we publish the formulas used in preserving the various fruits, which differ somewhat from other formulas which have been published in The Fruit-Grower in the past. The gentlemen in charge of the exhibit told us that most of the apples in the exhibit were from trees which had been sprayed. The visitor to this exhibit will be surprised to find the Canadian fruit so highly colored. A great many persons, we believe, have an idea that fruit grown so far north is not so apt to be well colored as that grown farther south, but this exhibit shows that well-colored fruit can certainly be produced in Canada.

There are other interesting exhibits in the building—Arizona, with its exhibit of grape fruit; Louisiana, with its specialties; Washington, with some remarkable fine apples and other fruits; Minnesota, showing what the growers of that state are doing on the very frontier line of the fruit section; Connecticut, with its pictures of private estates in that state—all these and many more will interest the readers of The Fruit-Grower for a long while in the Horticultural building. We have simply tried to point out some of the special features of the building, which have appealed to us. The exhibits of spray pumps, etc., are discussed in another article in this issue, and yet we trust that our readers will examine them as carefully as they have inspected the exhibits of fruits themselves. Truly, the Horticultural building is a thing of beauty.

It should be said in connection with this mention of the Horticultural building that The Fruit-Grower tried to get photographs of some of the other state exhibits, but was unable to do so. On account of the lighting of the building and the numerous posts which cast shadows, it is very hard to get satisfactory photographs. A number of photographs which we had expected to be good ones were unsuited to make cuts, and therefore this article appears without a number of cuts which we had hoped to use. This statement is made by way of explanation, in behalf of a number of exhibits which are in every way worthy of being reproduced in these columns.



ARKANSAS EXHBIT, NEBRASKA AND IOWA IN DISTANCE.

The 1904 Apple Crop.

The size of the apple crop this year is puzzling both buyers and sellers. The former claim there are more apples in the country than there were a year ago, while the growers claim the reverse is true. As a result, few sales have been made as yet, although last year a great portion of the crop had been engaged at this time.

Fungous diseases are at work in New York and Ontario, and newspaper reports are to the effect that the crop there is deteriorating. In the Middle West the small crop which was reported last month is even smaller now. In the Pacific Coast states, and in Colorado and New Mexico the crop is very heavy.

Newhall, the apple man of Chicago, says that prices for the fruit ought to be lower this year than they were last season. For one thing, there will be less export demand, for the European apple crop is large. Then, too, the apple handlers, this firm says, ought to make good some of their losses on last year's dealings. This firm warns the trade against quoting too high prices on the fruit early in the season. This policy last year prevented heavy consumption of apples early, and later the prices were much lower. Newhall especially warns dealers against paying as high prices for box apples as were paid last year. The trade now realizes that putting apples in a box instead of a barrel will not improve the quality. Therefore the dealer cannot afford to pay at the rate of $1 per box for the fruit, while barrel apples are selling for only $1.50 per barrel. Last year much money was lost on boxed apples, accord'ng to this firm, which says:

"Great quantities of the ordinary quality irrigated apples were sent into the market at an average of nearly $1 per box, or at the rate of $3 per barrel f. o. b. shipping points. This price, with high freight rate, meant equal to $4.50 per barrel at storing stations, against about $2 to $2.25 at storing stations for Eastern fruit, often of better quality.

"There could be only one result: The great bulk of the box fruit was absolutely neglected. Where it did not sell at low prices in the fall it dragged along in storage, accumulating charges until finally it was taken out of storage usually at lower prices than when it went in, with a heavy shrinkage.

"I predict that the trade will never again be so hoodwinked at the supposed superiority of the box fruit as last season, and that from now on we shall buy boxes on the same basis as we do barrels and at the same price per bushel, with a slight excess to cover increased cost of packing and no more.

$19.90 BIG PARLOR ORGAN

FOR $19.90 we furnish this big handsome solid golden oak Parlor Organ, stands 6 feet high, 4 feet long and 2 feet wide, latest style for 1904-5, guaranteed the equal of organs sold by others for nearly double the price. Shown by a large picture and fully described in our big free Organ Catalogue sent to any one for the asking.

AT $25.95 to $51.95 we sell other beautiful ORGANS, all made in our own organ factory and sold direct to you at only a little above actual manufacturing cost, at much lower prices than any dealer can buy.

WHY we can build and sell the best ORGANS in the United States for so much less money than all other manufacturers and dealers, is all explained in our new free Organ Catalogue.

OUR NO MONEY WITH ORDER PLAN, FREE TRIAL OFFER, OUR TWENTY-FIVE YEARS BINDING GUARANTEE, all fully explained in the Big Free Organ Catalogue sent on request.

HAVE YOU ANY USE FOR AN ORGAN? If not, have you a friend who could use an organ if the price was low enough, the offer liberal enough, the greatest chance ever known! If so, cut this ad out and send to us, and the catalogue, our several propositions, and our new and most astonishingly liberal offer ever made, will all go to you free by return mail, postpaid. WRITE FOR OUR FREE ORGAN CATALOGUE AT ONCE. Address,

SEARS, ROEBUCK & CO., CHICAGO, ILL.

Berry Plants

WE HAVE THESE

Raspberry
Cumberland, Kansas, Gregg, Hopkins, Miller.

Blackberry
Early Harvest, Snyder.

Strawberry
All the leading varieties.

Gooseberry
Downing, Houghton.

Currant
North Star, Cherry, Red Dutch, Red Cross.

AND OTHER KINDS

Prices to Nurserymen and Planters on application.

Holsinger Bros.

R. D. No. 2.

ARGENTINE, KANSAS

Vincennes Nurseries

W. C. REED, Prop., Vincennes, Ind

We offer for Fall and Spring the following in car load lots or less:
APPLE—2 and 3 year.
PEACH—1 year, all grades.
PEAR—1, 2 and 3 year.
PLUM, JAPAN—1 and 2 year.
CHERRY—1 and 2 year, very fine.

Our 1 year Cherry run 4 to 5 ft. ¾ up in first grade. Also Shade Trees, Small Fruits, Roses, etc.

Send us a list of your wants for prices or call and look our plant over.

The O K Nursery

Stock OK All Marked OK

Price OK Pronounced OK

By Customers When Received

Apple, Peach, Pear, Plum, Cherry, Small Fruits, etc. Located in the famous WASHATAW Valley that produces stock to highest perfection. Address

A. L. LUKE, WYNNEWOOD, I. T.

W. W. CLARK Fruit-Grower

R. F. D. No, 1, ATCHISON, KANSAS

RASPBERRIES, BLACKBERRIES, DEWBERRIES, Etc. Choice plants of standard varieties for sale.

Dewberries

LUCRETIA AND PREMO

I will have for the Fall trade a fine lot of Lucretia and Premo Dewberry roots. Write for prices.

GEO. L. GAST, LE CLAIRE, IOWA

$1,200 to $3,000 a year is being made by the graduates of the

WESTERN VETERINARY COLLEGE

If you are interested write for a catalog. Address Dr. J. H. Wattles, 1102 Holmes St., Kansas City, Mo.

Exhibits of Interest

Some of the Commercial Exhibits Which Ought to Be Inspected

In the wing at the right end of the Horticultural Building will be found some exhibits which will be especially interesting to Fruit-Grower readers. These are exhibits of spray pumps and machinery needed by fruit farmers. No fruit farmer should miss examining these articles, for they are all appliances which are advertised and largely used by fruit growers.

Goulds Mfg. Co.—Perhaps the largest exhibit here is that of the Goulds Manufacturing Company, Seneca Falls, N. Y. This company makes a complete line of spray pumps, and various patterns are on exhibition. This exhiblt includes the ordinary barrel pumps, the Kerowater pump, which mechanically mixes oil and water, the power sprayers, etc. A full line of nozzles of every pattern is shown, and the visitor may see the actual work of each pump and nozzle, if he so desires. The exhibit is in charge of Mr. Maas, who takes pleasure in explaining the different pumps and the uses to which they are best adapted. Not only spray pumps are shown, but pumps of all kinds. The exhibit is most complete in every respect.

Wallace Power Sprayer.—The Wallace Machinery Company, Champaign, Ill., has an exhibit of its power sprayers in this wing of the Horticultural Building. The exhibit is in charge of the elder Mr. Wallace, who explains the workings of the pump. This is hardly necessary, however, for one can tell from the pump on exhibition just about how it works. The Wallace pump is operated from a sprocket on the axle of the wagon. Air is pumped into an air chamber, and this compressed air is used to force the spray mixture through the nozzle. The mechanism of the air pump is so arranged that in going a short distance the wagon will store a considerable quantity of liquid, under air pressure, which is available for use while the outfit stands still. This is one of the newer power sprayers, one which H. M. Dunlap, of Illinois, has used to such good advantage and with satisfactory results.

Dust Sprayer Mfg. Co.—This company has an exhibit of its dust sprayers, including the new power sprayer which is operated by a gasoline engine. The exhibit is in charge of Mr. G. C. Johnson, manager of the company, and inventor of the machines made by the company, who has given much time to the work of dust spraying. Three styles of machines are shown, one to be carried by the operator, the Cyclone, which is loaded on a light wagon, and the new power sprayer referred to. This latter machine has interested many California fruit growers, Mr. Johnson says, who have to conduct spraying operations on a large scale. In addition to the exhibit of sprayers the company has also jars of the different powders used for spraying, which are manufactured by the company. The dust process of spraying is a new thing to many fruit growers who visit the fair, and th's exhibit is an interesting one. Mr. Johnson is prepared to answer all questions concerning his machines, and concerning the dust process of spraying generally.

Frank B. Read Company.—This firm has an exhibit of apple barrel caps and cushions, as well as cushions for apple boxes. This is a comparatively new thing in apple packing, and yet it has been most favorably received. As has been explained in the Fruit-Grower before, the caps or cushions are made of heavy strawboard, with cellular spaces between the outer layers. The cushions are placed in the heads of barrels and take up the slack to prevent the fruit from being bruised. The same sort of cushions are made to fit apple boxes, thus avoiding the bruising of the fruit by the tops and bottoms of the boxes. It is said the New York apples which are exhibited at the fair were all packed in this way, as being best calculated to keep the fruit in good condition. Many Western growers, at least, have never seen these cushions, and the exhiblt will appeal to them with particular interest.

Niagara Gas Sprayer Co.—This is an exhibit which will interest all apple growers, for it shows one of the newer style sprayers, which have not been understood by growers generally. The exhibit is in charge of a gentleman who is always anxious to explain the workings of the machine. The Niagara sprayer is made at Middleport, N. Y., and has been most favorably received by New York fruit growers who have examined it. As this machine has scarcely been introduced, and is not well known anywhere as yet, outside of the locality in which it is made, we hope Fruit-Grower readers will take pains to investigate its workings. The exhibit is in the annex of the Horticultural Building.

John S. Tilley, manufacturer of ladders, Watervliet, N. Y.—This gentleman has an exhibit of ladders, which are particularly suited to the needs of fruit growers. Extension ladders of all kinds are shown, and catalogues describing many other styles are distributed.

A number of exhibits in the Agricultural building are deserving of special interest on the part of Fruit-Grower readers.

The Aermotor Company.—One of the most interesting exhibits of the kind on the grounds is apt to be overlooked, if one is not careful. This is the exhibit of the Aermotor Company, of Chicago, manufacturers of windmills of all kinds. The exhibit is just west of the Agricultural Building, and is a most interesting and instructive one. The exhibit includes windmills of all sizes and for all purposes. Windmills simply to pump water for stock, windmills to pump water for irrigation purposes, others to pump water, etc.; all kinds of windmills, in fact. A feature of the exhibit is a barn with windmill on top, which is arranged to show how power can be furnished by windmill for grinding feed, etc. A mill on the roof of the building is connected by a shaft with a corn sheller on the lower floor of the barn; corn is placed in the hopper, is at once shelled, and the shelled corn is elevated and fed into a feed mill, and comes out again in the form of meal, ground to almost any degree of fineness. By simply shifting a belt one can transfer the power from the corn sheller and grinder to a sawmill, for sawing wood; to a grindstone, or to use in any desired way. Besides making the windmills, the Aermotor company makes all the other machinery shown in the exhibit. The article by Mr. Steele, of Nebraska, in this issue, describes his irrigation plant, using an Aermotor windmill, and the exhibit at the fair shows the various pumps used for this purpose. The large pump, which is kept constantly in operation, lifts a barrel of water at every stroke. This is a most interesting exhibit, and we have no doubt that visitors who carefully examine it will go away with a determination to utilize some of the power which can be secured by simply harnessing the wind with the Aermotor.

F. E. Myers & Bros.—The exhibit is located in the south end of the Agricultural Building, and will be found particularly interesting to Fruit-Grower readers, for the exhibit includes a full line of the spray pumps made by this firm. This company, as is generally known, makes all kinds of pumps, hay tools, door hangers, etc. The exhibit includes all these, for, in addition to a full line of spray pumps, all other styles are shown, up to a large irrigation pump, which lifts 12,000 gallons of water per hour. This firm advertises in The Fruit-Grower each season, and we know our readers will be glad to inspect the exhibit.

Whitman Agricultural Company.—This firm has a good exhibit of corn shellers, hay and cotton presses, cider mills, etc. Located in St. Louis as this firm is, it has a good opportunity to make a good showing, and it has improved the opportunity. The exhibit is in the Agricultural Building, and will appeal to all Fruit-Grower readers, because of the cider mills shown, if for no other reason. A competent person is in charge of the exhibit at all times, and will be pleased to explain any feature of the exhibit to callers.

Fairbanks, Morse & Co.—This firm has exhibits in several buildings, principally in the Agricultural and Machinery buildings. In the former the exhibit is confined to gasoline engines for farmers' use, including the well-known "Handy-Man" engine, and windmills of all kinds. Among firms which furnish machines to provide power for farmers' use, whether from windmills or gasoline engines, none stands higher than this firm, and its exhibits at St. Louis are in keeping with the standing of the firm.

Kemp & Burpee Mfg. Co.—In the Agricultural Building will be found a working exhibit showing how the Success Manure Spreader, which is manufactured by this firm, works. This manure spreader is one of the best-known machines of the kind on the market, yet we daresay there are thousands of farmers who will visit the fair who have never seen one of the machines in operation. The machine can be seen at work, however, in the Agricultural building, using scraps of paper instead of manure, but the principle is just the same. One has no idea of the economy there is in using a machine of this kind

SICK HALF THE TIME

The History of Kidney Disease, Liver and Bowel Disorders, and Female Trouble is One of Much Weakness, Suffering and Despondency.

Many Hopeless Victims Have Been Won Back to Health and Strength by the Timely Use of the Right Remedy.

In diseases of the kidneys and urinary organs men and women once strong, hearty and vigorous are soon reduced to comparative helplessness. At times they are able to get about and do odd jobs, at others prostrated completely. This was the experience of thousands of persons who owe their present good health to the great healing and strengthening effect of Prickly Ash Bitters--that marvelous medicine which has done so much for working people. Why endure all this distress when a remedy that has proved its power and effectiveness in such ailments can be so easily obtained? Don't give up, no matter how much fruitless doctoring you have been doing. Prickly Ash Bitters has cured where every other remedy tried has failed, its superior qualities being due to its four-fold cleansing and strengthening effect. It is a kidney tonic, a liver and stomach stimulant and a bowel purifier combined, therefore it exercises its cleansing and restorative influence uniformly in every part of the body. Diseases of the kidneys, liver and excretory organs are its specialty, and physicians have been forced to concede merit to it in this connection while voicing their prejudice against proprietary medicines as a class. For the weakening and distressing irregularities peculiar to women Prickly Ash Bitters has obtained the very highest endorsement. It performs a marvelous transformation. The tired, weak, despondent, pale and bloodless victim of these ailments is soon a strong, bright, happy woman with rosy cheeks and cheerful spirits.

Accept no substitute. Insist on having the genuine Prickly Ash Bitters with the large figure 3 in red on the front label.

Sold by Druggists. **Price $1.00**

89 CENTS FOR A NEW 1905 HEATING STOVE

HOW WE CAN SELL a new 1905 model high grade heating stove under our BINDING GUARANTEE for only EIGHTY NINE CENTS. Not a deposit of 89 cents, with something to pay later on, but just 89 cents to pay; no more, no less. HOW we can do it and WHY we do it is fully explained in OUR NEW FREE 1905 SPECIAL STOVE CATALOGUE, just out.

OUR FREE STOVE CATALOGUE illustrates and describes our New 1905 Style Heating Stove, which we sell for 89 cents; explains our new and marvelously low price making policy, illustrates and describes an almost endless variety of Heating and Cooking Stoves and Steel Ranges; all kinds and styles of Hard Coal, Soft Coal and Wood Heating Stoves, Steel Airtights, direct and double draft; plain and fancy cast iron and steel and iron direct draft, double draft and base burning HEATING STOVES. EVERYTHING IN STOVES at prices so astonishingly low that you will be surprised and pleased.

OUR FREE CATALOGUE explains our 30 Days' Free Trial Plan, our Pay After Received Terms, our Safe Delivery Guarantee, explains our Binding Quality Guarantee, explains our plan of shipping the day your order is received, so you will only have to wait a few days; tells how we make freight charges very low no matter in what state you live. OUR FREE CATALOGUE shows an illustration of our own stove foundry, the largest in the world; tells all about why we can make prices on all kinds of stoves so very MUCH LOWER THAN ANY OTHER HOUSE.

OUR FREE CATALOGUE is the largest, handsomest, best illustrated, most interesting and MOST COMPLETE special stove catalogue ever published and tells everything known about stoves.

WRITE FOR OUR FREE STOVE CATALOGUE. Cut this ad out and send to us, or on a postal card say: Send me your FREE Stove Catalogue, and THE BIG STOVE CATALOGUE will go to you by return mail, postpaid, FREE. You will get the most astonishing stove offer ever heard of; you will receive a new and most astonishingly liberal stove proposition.

DON'T BUY A STOVE anywhere and tell your neighbors not to buy a stove of any kind until they first write for our New Special Stove Catalogue and get The Big Book, THE NEW OFFER OF OURS; OUR LATEST STOVE PROPOSITION. WRITE TODAY. DO IT NOW. WE WILL TELL YOU SOMETHING YOU OUGHT TO KNOW. Address,

SEARS, ROEBUCK & CO., CHICAGO, ILLINOIS.

We Believe in Protection

TREE PROTECTORS

will protect your trees from rabbits, mice and borers; will also protect the stems from sun scald and can be left on during the summer, and will not injure the tree.

The cut represents our Tree Protector after having been applied.

Same are made of veneer, and are pronounced the cheapest and easiest applied of anything ever used.

St. Louis Basket and Box Co.

Second and Arsenal Sts., ST. LOUIS, MO.

One Million

Choice Apple and Peach trees to offer for Fall. Also full line of all other kinds of Nursery Stock. Get our prices before placing your order. We will save you money. Wholesale catalogue now ready—send for copy. Send for descriptive circular and testimonials.

TREE PROTECTORS at $5 per Thousand.

Hart Pioneer Nurseries

Box E, Fort Scott, Kas.

THE DAVIS WIRE FRUIT

Tree Protector

The Best in the World. Easy to put on. Trees grow natural and never bothered by rabbits. Write for circulars. Pat. Jan. 1, 1901.

JOHN W. DAVIS, Jr. CLARKSVILLE MISSOURI

Seedlings

Black Locust, Maple, Catalpa, Elm, Mulberry, Osage and Apple seedlings at low retail and wholesale price. Send us a list of your wants, or ask for our Catalogue.

Fairbury Nurseries

FAIRBURY, NEB.

Kansas City Nurseries

A general line of Nursery Stock, WHOLESALE and RETAIL. GRAPE VINES, a heavy stock of Concord and Moore's Early, one and two-year, Worden Niagara, etc., one-year. Small fruits, Rhubarb, Asparagus, Ornamental Shrubs, Cal. Privet, etc.

We publsh the best and cheapest 80-page Co-operative illustrated descriptive Catalogue in the market of which we have just issued a new edition.

This is the great Railroad center of the West, and we can ship drect to almost any point without transfers.

Blair & Kaufman

Office 233-34 Rialto Bldg. Kansas City, Mo.

CUT IN TWO

Our prices on all our Nursery stock. You ask why? We are closing our entire stock this fall and next spring and they must go. Prices below wholesale to planters. Write **Today** for price list. Very best stock.

Climax Nursery Co., Draper, Va.

FOR CLOSE PRICES ON

Apple, Plum, Pear, Cherry, Peach and Grape Vines

WRITE

WOLVERINE NURSERIES

Wholesale & Retail, Paw Paw, Mich.

G. E. PRATHER, JR., Propr.

Graves Peach

An early yellow freestone, ripening a week before Crawford's Early. Trees from the orlginator have seal attached. Prices free.

W. J. GRAVES, Originator

PERRY, OHIO

until one has seen the Success spreader at work.

Smith Manure Spreader.—This machine, manufactured by the Smith Manure Spreader Co., Chicago, is exhibited in the Agricultural building. The exhibit consists simply of a machine at work. With power furnished from an electric motor, the wheels of the wagon revolve, and scraps of paper are scattered, just as the manure is distributed in the field. Every fruit farmer is interested in the economical distribution of manure, and should therefore inspect this exhibit at the fair.

Johnston Harvester Co.—This firm is known to Fruit-Grower readers principally as being the manufacturers of the Johnston disc harrow, which has an extension, permitting it to work up under the branches of fruit trees, while horses are out in the open. But this firm manufactures a big line of implements besides this disc harrow, as is evidenced by their exhibit in the Agricultural building. The firm has some disc harrows in the wing of the Horticultural building also, but Mr. Sage, who has charge of the exhibit, stays over in the Agricultural building, and the harrows are on exhibition there also. A feature of this exhibit are corn harvesters, wheat headers, disc harrows of all kinds, and cultivators. Mr. Sage is always glad to explain the merits of the Johnston Harvester Company's goods, and the exhibit is a very attractive one. We asked Mr. Sage where was the best market for the monster wheat headers, and he said that they sold a great many of them in Argentine Republic, having recently made a shipment of 1,250 of the machines to that country. This shipment comprised 125 carloads, and was a very large export order.

Midland Mfg. Co.—This is one of the newer firms at the exposition displays, but at the same time it is making a good record at St. Louis. The Midland Mfg. Co. is located at Tarkio, Mo., in the heart of one of the best farming sections in the world. Its cultivators, therefore, represent the best experience in making machines of this kind, for the people up there know what is needed. The exhibit in the Agricultural building cannot fail to impress persons interested in cultivated crops. The fact that Mr. David Rankin uses them on his model farm in Atchison County, Mo., is sufficient evidence that the cultivators made by this firm are all that they should be. Besides the regular exhibit of the firm, the Midland Company gets considerable advertising from the fact that the cultivators shown in the picture of the large corn field of the Missouri exhibit are Midland cultivators.

The Hallock Weeder.—This implement, which is so largely used by fruit growers, is exhibited in the wing of the Horticultural building. One can readily appreciate the fact that this implement will save lots of hand labor on the fruit farm, for the flexible teeth with which the Hallock weeder is equipped make it the next best thing to the use of the hoe among strawberries, bush fruits, etc. Scores of these implements are now used on fruit farms, and yet many other growers have never examined one of the machines. A good opportunity will be offered to examine the weeder at the fair, and we recommend that all our readers inspect the exhibit.

McDonald Bros.—This firm has on exhibition in the Agricultural building the pitless scale which has been advertised in The Fruit-Grower lately. A scales which will give good service, and yet which does not require the digging of a pit, will certainly be popular with farmers everywhere, and in its exhibit the McDonald company shows a scales of this kind. The attendant in charge gladly explains the mechanism of the scales to visitors. and the exhibit is a very popular place, for the reason that, to show how accurately the scales work, all visitors may have their weight taken, if they so desire.

Hench & Dromgold, York, Pa.—This firm is one of the best known agricultural advertisers in America, and its goods are known everywhere. For that reason an exhibit at St. Louis was hardly necessary to introduce them to farmers, but still all farmers will be interested in this exhibit at St. Louis, for it includes all that is latest and best in the way of cultivators and other implements. The exhibit is well arranged and cannot fail to interest Fruit-Grower readers. Look it up in the Agricultural building.

Campbell Fanning Mill Co.—This firm is a liberal advertiser in the farm papers, and yet it realizes that farmers will like to see the machines they buy, and accordingly a good exhibit has been arranged for St. Louis. Mills of all kinds are shown, together with screens of various sizes for the different grains. This machine is being pushed aggressively now, and every farmer who is contemplating purchasing a fanning mill should look up this exhibit, for the Campbell mills are making a splendid reputation for themselves, and have many points which commend them to good farmers. This exhibit is in the Agricultural building.

Aspinwall Mfg. Co., manufacturers of potato machinery.—This firm, which makes a specialty of potato planters, potato diggers, etc., has a very interesting exhibit in the Agricultural building. This firm is well known, and its machines are used everywhere. Yet the exhibit at St. Louis will interest all farmers, for all classes of machinery are shown and an attendant in charge explains just how they work in the field. General farmers can well afford to examine these machines, even though only a small acreage of potatoes be grown.

International Harvester Company.—This company has a very complete exhibit of all the lines of goods it makes. Of course, as is well known, this will make a big display, as a number of companies making harvesters are included in the International Company. The exhibit is a splendid one, in charge of gentlemen who are glad to explain the merits of the different classes of machines. It would seem that about any kind of a machine anyone can want will be found in the exhibit of this company, and it is well worth the careful study of every farmer who visits the fair. The exhibit occupies considerable space in the Agricultural building.

Incubator Exhibits.—Not all of the incubator manufacturers have improved the opportunity offered at St. Louis, but a number of different makes of machinery are shown. Among those which the representatives of The Fruit-Grower noticed were machines of the Prairie State Incubator Company, Cornell, Reliable and Cyphers Companies. The different sizes of machines made by each company are shown, as well as other poultry supplies. A feature of the exhibit of the Cornell Incubator Company is a row of twenty-one glass jars, in which are shown the various stages of development of the chick during incubation. In the first glass is shown the condition of the germ in the egg at end of first day, and so on down the line, each jar showing the young chick one day further developed. This exhibit will certainly interest all persons who have never investigated for themselves just how the check is developed in the shell.

Mayer Fertilizer & J. Co.—In the southeast corner of the Agricultural building will be found the exhibit of this firm. The exhibit includes the well-known "Anchor Brand" of commercial fertilizers, and also samples of tobacco dust, which is largely used by fruit-growers as a remedy for woolly aphis. This firm is one of the foremost in pushing the use of tobacco dust for this purpose, and has done business with a great many of our readers. As is well known, tobacco dust is recommended by the Missouri Experiment Station as a remedy and preventive of woolly aphis, and for that reason the Mayer Company has an exhibit which includes this product. The exhibit will be found instructive to all who examine it.

OUR FREE PAINT SAMPLE OFFER

Cut this ad. out and mail to us, and we will send you **FREE** by return mail, postpaid, our **Big New Paint Color Sample Book.** This free book contains samples showing the **exact color** of every shade of ready mixed **House, Barn, Graphite-Creosote, Floor, Roof, Mineral, Enamel and Buggy Paint,** also everything in paint and painters' supplies, including **oils, lead, varnishes, dry colors, stains, brushes, sundries, etc. The free book contains a big fund of information on how to paint,** how to select colors, kind of paint to use for different work, just how much paint is required to cover a given space, makes everything so plain that anyone without previous experience can do almost any job of painting. **The free book shows a number of buildings in colors,** intended to aid you in selecting colors for body, trimming, inside, etc.

50c PER GALLON for highest grade Seroco Weather-proof MINERAL, BARN, ROOF and FENCE PAINT.

85c PER GALLON for highest grade ready mixed house paint, our Seroco, our own special ready mixed paint for houses, for wood, brick, stone or iron surfaces, for finest inside finish or coarsest outside work, is sold under our **binding guarantee as the best paint made,** will cover double the surface, last twice as long, at one-half the cost of other paint, never cracks, peels or blisters, **guaranteed for five years,** and will look better at the end of five years than other paint will after one year. Testimonials from painters everywhere and color samples of Seroco in our free color sample book. **IF YOU WANT TO PAINT YOUR HOUSE, BARN OR OTHER BUILDINGS,** don't fail to get this **FREE PAINT SAMPLE BOOK and SAVE ONE-HALF ON THE PAINT YOU NEED.**

Address, SEARS, ROEBUCK & CO., CHICAGO, ILLINOIS.

SPRAY PUMPS

The Pump That Pumps MYERS SPRAY PUMPS Double-acting, Lift, Tank and Spray **PUMPS**

Store Ladders, Etc. **HAY TOOLS** of all kinds. Write for Circulars and Prices.

Myers Stayon Flexible Door Hangers

with steel roller bearings, easy to push and to pull, cannot be thrown off the track—hence its name—"Stayon." Write for descriptive circular and prices. Exclusive agency given to right party who will buy in quantity.

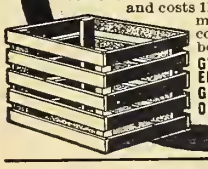
F. E. MYERS & BRO. Ashland, Ohio.

ONE MAN'S PAY SAVED

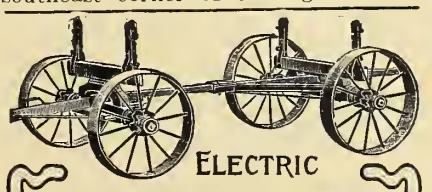
Where three men were formerly needed to gather and pack fruits and vegetables, only two are now required when our ventilated

BUSHEL CRATES

are employed. They keep fruit in better condition. These crates are strong, staunch, durable, neat, clean and convenient. No. 1 Crate is extra heavy and costs 11c. No. 2 Crate is medium heavy and costs 9c. We send booklet 18, free.



GENEVA COOPERAGE CO. GENEVA OHIO



ELECTRIC

THE CORN FARMER

Particularly the one who has learned to save that half of the crop which is in the fodder needs our help. He needs us because we make the famous low-down, easy-to-load

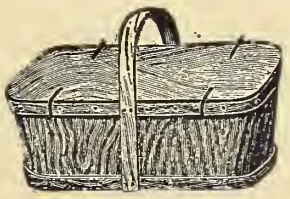
Handy Electric Wagon

The name pretty near tells the whole story. One man can put a whole load of fodder on this wagon from the ground, laying each bundle to its proper place. It's so low you see. It's the best thing ever invented for hauling ensilage corn to the silo. There never was anything so good for use in the hay and grain field. But it's just as good on the road. It's ideal for hauling hogs to market. They just **can't be up-set.** Strong enough to bear any load your team can pull. Next to our wagon the best thing is a set of our low-down **Electric Steel Wheels** with broad tires, (up to 8 inches) on your ordinary farm wagon. Nobody can ever guess how long they will last. But then you should send for our new illustrated catalog and read all about them. Ask for it. It's free.

Electric Wheel Co.

Box 217, Quincy, Ills.

WE MAKE ALL KINDS OF BASKETS



BASKETS

ALSO THE

Hawkeye Tree Wrapper

BURLINGTON BASKET CO.

Burlington, Iowa.

This Lightning **Lice Killing Machine**

kills all lice and mites. No injury to birds or feathers. Handles any fowl, smallest chick to largest gobbler. Made in three sizes Pays for itself first season. Also *Lightning Lice Killing Powder, Poultry Bits, Lice Murder, etc.* We secure special low express rates. Catalog mailed free. Write for it.

CHARLES SCHILD, Ionia, Mich.

Make your own Fertilizer at small cost with

Wilson's Phosphate Mills

From 1 to 40 H. P. Send for catalogue.

WILSON BROS. Sole Mfrs., Easton, Pa.

Gardening Department

This department is conducted by Henry Field, a market gardener and seedsman of Shenandoah, Iowa, in the southwestern part of the state. Besides his regular garden, he has extensive experimental or trial grounds the reports from which appear exclusively in this paper. Fruit-Grower readers who want information along garden lines are invited to write Mr. Field and tell him their troubles. He will be glad also to have you send in samples of new sorts of vegetables and flower seeds for testing in his trial grounds.

Comparative Tests of Standard Varieties of Onions.

In my trial grounds this year I made a careful test of the different varieties of onions that are in common use. The ground was low and rich, but well drained. Seed was planted rather late (May 10)) in rows a foot apart, using at the rate of five pounds of seed per acre. This was pretty thick seeding, and I aimed to thin out the plants later, but changed my mlnd and let them stand that way.

The onions were pulled about August 20, and all were fully ripe. Here is the table of yields per acre, as figured from the weights, of the plots I had:

	Lbs.
Southport White Globe	833
Globe Red Wethersfield	787
Red Wethersfield	787
Prizetaker	625
Australian Brown	602
Yellow Globe Danvers	602
White Portugal or Silverskin	579
Large Red Globe	579
Early Red Globe	532
Red Wethersfield (old seed)	509
Large Red Globe (old seed)	486
Silver King	394
New Queen	370

All were new seed except the two noted, which were put in to see what the value of old seed was. It will be noticed that while the old seed made a fair yield, it was not near equal to the new seed and on an acre would make a big difference in the value of the crop. At 50 cents a bushel it would amount to $140 an acre difference on the Red Wethersfield. So much for the importance of being careful to get the best of new seed.

There has been considerable discussion as to the comparative value of the Globe Red Wethersfield as compared with the standard flat type. With me, as will be noticed, they made exactly the same yield, but the Globes were the best looking onions and would bring the best price. The color and shape are both better liked. The Prizetaker is generally at the head of the list for yield, but for some reason it did not hold its own this year. The Queen and Silver King, while comparatively low on yield, are early and sweet and sell well on that account, so they pay about as well as any.

Sowing Onions Now for Spring Use.

There has been some talk lately of sowing onion seed in the fall and letting them stand out all winter for bunching early in the spring. I have never tried, but will do so this fall. White Portugal is said to be the best and hardlest for this purpose, and I will drill in some at once where I took off the big onlons. I will mulch some and leave some uncovered, and see what I will get for bunch onions early. Sets will sometimes live over if set out early in the fall, and I believe the live plants will. Some of you better try it, too.

Cabbage on the Trial Grounds.

I had a number of varieties of foreign cabbage on trial this summer besides all the standard native sorts. In the early cabbage I found nothing new worth keeping. The new Danish Summer Ballhead does not head well for me. It is too loose and too uneven. The Eureka, on the contrary, makes very solid little heads, uniform in size and appearance and as early as Wakefield. It has no advantage, however, over Wakefield unless a flat head is preferred to a pointed one. On the whole, I believe that the Wakefield has not yet been beaten for a first-class early cabbage.

For second early I like the All Head best, with Henderson's Early Summer as second choice. A German sort called Glory of Enkhuizen is a very fine sort. It is the same season as All Head, but rounder in shape and very hard. It is more like the old Deephead, but earlier. I am of the opinion it would be worth growing here, as there is considerable call for a very hard round cabbage for summer use. Savoy cabbage did about as it always does, made a soft loose head of excellent quality. Red cabbage was none of it very large. The standard Mammoth Red Rock seemed to be the best of the lot. Hollander (Danish Ball Head Winter) was almost a failure again. In the northern part of the country it does finely, but here in the Central West it is sure no good. I have tried it for several years, and failed every time. It is too long-legged, heads too small, and blights easily with hot weather.

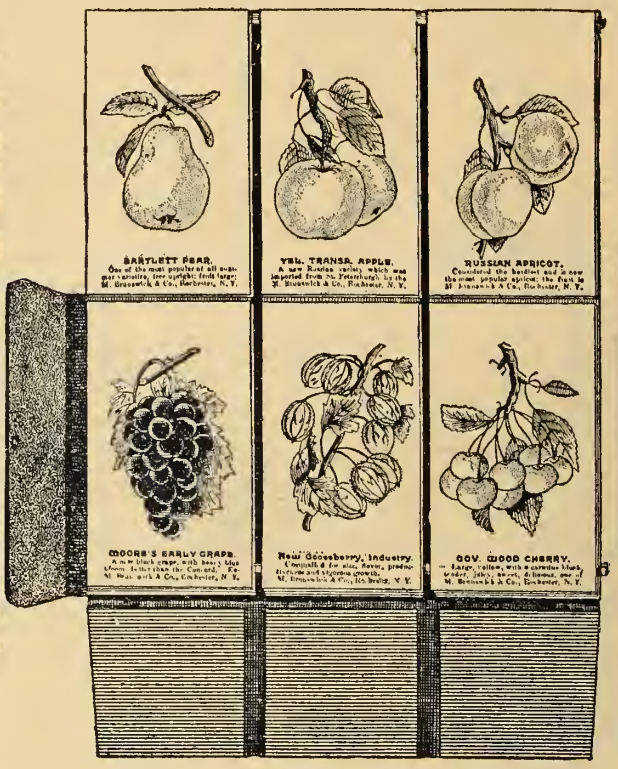
Of the late cabbage, the Autumn King is the largest, but it is coarse and not very firm. The Surehead and Flat Dutch are good, as in fact they always are. The new Corn Belt is best of all. It is an improved strain of Surehead, and seems to stand the hot summer of the corn belt country better than any other kind we can get. I have lots of them now that will weigh, 12, 15 and even 18 pounds. They run remarkably uniform, too. I have a field of about 10,000 of them growing for market, and in walking through them you will notice often a dozen in a string as like as peas in a pod, all big smooth fellows close to the ground, and with wide-spreading leaves meeting across the rows.

A Desirable Onion.

I often get letters inquiring for white top sets, which most people consider superior to the ordinary yellow or red top sets. I have so far been unable to get enough of a stock of them to be able to help out my friends with them. If any of the Fruit-Grower readers have these

Nurserymen's Fruit and Ornamental Plates

An experience of over thirty years and our unequaled facilities have made our plates leaders. They are used by the leading nurserymen and agents in the United States and Canada. A trial order will convince you of their superiority.



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NEW STYLE FOLIO, OPEN.

Send for Catalogue and Prices

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ROCHESTER, NEW YORK

ESTABLISHED 1889

LET YOUR MONEY WORK

Handsomely Illustrated Book tells how $300,000.00 has been loaned on City Improved Realty without the loss of a dollar. Letters from men of all classes testify to their success with us.

Absolute Security
Six Per Cent Net to you.

Send Postal for this book today

FRED. A. H. GARLICHS

6% SAFE DEPOSIT BLDG. ST. JOSEPH, MO. 6%

FELT ROOFING 62 CENTS PER ROLL.

2-Ply Felt Roofing only 62c per roll; 3-Ply Felt Roofing 85c per roll. Each roll contains 108 square feet. Highest grade made, strictly weatherproof; anyone can apply it; costs less than labor alone for laying shingles. Red rosin sized sheathing paper, 75 cents for 500 square feet; weight. 40 pounds. For free samples of roofing and building paper, instructions for using, complete catalogue, the lowest prices ever heard of, OUR ASTONISHING OFFER AND GUARANTEE, CUT THIS AD OUT AND MAIL TO US TODAY. Address,

SEARS, ROEBUCK & CO., Chicago.

Price POSTPAID $1.50

COMPLETE OUTFIT. ABOVE CUT ONLY SHOWS OUR PRESTO RAZOR.

Why Not Shave Yourself?

Without considering the healthful advantages arising from this habit, have you realized what it means from an economic standpoint?

If you visit the barber 3 or 4 times a week just figure out what this means to you in a year, and then consider what this amounts to in a life-time. We think you will be surprised at the result. It also has other advantages too numerous to mention.

Do you know that the PRICE OF TEN SHAVES will put you in possession of a complete shaving outfit? One that will last you a life-time.

To introduce our PRESTO MAGNETIC Razor to the shaving public we are offering at a price that cannot be duplicated hy any firm in the U. S. (when quality of goods is taken into consideration), an outfit consisting of our PRESTO MAGNETIC Razor (full hollow ground and electrically tempered.) This secret process of tempering insures a uniformity of temper not possible to ohtain in a razor tempered by fire heat.

Presto Shaving Strop. A double reversible strop fitted with patent swivel made of best quality black satin leather and canvas web, Russian bristle lather brush and a cake of pure Shaving Soap.

This outfit if bought of a dealer would cost you at least $3.00. We climinate all dealers' profits, and when you order direct from us you are buying from the manufacturers and you save the enormous profits that the various dealers in cutlery reap.

You run no risk, as all goods are sold under our guarantee. "If not exactly as represented money refunded or goods replaced at your option. Send for our booklet, "Side Lights on Shaving." It will interest you and it's free for the asking.

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$1200 a Year for Life

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onions I venture to say they could find ready sale for the sets by advertising them. A gardener at Spearfish wrote to me the other day to know where he could get five bushels of them.

Dahlias From Seed.

It is not known to many flower lovers that dahlias can be grown from the seed almost as easily and quickly as from the bulbs. The seed is not very expensive, and at a small cost a big supply of handsome dahlias can be grown. I planted two ounces of seed this spring, and the two rows thirty rods long are a blaze of color now from one end to the other. While some of the blooms are of only medium grade, many are of the very finest. Almost every plant is in bloom, and often twenty blooms to a plant. Each plant will make a half dozen or so of tubers, and these can be saved for planting next spring. Try it next spring.

The Sweet Corn.

Sweet corn seems to be of better quality than common here this summer. The late varieties are at their best now, and I never saw better. The White Evergreen seems to be the best. It is an extra good strain of Stowell's Evergreen, of a very clear white color and with uncommonly deep grains. The old Stowells is hard to beat, and the Mammoth is the biggest of all. It has too large a cob, however, and is rather a disappointment when cut off. The Country Gentleman is the same as ever, small, delicate and sweet. It makes several ears to the stalk like popcorn, and this makes up for its small size. In quality, for a fine trade, it cannot be beaten. Of the earlies, the Ford's Early and the White Mexican are about tied for first place. Both are about the same season as Cory, and of far better quality. First of All and Peep o' Day are very early, and also very small and poor. Still they are the first to be ready to use and taste pretty good when you are hungry for new corn.

HENRY FIELD.

Eastern Edition of the Fruit-Grower Postponed.

Last month we announced that, beginning this month, we would begin publishing an Eastern edition of The Fruit-Grower. This was found to be impracticable, however, on account of our printing so many extra copies of this issue, and therefore the Eastern edition will not be inaugurated until next month. As announced last month, we have made arrangements with Mr. Gabriel Hiester of Harrisburg, Pa., to furnish several pages of matter each month, which will be particularly interesting to our Eastern readers. After our papers have been printed for the states west of Ohio, including that state, we will take out some of the matter, which is more suited to Western conditions, and insert instead the new matter furnished by Mr. Hiester. Then the papers will be printed for our readers living in states east of Ohio.

It will require considerable time to get the new plan into good running order, but we believe it will result in The Fruit-Grower being made a much better paper for all its readers. We shall try the plan, at any rate, and see how it works.

In the meantime, we urge our readers everywhere to help us extend our circulation—which is another way of improving the paper. If your own subscription has expired, renew it today, and if possible send several new subscriptions with your renewals. Do this at once, if you please.

Dewberry Culture in Central Eastern Iowa.

During the past twelve years I have been growing the Lucretia dewberry with success; have not had a single failure of any one year. The lightest yield was after the severe winter of 1898-99, yet not an entire failure. Some of my first planting was on low wet ground, and after the cold winter referred to I plowed up several acres where plants were injured. Inn 1896 I set two acres, rows seven feet apart and plants five feet apart in rows. On these two acres I set in every other row every sixteen feet a peach tree, 285 trees on the two acres. I cannot now give the yield of berries only for the past three years, as I had other vines. In 1902 I picked 4,340 quarts from the two acres; sold at $2.75 per 24-quart crate; total, $475.00. In 1903 picked 3,640 quarts, sold for $375.00. In 1904 I thought my vines were almost ruined by the severe cold winter, but I was happily disappointed, for we picked 3,110 quarts and sold for $322.00.

I will give the way I grow the dewberry. There may be better ways, yet I have not found a better way. I now plant in rows six feet apart, with plants five feet apart in rows. I cultivate as often as is necessary to keep clean of weeds; I use a one-horse cultivator, and I always go the same way. By doing so, the cultivator will straighten the vines all out in a straight narrow row. Now bear this in mind: If you do not cultivate, the vines will run all over the ground, but the cultivator will keep the ground clean and the vines in a narrow row. The first year after planting I drive small stakes in the rows about every twenty feet, two feet high, and staple a wire on top; then trim the canes to about three and one-half to four feet and tie them to wire. The new canes for the next crop will trail on the ground. Cultivate the same each year and trim and put on wire. Some growers do not use wire, but leave the bearing canes and new growth all mixed up together. This makes the picking of the fruit very hard and unpleasant for the berry pickers. This past spring I set two acres more, half Lucretia and half Premo. The Premo has now been fruited for several years and proves to be a fine berry. The only advantage it has over the Lucretia is that it ripens one week ahead of the Lucretia. This gives the grower early berries and good prices.

I have never been troubled with any insects or disease on my vines. The dewberry will stand more drouth than any small fruit, as the roots run deep into moist soil. I find the dewberry a good shipper. While the berry is large they are firm and bear shipping well. For the past five years I have been shipping by express successfully to a groceryman at White Lake, S. D., 560 miles, almost every day during berry time. I mention this to show that the Lucretia is a good berry to ship to a distant market.

Le Claire, Iowa. GEO. L. GAST.

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LADIES IF YOU HAVE ANY NEED OF AN UP TO DATE, STYLISH TAILOR SUIT, WAIST, SKIRT, CLOAK, CAPE or JACKET, if you could use a fine fur collarette, scarf, boa or fur neckpiece, if you want to wear the most fashionable FALL AND WINTER STYLE in any of these lines, then don't fail to cut this ad. out and send it to us with your name and address. You will receive by return mail, FREE, the grandest LADIES' FALL AND WINTER CLOTHING OFFER ever heard of, with a big book of beautiful pictures, showing the newest New York and Chicago styles for everything in Ladies' and Misses' Wearing Apparel for 1904-05, a wonderful variety, the very latest of everything, such a style book and Fashion Authority, showing such attractive prices as cannot be offered by any other house.

DON'T BUY a single garment at any price this fall and winter for yourself or the girls, until you first see our NEW BOOK OF FASHIONS No. 126B, sent FREE to anyone. It is a wonder, it will please you immensely. You never saw such attractive styles offered at such wonderfully low prices; you have never had any firm make you such liberal offers or such liberal terms as we offer—all explained in the FREE Book of Fashions No. 126B. Our prices this season on cloaks, capes, jackets, plush and fur coats, fur scarfs, tailor suits, dress skirts, underskirts, waists, wrappers, etc., are simply astonishing.

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and low there. I have bought berry plants, but I invariably have the best luck when I buy of the veteran berryman at Lawrence. He grows the "Up-to-Date" sorts that stand the racket out in Kansas. Yes, I will buy plants of Smith, fall 1904 and spring 1905." 50 Varieties

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Send 6 cents for Trial Treatment, Testimonials. **W. BULLARD, 317 Theodore St., Detroit, Mich.**

Questions and Answers

To Protect Shingles.—In reply to J. R. T., Harriman, Tenn., who asked how to protect shingles, and also how to prevent shingle nails from rusting, will say that Carbolineum is largely used here as a wood preservative; have never seen shingles dipped in it, but have seen them painted after having been put on. I think that after the shingles have been dipped and nails driven through them, the nails will not rust. Cut nails will last longer than wire nails. Carbolineum is also the best thing that can be used to paint hen nests, roots, interiors, etc., for killing and protecting against lice. It is also used here to paint fence posts and picket fences. It costs 90 cents per gallon, retail. A dealer in paints is apt to recommend whatever he has to sell, which very often is an article on which he can make the greatest profit.—E. P. Lowe, Jerseyville, Ill.

Sand Vetch.—In answer to C. W. C.'s question concerning sand vetch, will say I have had three years' experience growing it on a small scale. I sow it broadcast about the first of May and get a good crop the first of September. The second year I get two good crops. It will re-seed itself by omitting the last crop. It also yields more hay per acre than anything I have ever tried.—J. P. Reed, Decatur, Arkansas.

Comparison of Raspberries.—C. H. C., Kangley, Ill., wants to know how Cardinal and Haymaker raspberries compare with Columbian. Columbian was killed to the ground; all except two plants had a few berries on them. The other two varieties were not hurt in the least, and were loaded with fruit this year. All were planted last spring and given the same treatment. —Fred Hatcher, Fulton, Mo.

Peaches Behaving Strangely.—Among our peaches this season, I notice our freestones all cling to the seeds, almost like clings. I would like to ask through your journal whether or not this is a common thing among orchards this season, and how it is accounted for. I also notice the Seedless apple showing up around as a novelty, and will say that we secured grafts of the Seedless apple from Virginia probably ten years ago, and grafted and sold a good many of the trees over Missouri. None are bearing yet, to my knowledge.—E. Mohler, Plattsburg, Mo.

More About the Cornichon Grape.—The grape described by T. E. M., Glen Ellyn, Ill., in July Fruit-Grower is the Cornichon (pronounced Cor-ni-shon), and I think it might succeed in Alabama if properly cared for. This vicinity is almost entirely given up to fruit-growing of all kinds, except citrus fruits. The peach is our leading fruit, but the foreign grapes receive much attention. We cultivate many varieties, such as Tokay, Muscat or raisin grape, Black Hamburg, etc., but the Cornichon is our leading variety. Here it ripens its fruit in October, and, having a tough skin and firm flesh, is a good keeper and shipper. The vines are planted here in the open field, four to eight feet apart each way, without trellis or support of any kind. In the fall, before freezing weather begins, the vines are cut back to within an foot or eighteen inches of the ground and covered with earth to prevent freezing and drying out. The tips, or highest parts of the vines, are sometimes barely covered. In spring the earth is removed, and after the vines have made a new growth of from three to four feet, and have blossomed, the ends of the vines are cut off. The fruit is held up in part by the stiff vine, but much of it lies on the ground. Some bunches of fruit weigh from five to ten pounds, but more often bunches weigh from one-half to one pound. The best grapes net the grower here about $1.50 per crate of twenty-five pounds. A vine in full bearing should yield a crate of fruit. This is a semi-arid climate, and we depend altogether upon irrigation for moisture. The winters are usually mild, but sometimes it gets 10 degrees below zero, or even colder, in some parts of the Grand Valley. Improved land is selling at from $400 to $1,000 per acre. We never have a failure of the peach crop at Palisade. Have a full crop of fruit of all kinds this year, except apricots, which were killed by frost while in bloom.

The article in July Fruit-Grower on Georgia peach orchards in interesting. Can you tell us more about how their peaches are picked, packed, shipped and sold? The size and quality of the fruit, and what the growers' net returns per acre are?—F. R. R., Palisade, Colo.

(This letter was overlooked last month, having been written early in August. In regard to Georgia peaches, they are of good quality but not so large as the Colorado and Utah irrigated fruit which is sent to the Missouri River markets. The favorite picking basket is a firm, rigid basket, which will not "give" and thus allow the bruising of the fruit. The fruit is picked in baskets, which are shipped in crates, four and six baskets to a crate. As to the returns, we have no definite information. We were told while in Georgia that this year returns would run from $50 to $100 per acre, net. The following paragraph is from the Macon (Ga.) Telegraph: "This year's peach crop will bring in millions of dollars to Georgia growers. Best returns have been from Boston; one car sent there netted $981. Prices have been good in all markets, with a few exceptions. An orchard of 1500 Elbertas, in bearing 5 years, has given the owner $7,000. A crop of Elbertas and Belles from a 10-acre orchard has been sold for $1,138. An orchard of 9,000 Elbertas has brought the owner, since 1898, enough money to buy a large plantation, and bring to their first crop 65,000 trees.)

J. A. H., Humansville, Mo.—I have found that some leaf rollers have made their appearance in my strawberry patch, and I would like to know how to get rid of them. I suppose the insect is the leaf roller. I found leaves folded together, and on the inside is a little green worm within a light web. I saw an article in The Fruit-Grower some time ago about this insect, but the article did not tell how to get rid of the pest.

In the issue of The Fruit-Grower

Wonderful! Every Claim made for the

Sudduth Pear

(Photograph of a twig 13½ inches, cut June 6, 1904, from a seven year old **Sudduth Pear** tree in Capt. Augustine's Experimental Orchard at Normal, Ill. There were 36 perfect pears on the twig.)

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EXTRACTS FROM LETTERS RECENTLY RECEIVED

The 4,000 **Sudduth Pear** trees are looking especially fine. For next season's planting we will need at least 15,000 more **Sudduth**, and you may book our order for this number. JOHN CARTER, Pres. St. Helen Development Co., St. Helen, Mich.

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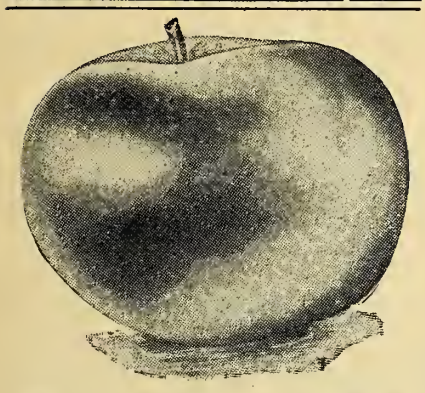

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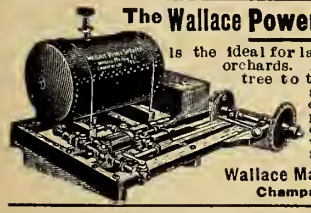
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for June, 1903, we published an article by Prof Stedman of the University of Missouri on this subject. From the description the insect is undoubtedly the leaf roller. Prof. Stedman has found that this insect makes its appearance in Missouri about the middle of April, or a little earlier in Southern Missouri. The females at once begin laying eggs on the upper surface of the leaves, as a rule, these eggs in two to three weeks hatching into minute whitish larvae with brown heads. These creatures begin at once to feed and spin a delicate silken web, under which they are found, and which protects them to a certain extent, and rends the application of arsenical poisons, even at this early date, practically useless. The larvae grow rapidly, and soon begin to fold the leaves by spinning silken cables from one edge of the leaflet to the other, and soon have one-half of the leaf folded over upon the other half. The larvae feed upon this leaf, but do not eat entirely through the leaf. The leaves thus folded soon turn brown and cease to be of value to the plant. The larvae attain full growth about the last of May, and then change to pupae within the folded leaves. Early in June the moths of the second brood appear, and at once begin laying eggs for another brood. This second brood goes through the same changes as the first, and about the middle of August a third brood will appear, and after the larvae reach full size they pupate and pass the winter in this state.

Prof. Stedman found spraying ineffectual, for the reason that the poison could not reach the insects. The best plan is to burn over the fields while the larvae or pupae are within the folded leaves. This method was tested on several fields for two years, with perfect satisfaction. The burning is to be done during the middle of July, or sometimes the middle of September. In July the larvae of the second brood, and in September the larvae of the third brood, are likely to be found within the folded leaves. One should look at the plants carefully to ascertain the exact time, however, but the dates given are approximately correct in Missouri.

The proper method of burning is to first cut or mow the vines and allow them to dry one or two days in the sun, then cover them with loose straw or rake up the mulching, and set fire to the rows, preferably when a gentle wind is blowing in the direction of the rows. Should the strawberry plants be very thick it may not be necessary to cover them with straw in order that they may burn up properly. Should the ground be too stony to allow of mulching, or should the plants be very thin, they may simply be covered with straw and burned with good results, but it is always well to first mow and dry the plants if possible. This burning over of the strawberry fields will not injure the plants in the least, and they will at once put forth a new growth of leaves that will be practically free from the leaf-roller.

C. L. R., Chenoa, Ill.—(1)—I have read in agricultural journals advice to not trim plum trees; but I have also read in The Fruit-Grower the statement that Japanese plum trees should be severely headed back. If this is so, when is the best time to do the work, or will they do just as well without being headed back? (2)—Also, what varieties of pear trees should be headed back? (3)—When is the best time for cutting back peaches?

Japanese plums can be headed back if desired, and are frequently treated in this way, to prevent branches from becoming too long and willowy. This work can be done in spring to best advantage, just before growth starts. (2) Pear trees are not headed back, in Western states, at any rate. (3) Peach trees can be headed back at any time during the winter, but the best time is just before growth begins in spring. One can tell then the condition of the fruit buds, and the nature of the pruning is often determined by the condition of the buds.

G. C. G., Covington, Ky.—(1)—I put out some grape cuttings this spring in a trench and they are growing all right. Should they be transplanted to their permanent quarters this fall or next spring, and should I use manure on each vine when transplanting? (2) Please give directions for transplanting shade trees from woods to yard, how much roots to leave on, etc. Do trees of good size, say three or four inches in diameter, require special work in transplanting? How would it do to put a four-inch tiling down the side of hole to use in watering them? (3) Can trees be trimmed in early fall, say September? I can tell better how to trim while leaves are on. (4) Should any manure be used on strawberries for winter mulch, or will it contain too many weed and grass seeds?

The grape cuttings can be transplanted to permanent place next spring, if desired; grapes are usually planted in spring here. Or the vines can be grown one more year in nursery row, and planted as two-year-old plants. No manure should be used next the roots, although if the soil is enriched the vines will make a better growth, of course. (2) A favorite way of transplanting large shade trees is to do this in winter. Dig a large hole where the tree is to stand. When the ground is frozen hard, dig up a big ball of frozen earth with the roots of the tree, and remove the whole mass to this new location. In this way very large trees can be removed, but trees of the size named will hardly require such particular treatment. Hard maple trees three to five inches in diameter are transplanted in cities every spring, and a way is provided to water the trees, by using tiling, as suggested. They grow readily, as a rule. (3) Pruning is usually done while trees are dormant, but exceptions can be made and the work done in late fall, if desired. (4) The manure is all right, if it were free from weed seeds, but this is not usually the case. Where prairie hay is fed to horses, the manure is often all right. But we have seen many strawberry beds ruined, even where prairie hay had been fed to the animals, because rye straw had been used as bedding. Rye took the strawberries.

W. K. R., St. Louis, Mo.—I send herewith some grape leaves from my vines. Please examine them, and if they are diseased, please state the nature of the disease and the remedy. The discoloration seems to appear on leaves of a certain growth, as if, when they had reached a certain point, we had had some cold days which checked them. I noticed the same condition last year, though not nearly so bad as this year. It does not affect the new growth, that is, the tips of the canes, nor the very large leaves.

The leaves are affected with powderly mildew, a fungous disease, which attacks the leaves and also the fruit. It, like other fungous diseases, flourishes during damp weather. The remedy is to spray with Bordeaux mixture, and, as is the case with other diseases of this kind, the spraying is preventive rather than remedial. Spray before growth starts in spring, while the growth is young, and then once later, and the disease should be prevented from gaining a foothold.

H. D. W., Montrose, Colo.—In your August number I saw that salt was recommended by one correspondent for pear blight. Will you please have him inform us how it is applied, how much is required for, say, a ten-year-old apple tree, and whether we should use coarse or fine salt. Also, is it thought best to use it at certain seasons of the year? If so, when?

We are afraid this salt cure has stirred up the correspondents, and it may be necessary to bar the discussion of pear blight from our columns, as it has been barred from the meetings of some of the horticultural so-

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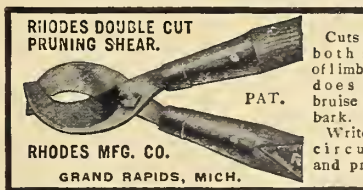
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cieties. However, here are two letters, giving both sides of the controversy. One can pay his money and take his choice. But it may be added that salt should be experimented with very carefully, or great damage may follow its use.

Conrad Hartzell, St. Joseph, Mo., recommends the salt cure as being "Nature's preventive of pear blight." Mr. Hartzell says that blight is unknown near the ocean, near the Gulf of Mexico and in regions where salt springs abound. He adds: "Let salt be broadcasted on pear land, from one to six barrels per acre in pear orcard. Too much salt may kill the trees, but a few barrels per acre will not injure any crop. Salt should not be piled around living trees."

Now hear the other side:

"We noticed an article in The Fruit-Grower telling about someone having sprinkled their pear trees with salt water, to prevent blight. We tried it on four Bartlett trees six years old, which had shown some signs of blighting, and it surely stopped the blight. We are sure those trees will never blight again, for they are dead, down to the ground. We used different degrees of strength on each tree to test it, and the effect was the same."—Parsons Fruit-Growing Co., Parsons, Kan.

This gentleman evidently sprayed his trees with salt water. The effect might have been different if the salt had been applied dry about the trees. —Editor.

E. P. L., Jerseyville, Ill.—I would like to have someone who is posted, inform me about raising sunflowers for seed. What variety should I plant, what kind of planter will be best, how shall I harvest and prepare the seed for market?

Who has had any experience in raising sunflower seeds for market, and can answer these questions?

M. L. S., Rome, I. T.—I want to ask what is the matter with my trees. (1) I have 125 peach trees, five years planted. Last August the leaves of nearly all the trees turned perfectly white and dropped off in September, with trees full of fruit. This spring all bloomed except six; they put out and then died. I cannot see any sign of insects or disease ailing them. Trees are set fifteen feet apart each way and have been well cared for. They commenced dying at the top. I have 500 Concord grape vines affected the same way, and my pear trees are in like condition. The land is as rich as it can be, will raise fifty to seventy-five bushels of corn per acre. I have nothing planted in the orchard, simply keep it well tilled.

This was referred to Dr. Whitten, who writes that he cannot recognize the trouble from the description. Have any other persons had any experience with this trouble?

F. A. U., Mossville, Ill.—Would it be advisable to plant apple trees on timberland? I have just cleared ten acres of nice land, with southeast slope; will seed it down in clover next spring and plant it with apple trees. What variety will do best in Central Illinois? Would it be a good plan to let from sixty to one hundred head of hogs pasture the orchard, as it is impossible to cultivate it, on account of the stumps. Would one or two-year-old trees be best to plant?

The timberland is all right—in fact, is the best, but in some places where root rot has been particularly bad, it has been thought best to not plant apple trees so soon after the land has been cleared of the natural timber. But many excellent orchards have been planted in this way. The variety which will do best with you can best be determined by observing the nearest orchards, those on the same kinds of soils as you will plant. Ben Davis, Jonathan, Grimes, etc., are popular in that section for winter apples; Duchess and Wealthy for summer varieties. The pasturing of young orchards with hogs is not generally recommended; where trees are matured there is not so much objection. Two-year-old trees are generally preferred for planting.

W. M. K., St. Charles, Iowa.—I would like to know how to propagate pear trees; what kind of stocks to bud or graft upon.

Pears are grafted or budded, as desired; they are worked on quince stocks for dwarf trees, and on pear stocks for standard trees. Stocks can be purchased from many of the nurserymen. In this issue Thomas Meehan & Sons, Dreshertown, Pa., advertise pear stocks.

Mrs. B. H. R., Leland, Kan.—(1)—Is there a thornless honey locust, and if so, where can we get them? We live in Graham County, Kan., where locust trees do best of the forest trees for groves or windbreaks, but we do not like the thorns.

Answer by Dr. Whitten: There is an almost thornless noney locust known as the variety Inermis. It is usually handled by tree dealers. In ordering, one should ask for Thornless honey locust or Gleditschia triacanthos var. inermis.

F. H., Fulton, Mo.—Will someone please tell me what is the matter with my Crimson Rambler roses? The leaves roll up lengthwise and turn white, the trouble being worse near the ends of the shoots. What shall I do for the trouble?

Answer by Dr. Whitten: The crimson Rambler is no doubt effected with the common rose mildew to which it is subject. Common sulphur is a good preventative. The plant may be sprayed with water so the sulphur will stick and then the sulphur may be dusted on or blown on with a blow gun or bellows. This should be repeated from time to time. The sulphur should be applied in spring also, before the mildew appears. Usually the mildew does not make its appearance until warm weather is well on. Applications of sulphur before the mildew starts will prevent its getting a foothold.

J. A., Purgittsville, W. Va.—I have a lot of plum trees, five years old, and the climate here does not suit them. Can they be top-grafted? What time should this work be done? When shall I cut the scions?

Answer by Dr. Whitten: Young plum trees may be top grafted with out much difficulty. The work should be done just about the time growth begins in spring. The scions should be cut anytime after the leaves fall when the wood is not frozen. They should be kept perfectly dormant, packed in moist sand or sawdust in a cool cellar, until the work is to be done.

E. D. R., Lathrop, Mo.—I would like some information as to what is causing my Japan plum trees to die. The bark and wood turn black in a small place, usually just below the limbs on the body of the tree, causing the fruit to dry up on that side of the tree, and finally this extends around the tree and kills it. The bark is dry and loose from the tree, no gum exuding from the decayed part. (2) Also what has caused the leaves to fall from my Wragg cherry tree, just after the fruit was ripe? Will they put out again or will they die? All these trees are about five years old and were sprayed this spring with Disparene.

Answer by Dr. Whitten: The Japanese plum is subject to the fire blight the same as the pear. From the above description it seems likely that the trees are affected with this blight. The cherry trees no doubt are suffering with the leaf spot, a fungous disease which causes the leaves to fall

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prematurely. Spraying in early spring, before growth begins, with strong Bordeaux mixture and spraying after growth begins with very weak Bordeaux mixture is the preventive recommended for this disease.

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Work of American Pomological Society.

No special meeting of the American omological Society will be held this year, as was at first contemplated. Instead, the fruit exhibits at St. Louis will be inspected by committees representing the society, and complete reports will be furnished later. Not only will these committees report concerning the exhibits, but the members will contribute papers growing out of their investigations at the World's Fair. Among the topics to be presented will be groups or types of fruit; promising varieties of apples, pears, peaches, plums and the like; quality of fruit as influenced by cold storage; quality as influenced by elevation; appearance influenced by altitude; the ideal home of the Ben Davis; the ideal home of the Spy; where we should grow Elberta, and many others of similar character.

The committee which will have charge of the report to be made concerning the St. Louis exhibits, and the special features which each sub-committee will consider, is as follows:

Apple—Stinson, J. T., Missouri; Close, C. P., Delaware; Craig, John, New York; Green, S. B., Minnesota; Hansen, N. E., South Dakota.

Cherry—W. T. Macoun, Director South Haven Experiment Station; Little, E. E., Iowa.

Pear—S. A. Beach, Geneva, N. Y.; Maynard, S. M.; Brackett, G. B., Washington, D. C.

Plum—Waugh, F. A., Massachusetts; Kerr, J. W., Maryland; Watrous, C. L., Iowa; Hedrick, U. P., Michigan.

Peach—Whitten, J. C. Missouri; Taft, L. R., Michigan; Price, R. H., Virginia; Heikes, W. F., Oklahoma.

Grape—Munson, T. V., Texas; Hussman, G. C., California; Petit, A. H. (Grimsby), Can.; Green, W. J., Ohio.

Nuts—Taylor, W. A., Washington, D. C.; Van Deman, H. E., Virginia; Burnette, F. H., Louisiana.

Tropical Fruits—Hume, H. H., North Carolina; Berckmans, L. A., Georgia; Kimball, F. C., National City, Cal.; Stiles, W. C., Chico, Cal.

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Missouri State Fair.

The Missouri State Fair, Aug. 15th to 19th, inclusive, opened under auspicious conditions. Most of the departments were well filled, some of them exceeding any previous record, notwithstanding the earliness of the dates, and the late maturing of most of the farm crops.

In the horticultural department the showing of apples was below a year ago, but to make up for that deficiency was a magnificent display of peaches, far exceeding any peach display of former years, and calling forth the admiration of all who saw it. Southern Missouri was well represented in this display, although at Koshkonong and vicinity the peach crop was nearly exhausted. Olden led both in size of exhibit and quality of fruit shown, though a fine showing came from Pomona, West Plains, Koshkonong and Cabool; several other districts in the state sent fine peaches.

The first premium on largest and best collection of fruits was captured by Pittis County, the exhibit being in charge of Messrs. Thompson and Mansees. More than 200 plates of fruit were shown, the fruit generally of high quality. This county also took first and second premiums on best bushel of commercial apples, besides numerous ribbons on collections and single plates.

Butterfield & Son made a fine exhibit for Jackson County. Mr. George Tippie had charge of this display, which took second premium on general collection of fruits, having considerably over 100 plates on the table. They also took several premiums on collections and single plates. This county got second premium for county exhibit from Northwest section, in agricultural display, and first premium on state exhibit of winter wheat.

This whole display was put up in very nice shape, the tables decorated with flowers, and everything carefully placed to make the best showing possible. C. Thorp had charge of the exhibit for Platte County, which was a large one, though showing more in agriculture department than in horticulture. This exhibit got second premium on collection of peaches and first premium on several single plates fruit. In the agricultural department they captured the sweepstakes for the Northwest district, second premium on grasses over the state, first premium on alfalfa, alsike clover and orchard grass. They showed blue grass blades 54 inches long, with stalks 4 feet 3 inches.

Newton County made a fine exhibit of all kinds of fruit and carried many ribbons. There were small exhibits from Pulaski and Shannon counties, but they were prize winners, nearly every plate getting a ribbon.

Lewis Zellner & Son, Granby, showed 43 varieties of choice grapes. They took first premium on collection besides numerous plate prizes. F. H. Corner of Granby had a nice exhibit, taking first premium on best six varieties of winter apples and several plate premiums.

Several other localities in the state were represented.

M. O. Cole, Springfield, sent several varieties of extra fine grapes, but which came too late to be judged.

The floral exhibit was much larger than ever before. Besides fine exhibits by C. A. Pfeiffer and Gilven & Son, both professional growers, a large show of amateur work was displayed, that called forth the highest praise from those competent to judge. Cut flowers were in profusion, the showing of asters being specially fine. Heavy rains Thursday and part of Friday were a great disappointment to all, and doubtless kept hundreds at home.

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160 acres, Sharp Co., Ark., 5 miles R. R. town all smooth land, 9 acres bearing apples, assorted; 4 acres Elberta peaches 6 years old; 2,000 2-year-old Elbertas, 50 acres cultivated; common improvements, good water, 110 acres beautiful smooth land in big oak timber. Price, $1,700; ½ cash.

No. 8—80 acres, 2½ mi. R. R. town, Lawrence Co., Ark. 40 cultivated, balance big oak timber, 3-room house, barn 20x30, fine spring, 1,400 apple, 300 peach, 400 plum, 250 cherry, 85 pear, all 6 yrs. old, ½ acre strawberries, 8,000 grafted peaches in nursery row. Price, $2,000. Ain't it a snap?

No. 71—160 acres McDonald Co., Mo., on Kansas City Southern R. R., 200 miles south K. C.; 40 cultivated; 300 bearing apple trees; 500 3-year-old apple, small fruit, good improvements; 5 wells and spring. Price, $1,600. Only $1,600.

These are a few of many bargains.

Fine unimproved fruit lands close to railroad $3 to $15 per acre. Buy while you can. Never so cheap again. Free list for asking. Write for what you want. I have it. Up-to-date pocket map Missouri, Kansas, Arkansas, Oklahoma, each bound, pocket size 10c, stamps or silver, postpaid.

LOTT, "The Fruit Land Man"
127 West Eighth St.,
KANSAS CITY, MO.

FOR SALE OR EXCHANGE

Will sell 80 acres, 8 miles south of Kansas City, for $12,000 and take first class residence or city property for $6,000. This has 20 acres of fruit, mostly apples; it has pears, peaches, plums, cherries and blackberries. Fine land, but poor improvements. Land two miles north selling at from $300 to $500 an acre.

J. H. LIPSCOMB
306 Fidelity Trust Co. Building.
KANSAS CITY, MO.

FOR SALE

Fine 80-acre Fruit Farm, in Ozarks. Hunting, fishing, excellent. Two good crops will pay cost. Obliged to sell by old wound of Civil War; 160 miles from St. Louis, 3 miles from station. Spraying outfit for sale cheap. Address

DAISY FRUIT FARM, Richland, Mo.

3500 Acres of Land
AT $1.75 PER ACRE

which will grow Delaware grapes and Elberta Peaches to the highest degree of perfection. Other fruits and farm products do well. Finest climate on earth. Write for information.

Corwith Bros., Box 155, Asheboro, N. C.

We Can Sell Your Farm

OR OTHER REAL ESTATE.

no matter where it is or what it is worth. Send description, state price and learn our wonderfully successful plan. Address,

Southern Minnesota Valley Land Co.
MADELIA, MINN.

Homes Under Co-Operative Irrigation

RICH AND PRODUCTIVE LANDS AT FROM $1.25 PER ACRE AND UPWARDS. ABUNDANT WATER AT COST; TIMBER CHEAP AND CONVENIENT; MILD AND HEALTHFUL CLIMATE. FOR FURTHER PARTICULARS ADDRESS (enclosing stamp)

The C. C. Co., Pinon, Montrose Co., Colo.

TEXAS TREES.

A million of them growing on new prairie land. A hundred best varieties of plums, over a hundred of peaches. Fortunes in some new Texas varieties. Big stock of Arp Beauty. I introduced the Chilow and Weaver peaches, and the Wooten, Gonzales, Red October, Happiness and Welcome plums. A tree taken from the South to the North becomes totally dormant, stands any winter, bears younger and fuller. Please write for new catalog.
F. T. RAMSEY, Austin Nursery, Austin, Texas.

Forest Tree Seeds and Seedlings

We have an immense stock of Tree Seedlings growing for fall delivery. Our specialties are: Catalpas, 3 varieties; Black Locust, Russian Mulberry, Box Elder, Ash, American Persimmon, Red Buds, Maples, Athea Rosea, Lindens, Beech, Birch, Yucca, etc., of which we have an immense stock and can give very low prices. Also collected Seedlings, Tree and Shrub Seeds, etc. Send for trade list.

Forest Nursery & Seed Co.

Irving College, Warren Co., Tenn.

De Loach Pat.

TRIPLET HAY BALER, Self-Feeder. LOW IN PRICE. FOR HAND, HORSE or BELT Power. Leverage 40 to 1. Bales quicker, easier and more solid than any other. Also Grinding Mills, Water Wheels, Saw Mills, etc. Cat. Free. DE LOACH MILL MFG. CO., New York, Box 939, Atlanta, Ga. St. Louis.

Agents Wanted

We desire to secure a number of good reliable salesmen to work on commission and salary this season. Write us if you are hustlers. Good inducements to the right men. We have a good supply of Apples, Pears, Peaches, Plums and everything grown by nurserymen. All stock true to name. Address

E. W. Jones Nursery Co., Wood Lawn, Va.

The Perfection Currant

Awarded the FIRST $50 GOLD BARRY MEDAL of the Western New York Horticultural Society; also highest award to any new fruit at the Pan-American Exposition. The most productive and best red currant. PRICE OF PLANTS CUT IN TWO. Write for descriptive circular. C. M. HOOKER & SONS, Rochester, N. Y., Introducers.

GOLDEN OPPORTUNITIES.

In the Pacific Northwest for farmers, fruit-growers, dairymen and stockmen. Cheap land, virgin soil, no droughts, no blizzards, no floods. To get reliable information regarding this wonderful country send 50 cents for a year's subscription to

THE RANCH, Seattle, Washington.

Fruit Growers send 25 cents for 6 months trial subscription to THE PEACH GROWER, Atlanta, Ga. It is a practical paper for growers of all kinds of fruit, of peculiar interest to peach growers. Published in the greatest peach state in the world, it publishes much matter of interest to peach growers everywhere.

THE RIGHT PLACE TO BUY

is where you can get the best stock for the least money. We can give you the best stock in nursery-grown and forest collected Trees, Shrubs, Vines, Seedlings, etc. Ask for price list. New Market Nurseries, Taylor Perry, Jr., Prop., New Market, Ala.

WE WILL PAY $50.00

for a case of Eczema, Piles, Pimples, etc., which we cannot positively quickly cure with the new Radium Remedy, Ec-Zine. Many cases are cured by the samples we send free. No money wanted. Write today. EC-ZINE CO., S, Ashland Block, Chicago.

Plattsburg (Mo.) Nurseries—We offer a complete assortment of general nursery stock and will quote prices on any quantity. Also want local agents, especially for Mo., Kan., Neb., Ill. and Iowa. Write for liberal cash terms. E. MOHLER, Plattsburg, Mo.

PUT POTATOES

as they're dug into our **Ventilated Bushel Crates.** Store them without rehandling—less decay—one third time saved. Strong—no breakage. No. 2—9c; No. 1—heavy—11c. Ask for free booklet No. 18

Geneva Cooperage Co., Geneva, O.

Make Your Own Fertilizer

at Small Cost with

Wilson's Phosphate Mills

From 1 to 40 H. P. Also **Bone Cutters,** hand and power, for the poultrymen; **Farm Feed Mills, Graham Flour Hand Mills, Grit and Shell Mills.** Send for catalogue.

WILSON BROS., Sole Mfrs., Easton, Pa.

After Harvest Work.

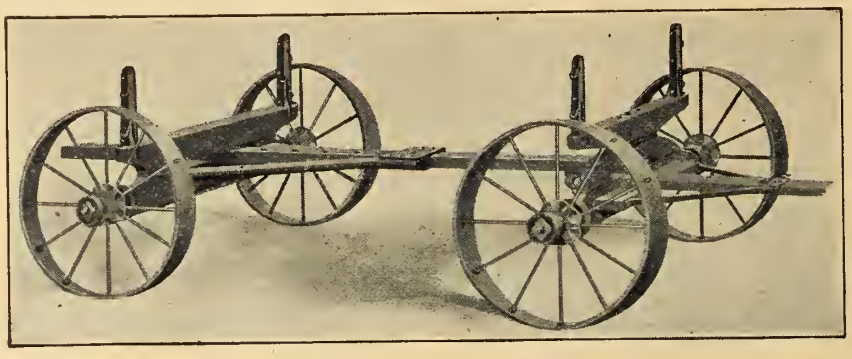
Between the harvesting and threshing time, and gathering of the corn crop, comes a period familiarly known as "after harvest."

Each season, in the rush and steady strain incident to planting and cultivating of corn, the sowing and harvesting of the small grains, haying, etc., many important farm operations are put off for the "after harvest" period.

There is the hauling out and spreading of the manure, the clearing of the wood lot, removal of stumps, boulders, stones, etc., and the repairing of farm and pasture fences, and the filling of silos. Then, too, there is the shelling and marketing of the last season's corn which has been held until the present corn crop has given evidence of success, the marketing of spring and summer fed hogs, etc.

Every one of these operations brings the farm wagon into almost continued use. It is important, then, that the wagon be a good one. It should be as light as is consistent with required strength, low down, so that it may be easy to load, have broad tires, in order to avoid cutting up and rutting meadows, pastures and farm lands and to reduce the draft to the minimum.

These good qualities and advantages are embodied in a high degree in the Electric Handy Wagon, a cut of which is shown in this article. As its name indicates, it is a low-down handy



wagon in every sense, very easy to load, saving, we think, more than one-half the lift, as it is the part of the lift above the center of gravity (the last half) which requires the heavy straining; an advantage almost beyond comparison in hauling manure, stumps, logs, boulders and green corn for filling silos, all of which are very heavy, and the greatest labor in connection with their hauling is in the loading. Being heavy, the load will cut into the sod or other land badly if it were not for the broad tires which enable the load to be drawn smoothly and easily over the surface without injury to the land.

Then, too, there is the great durability and lasting quality of this steel wagon in its favor. It is proof against decay in every form. The whole story of its worth as well as details of construction will be found in the illustrated catalog of the Electric Wheel Co., Quincy, Ill. Write for the book, it is mailed free to all readers who mention Western Fruit-Grower.

The Parrot as a Pet.

In nearly every country home there is a bird or an animal pet of some kind and while the parrot has been made a great deal of in this way we think that it is not fully appreciated. When a family once has a parrot they soon grow very fond of it and will never be without one as a rule. If people knew the parrot better, if they knew how interesting it was and how little trouble it is to care for it, there would be many more parrots in farm homes than there are now.

To teach it new words and old household sayings and watch the growth of its vocabulary is a constant source of pleasure. They are interesting companions and help to pass the time pleasantly. All children love them and every family could well afford to have one of these pets.

There is a great difference in parrots, some being far more intelligent than others, learning to talk much quicker than the common varieties. The best parrots come from Mexico, South America, Cuba and Africa and we are glad to see that the demand for these birds is increasing every year.

The Iowa Seed Co., Des Moines, Iowa, are the most successful dealers in these imported parrots and they send an expert man to different countries every year to buy up many thousands of the best to be found.

We advise our readers to get a parrot while it's young because they pick up words and sentences more rapidly then than later and they get to be "one of the family" sooner.

The Facts About the Sudduth Pear.

Editor Western Fruit-Grower: So much has been said, pro and con, in your paper, about the Sudduth Pear that many of your readers are desirous of knowing the facts, and we are receiving many inquiries about like the following: "Are the trees really free from blight? Are the young trees bearing this season? Is the fruit desirable?" etc. In answer to all such inquiries we wish to say. Come and see.

In a half hour's ride from our office we can show trees that have been planted five to seven years, with a bushel of pears, when well matured, for every year that the tree has been planted.

Grafts of the Sudduth on other varieties of pears trees are loaded with fruit and without a blighted leaf, while the trees grafted on are nearly dead with the blight. We will be pleased to show these wonders in horticulture to any one who will come to our office. If we can't show these facts, Mr. Editor, we will pay the visitor's railroad fare, and feed him on fried chicken while here. Seeing is believing. Come now, or forever hold your peace. AUGUSTINE & COMPANY NURSERY, Normal, Illinois.

Wooden Veneer Wrappers to Protect Trees.

This is the season of year when the thoughtful orchardist prepares his trees for winter, and arranges to protect them against injury by rabbits. Mindful of this fact, the Hart Pioneer Nurseries, Fort Scott, Kan., call special attention in this issue to the wooden veneer tree protectors, which this firm has for sale in any quantity. These wrappers, as is generally known, are thin strips of wood, which are placed about the tree and are an effective protection from injury by rabbits. They should be placed about the tree in fall. Not only do these wrappers prevent injury by rabbits, but they protect the tender trunk of the young tree, and thus remove danger of injury by sunscald. The wooden wrappers are recommended by many of the best orchardists, and the advertisement of the Hart Pioneer Nurseries will prove particularly interesting at this time.—Adv.

The Ferris Wheel at the Fair.

Among the attractions at the World's Fair none is better known than the Ferris wheel. This attraction was at the Chicago Exposition eleven years ago, where it attracted much attention. This wheel is 264 feet high, and from its cars one can obtain not only a splendid view of the entire fair grounds, but the city of St. Louis as well. Two revolutions of the wheel are given each passenger, so there is abundant time to view the sight which is presented. About half an hour is required to make the trip. This wheel is really one of the wonderful features of the fair, its machinery and its castings being remarkable in themselves. For instance, the axle upon which the monster wheel turns weighs seventy tons. The entire wheel, including this axle, weighs 4,200 tons, and required 175 freight cars to move the mass of material from Chicago to St. Louis. When you go to St. Louis don't fail to ride in this wonderful wheel and obtain the wonderful view which can be had from its windows.

Otwell's Tree Paint.

This preparation has been thoroughly tested as a protection against rabbits, as well as to keep borers from depositing their eggs, and reports from those who have used it have been satisfactory. W. B. Otwell, the manufacturer of this tree paint, is well known throughout Illinois, and at present is in charge of the splendid agricultural exhibit which Illinois has made at the World's Fair. Mr. Otwell has an interesting proposition for Fruit-Grower readers, and special attention is called to his advertisement elsewhere in this issue. Read the advertisement and write W. B. Otwell, Carlinville, Ill., for further particulars, mentioning the Western Fruit-Grower when you write.—Adv.

Build Your Own Telephone Line.

In this issue the Elliott Telephone and Electric Company, Indianapolis, Ind., has an advertisement of interest to farmers particularly. This company makes a specialty of telephone instruments and appliances for farmers' lines, and has some interesting information for those who contemplate installing mutual lines. Fruit-Grower readers should look up this advertisement. Now is a good time to study up on this matter. When you write to the Elliott Company, please mention The Fruit-Grower.—Adv.

Notes.

"Please put me down as a life member of The Fruit-Grower Family. I will want it as long as I continue in the fruit business."—W. T. Eastwood, Oak Grove, Mo.

James Johnson, Bayard, Neb., writes us that a severe hail storm not only destroyed his fruit crop for this season, but practically ruined his trees. He says he will have to start over again.

Joseph E. Shaver, Friedens, Va., writes that he has known the so-called "bloomless" apple ever since he was a boy, and has a tree in his orchard now. He does not consider them worth planting, except as a curiosity. The apple is fairly good, but there are plenty of other varieties much better, he says. He warns our readers to not plant more than one or two trees of the variety, as this is all they will want.

How are your cherry trees? Leaves all spotted and yellow, and falling badly? Lots of them are in that condition, and many will die because of the diseased foliage. Another season or two like the past three will make necessary the spraying of cherry trees to prevent this fungous attack. Now ought to be a good time to set out a good cherry orchard, for the reason that lots of the trees which have been badly affected for several years will soon be out of business.

Popping of lamp-chimneys is music to grocers.

MACBETH.

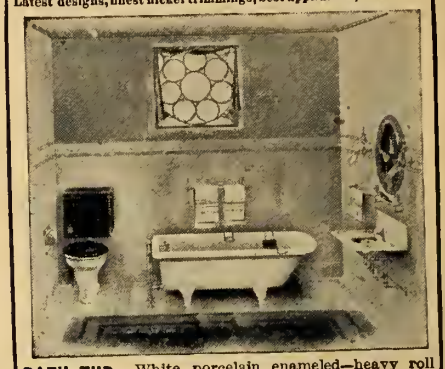
If you use a wrong chimney, you lose a good deal of both light and comfort, and waste a dollar or two a year a lamp on chimneys.

Do you want the Index? Write me.

MACBETH, Pittsburgh.

Bath Room Combination

Latest designs, finest nickel trimmings, best appliances, brand new



BATH TUB—White porcelain enameled—heavy roll rim—seamless cast iron.
LAVATORY—Genuine "Italian" marble countersunk slab and back—patent overflow porcelain bowl.
CLOSET—Syphon wash down vitreous porcelain bowl—perfect working—best wood work.

Price $55.00

Satisfaction guaranteed or money refunded. Any ordinary mechanic can do the work. We furnish working plans on application. **ASK FOR BOOKLET F 399 — tells all about Plumbing and Heating Apparatus.**

Address CHICAGO HOUSE W. CO., 1250 35th Street, Chicago

Save the Trees

from sun scald and blistering and keep off mice, rabbits and tree borers with

The Hawkeye Tree Protector

Cost, a matter of **60c a hundred,** or **$5.00** per thousand. Size 12 by 20 inches, easily and quickly fastened. The one **Protector that always protects.** If you have young trees to save, you will profit by writing for descriptive circulars.

Burlington Basket Co.,
Box 111 Burlington, Iowa.

Apple Seedlings Root Grafts

of the highest grades at the lowest prices. Also a complete line of general Nursery Stock.

HAWKEYE NURSERIES.
W. H. Kauffman, Prop. Stratford, Iowa

"Not a Worm Remained"

Mr. H. F. Jackson, Clinton Co., Ohio, writes: "'DISPARENE' gave perfect satisfaction. The canker worms were quite thick in my orchard, but in three days after using your 'DISPARENE' there was not a worm left." Book Free. BOWKER INSECTICIDE CO., Boston, Mass.; MO. VALLEY SEED CO., St. Joseph, Mo.

Baldwin Cherry

The largest, sweetest and best! Introduced in 1893. 100,000 trees sold in 1903. They all want it? Get your orders booked now for trees, buds or scions. Also general line of Nursery Stock at wholesale, at the **Seneca Nursery.** **S. J. BALDWIN, Seneca, Kan.**

Ellisville (MO.) Nurseries

Offer a first-class assortment of nursery stock at reasonable prices. Specially low price on fine two and three-year-old Apple Trees. Can ship on short notice by the hundred, or in car lots. Certificate of inspection sent with every shipment.

A. WILMAS, Proprietor.
Ellisville, St. Louis Co., Missouri.

Nuts for Profit

158 pages, 60 illustrations on propagation, budding, grafting, cultivation, etc., etc., of Nuts best adapted to various sections. Price, 25 cts. **SEEDS.**

English Walnuts, Madeira, Japan Walnuts; Cordiformis and Sieboldiana Pecans, Paper Shell. By mail 25 cts. per doz.: $1.00 per 100.

JOHN R. PARRY, Riverton, N. J.
Dec. 1 to April 15, Orlando, Fla.

The CLOVER LEAF Cream Extractor.

Don't mix milk and water. Has utmost cooling capacity. Inner can instantly removable. No water required in winter. Air chamber over whole can. Improved faucet, and many other important features described in our **FREE** catalogue, which is a dairy education in itself.

PLYMOUTH MFG. CO., Plymouth, Ohio.

GOLD WATCH FREE

A perfect beauty; **Solid Gold Laid Engraved Case, American Movement,** warranted correct time; equal in appearance to **$50 Solid Gold Watch;** guaranteed 25 years. **Given absolutely free** to boys or girls or anyone selling **25 packages Bluing at 10 cents, we trust you.** Send for Bluing, sell the packages at 10 cents and return us the money. Then we will send you the **Watch.** We also give 50 other elegant presents. No money required; we trust you.

TRUE BLUE CO., DEPT. 33, BOSTON, MASS.

Mrs. Rhodes Fruit Jar Opener

Loosens rubber from jar and cap unscrews easily, no breakage. Postpaid 25cts. Agents wanted. Rhodes Mfg. Co., Grand Rapids, Mich.

DO NOT WAIT

Until after Nov. 1 before you send for a copy of our new 1905 Catalogue of

Flower, Vegetable and Farm Seeds, Roses, Plants, Etc.

which will be issued about Jan. 1. If you will send us your name and address before Nov. 1 so that we can enter your name and direct Catalogue wrapper before our busy season, we will send you free a copy of our Illustrated Catalogue and include a package of choice seeds. Requests received after Nov. 1, will not receive the package of seeds. Our Catalogue will contain beautiful lithographs (in 8 colors) of Vegetables, Sweet Peas, Nasturtiums, and Roses.

The Page Seed Co.
GREENE, N. Y.

ALFALFA SEED

Should be sown on every farm. We pay particular attention to furnishing **Good Seed.** Ask for our **Alfalfa Booklet.** It's **FREE.**

Ross Brothers Seed House
WICHITA, KAN.

WANTED

PEOPLE TO SEND FOR MY CATALOG

which will be out the first of November. I have one of the largest stocks of plants in the South, and am as cheap as the cheapest. Send in your name today.

JAMES A. BAUER, JUDSONIA, ARK.

BALTIMORE NURSERIES

We offer for Fall shipment a select lot of Fruit, Shade and Ornamental Trees, Evergreens, Shrubs and Roses. Heavy stock of Apple, Peach and Pear. All varieties true to name and free from disease. Catalogue Free. Agents wanted.

Franklin Davis Nursery Co
No. 1 Paca Street,
BALTIMORE, MARYLAND.

F. W. MENERAY
Crescent Nursery Co.
COUNCIL BLUFFS, IOWA
Importers and Growers of fine Nursery Stock. Large Stock of Apple, Cherry, Currant, Grape and Ornamentals for fall 1904 and spring 1905.

KANSAS CITY NURSERIES

Located in the center of commerce, railroad facilities to nearly every point in Missouri, Kansas and other states, without change or transfers. Good first-class Fruit and Ornamental Trees, Shrubs, Roses, Vines, etc. A very large assortment for the city and country trade. Write for our 80-page descriptive catalogue. Address

Blair & Kaufman 33-34 Rialto Bldg. Kansas City, Mo.

Largest Commercial Orchard Interests in Nebraska

Enables us to advise Nebraska planters safely, in varieties and methods. Hardy, productive varieties suited to western conditions. Address

Crete Nurseries E. F. STEPHENS, Mangr CRETE, NEB.

FINE DELAWARE-GROWN
Peach Trees

All of the best new and old varieties in assortment, for Fall 1904 planting. We sell directly to planters at very low prices.

The DELAWARE NURSERIES
D. S. COLLINS, Mgr., Milford, Del.

Preventing Cantaloupe Blight.

In the spring of 1900, I planted a piece of ground of two acres in cantaloupes. These melons grew well, bore well, and were pronounced by good judges the best melons that came into the market. Consequently they were sold for a high price, and I realized handsome profits from the enterprise. Encouraged by the results, I believed I had found an industry which would yield more profit than anything I had yet grown. As a result of all this I planted in 1901, eighteen acres which did fully as well as on the previous year, but when about half of these melons were marketed, the blight struck my patch and the best half of the crop was ruined and unmarketable. However, the melons made me a fair profit. Believing that the blight came by chance, and hoping that it would not return the following year, I again planted ten acres. These melons grew exceedingly well, and set a heavy crop of fruit, but before any of it was matured I discovered signs of blight on two vines. I immediately went to Harrisburg and appealed to Prof. John Hamilton, then Secretary of Agriculture, for help, asking him to send me the best man that could be had. He promised me he would, and the next day Prof. H. A. Surface, now Economic Zoologist of Pennsylvania, arrived on the scene. After examining the patch, he advised me to spray immediately with Bordeaux mixture, which I did, and the effect was marvelous. The blight disappeared, the crop matured and was profitably marketed, and today I use the same mixture and would not think of growing cantaloupes without spraying.

For the benefit of those who are inexperienced I will give the formula and correct methods of mixing: Take two vessels; in one (wooden) dissolve six pounds of sulphate of copper in ten gallons of water. In the other slake six pounds of fresh lime, adding enough water to make ten gallons, then pour the two together, slowly into a third vessel at the same time and in the same proportion, adding enough water afterwards to make fifty gallons and it is ready for use. With a good spray pump, and the vines being effectually covered, there will be no danger from blight. The spraying should be done as soon as any signs of blight appear. For my own part, I do not wait for the signs, but spray as soon as the melons commence to bloom well.

Great care must be taken in the mixing of this preparation, for when not mixed by pouring in equal amounts at the same time, it is almost sure to be ineffectual. My candid belief is that any unsatisfactory results from this mixture is very largely due to the improper mixing thereof.—J. H. Ledy, Marion, Pa., in Bulletin of Pennsylvania Board of Agriculture.

Decision Concerning Purchase of Apple Crop.

A Toronto (Ont.) court has just rendered a decision which will be interesting to apple growers, particularly those who sell their crops in bulk in the orchard—this decision also shows the importance of having a contract which carefully guards the rights of both purchaser and seller.

In the case referred to the plaintiff sued for the value of his apples, which were alleged to have been sold to the defendant. The lower court awarded the plaintiff (grower), $200, and the defendant appealed the case to the higher court. This court allowed the appeal and ordered the action dismissed. The court in rendering the decision said:

"The following facts were undisputed: Plaintiff agreed to sell and defendant to buy all the apples in plaintiff's orchard of first and second quality, the apples then being on the trees, at $1.00 per barrel for firsts and 75 cents per barrel for the seconds; plaintiff to retain the culls; plaintiff to pick the apples and place them in piles in the orchard; defendant to furnish barrels and pack the apples; plaintiff to convey them to station when barreled. Plaintiff did pick all the apples, and placed them in piles in the orchard, and notified defendant that they were ready for packing.

"This was about the 1st of November, 1903. No specific time was agreed upon when the apples should be packed, or when payment should be made. Defendant was disappointed in securing barrels and packed only twelve barrels of the apples. These were delivered to him. The others remained on the ground, and were frozen and destroyed late in November. There was a conflict of evidence as to whether anything was said, when the bargain was made, about protecting the apples against frost, and the judge found as a fact that the matter was not imported into the bargain as a term thereof. He also found that the defendant at no time said anything to plaintiff about lack of barrels, nor did he notify plaintiff before the apples were destroyed that he would not take them or that plaintiff might sell them to someone else.

"Before there can be a bargain and sale, as distinguished from an executory agreement, the parties must be agreed as to the specific goods on which the contract is to attach, and it makes no difference that the goods are so far ascertained that the parties have agreed that they shall be taken from some specified larger stock. Appeal allowed and action dismissed."

Liquids for Preserving Fruits.

At different times in the past The Fruit-Grower has published formulas which are used for preserving fruits in liquids, for exhibition purposes. At the World's Fair recently the gentlemen in charge of the Canadian exhibit gave us the formulas which have been used in preparing the very attractive exhibit of that country. The exhibits in jars from Canada, it may be said, have perhaps better color than any of the jars shown from other states. It seems that the Canadians have been making a special study of this matter, and the results attained are very satisfactory. Several different solutions are used, as follows:

Formalin solution—Distilled water (or any perfectly clear water will do), 44 pounds; formalin, 1 pound; alcohol, 5 pints.

Boric Acid Solution—Dissolve one pound of boric acid in 45 pounds of clear water; agitate until thoroughly dissolved, then add five pints of alcohol. If the fluid is not clear, allow it to stand and settle, when the clear upper portion may be poured off and the remainder filtered. This solution and the one given above are used for berries and dark-colored fruits.

Zinc Chloride Solution—(For white, yellow and green fruits, and especially for vegetables)—Dissolve one-half pound of zinc chloride in fifteen pounds of water; agitate until dissolved, then add one and two-thirds pints of alcohol; allow this to stand until settled, then pour off the clear portion and filter the remainder.

Sulphurous Acid Solution—Sulphurous acid, 1 pint; water 8 pints; alcohol, 1 pint.

In the Canadian exhibit will be found fruits and vegetables preserved by all these solutions, and anyone who is interested in matters of this kind can study the exhibit with profit.

The Gonzales Plum.

Last month we referred to some very fine specimens of Gonzales plum which were exhibited at the recent meeting of the nurserymen's association. A Texas exchange now comes forward with the information that plums of this variety which were exhibited at the World's Fair scored 98 points, in a possible 100. The Fruit-Grower does not know whether this statement is true or not; it was our understanding that no announcement of awards would be made until after the close of the exhibition. But certain it is the Gonzales plum has been favorably received by all who have seen it. As yet it has not been well tested outside of Texas, we believe, but doubtless will be tested over a wide range of territory at once.

J. D. Hill, Fort Scott, Kan., writes as follows concerning The Fruit-Grower: "I went out on a farm five years ago, remained there two years, then sold it and moved back to town. But The Fruit-Grower is so interesting to me that I like to read it, although I am not now interested in any horticultural pursuit. I want the paper continued, send me the bill at the end of the year and I will remit."

Forest Tree Seeds and Seedlings

We have an immense stock of Tree Seedlings growing for fall delivery. Our specialties are: Catalpas, 3 varieties; Black Locust, Russian Mulberry, Box Elder, Ash, American Persimmon, Red Buds, Maples, Althea Rosea, Lindens, Beech, Birch, Yucca, etc., of which we have an immense stock and can give very low prices. Also collected Seedlings, Tree and Shrub Seeds, etc. Send for trade list.

Forest Nursery & Seed Co.
Irving College, Warren County, Tenn.

Black Locust
Russian Mulberry Seedlings

We grow them by the million; also a general line of Nursery Stock. It will pay you to send for our prices.

Gage County Nurseries
J. A. GAGE, Prop. Beatrice, Neb.

We Want Agents

To sell our Northern Grown Trees; good pay, steady employment, elegant and costly outfit furnished. We can furnish anything in the line of fruit and ornamental Trees, Shrubs, Plants, etc.

America's Greatest Nurseries

Our new CATALOGUE is conceded to be the finest Nursery Catalogue ever issued and is now on exhibition in the Michigan Horticultural Department of the Exposition. Ask to see it.

THE GREENING BROS. NURSERY CO.
Nurserymen. Publishers. Horticulturists. **Monroe, Michigan**

Jenkins Evergreen Nurseries
Winona, Columbia Co., Ohio.

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Poultry Department

About a mile out of the pleasant old town of Damariscotta, Maine, lives Mrs. Rufus Hitchcock, who is perhaps the most successful poultry woman of whom we have knowledge. She keeps poultry because she loves the work, and incidentally because they pay her good American dollars. Probably her instinctive love of the work is a factor in her success; we naturally do well what we love to do, and it is common talk amongst observers who have visited her poultry plant and studied her methods that Mrs. Hitchcock gets all the eggs out of her hens that it is possible to get because of her thorough enjoyment of her work. Prof. Gowell, of the Maine Experiment Station, became aroused as he told of Mrs. Hitchcock's good work with poultry, and the master of the Maine State Grange wrote me: "Am glad you are going to see Mrs. Hitchcock at 'Scotta. She is a 'star performer' with hens!" With these preliminary phrases in mind I was naturally curious to see the lady and her work.

It was raining heavily on the morning of our visit and we accepted the invitation of the brisk little lady who came to the door to greet us to drive into the barn out of the rain. We noted that it was a dairy barn, and the cream separator in a room of the L of the house confirmed it. "Yes," Mrs. H. replied to a comment, "the dairy is Mr. Hitchcock's end of the farm. He keeps cows and I keep hens." "That makes a good combination," we replied, "especially if you have the skim milk for the hens." "Yes, they do go well together and the hens and chicks like the milk," she said.

Mrs. Hitchcock keeps about 450 Barred Plymouth Rocks, and keeps them in two houses. The larger house is 51½x10 feet in size; the other is exactly like it in shape, and is 44½x10 feet on the ground. In the larger house is put 240 to 250 pullets and seven sturdy cockerels; in the smaller house about 200, five or six of them cockerels. Each house has a yard of perhaps a quarter of an acre adjoining, and the yards are set with fruit trees, mostly apples. When the crops have been taken off the adjoining fields the birds can have freer range, at least a part of the day.

The yearlings are sold off each summer or early fall, excepting some forty of fifty of the very best, which are saved over. Something like a thousand chickens are raised each year, to provide the pullets that are to do the good laying in winter. The cockerels are all sold off as broilers, to get them out of the way and give the pullets the best possible chance to grow.

The chicks are hatched in incubators, and Mrs. Hitchcock said she "wouldn't keep hens if she couldn't have incubators to hatch the chickens with, sitting hens act so like—thunder!" She hatched 1,300 chicks last season, and sold about $150 worth of broilers, they selling at twenty to forty cents apiece, some of them when they weighed a pound and others kept to two pounds weight. For example, 72 small broilers sold alive, weighed 75 pounds and 76 large ones weighed 164 pounds alive.

The Method of Feeding.

In answer to my inquiry as to how she fed her pullets to make them grow well she said: "My first food is a prepared chick food and they go on this chick food until they are about a week old. Then I feed a mash once a day and the chick food. The mash is made up of one-half corn meal and one-half 'mixed feed' with a little beef scraps added. This is their food until they are four or five weeks old, when the chick food is dropped and cracked corn takes its place. When they are about three months old they can eat whole corn, and then I feed half and half corn and oats, mash in the morning, corn and oats for dinner and supper. This is their food until I get the first pullet's egg, which is usually when they are about four and a half months old, then I drop all corn meal and they never get any more, and when I say never I mean never! I keep up the mash of mixed feed and beef scraps until cold weather, then I add cooked vegetables to it; this, with the corn and oats mixed, is their food while they stay with me."

The "mixed feed" spoken of by Mrs. Hitchcock is a wheat product, and appears to be a mixture of fancy middlings and fine bran (shorts), and Mrs. H. gave as the reason why she fed no wheat at all that the "mixed feed" gave them all the wheat they ought to have. The cooked vegetables are potatoes, carrots, beets, etc., and the hens have sugar beets, turnips and carrots raw for green food in winter. The morning mash for her about 450 birds was one and a half bushels of the "mixed feed" and six quarts of beef scraps, about a third of the whole bulk being cooked vegetables.

Going out to the houses we found them just full of good looking, healthy, happy Plymouth Rock pullets; not quite such Rocks as we see in the shows, but farmers' Plymouth Rocks, and good ones, too. It will be understood that the houses are literally full when one realizes that there are but about two square feet of floor space per bird. The roost platform is three feet from the floor. It extends the whole length of the house and is five feet wide, the roost-poles are about a foot apart, and six inches in from back and front of the platform. Having the roost-platform three feet from the floor makes the whole floor space available for exercise, scratching, etc., and makes it possible to carry so large a number in small space. Originally the houses were divided into several pens each, but at Prof. Gowell's suggestion the partitions were removed, thus throwing the whole house open for the use of all the birds in that house.

Mrs. Hitchcock makes her hens pay her an average profit of about two dollars apiece a year. Eggs is the end worked for, and the average egg yield is about ten dozen each. As the eggs average about 25 cents a dozen, taking the year around, there is $2.50, and the birds sell for about fifty cents apiece when turned off to market. This makes a gross income of about three dollars per bird and as food costs about a dollar a head, there is about a two dollars per bird profit. In the year 1900 she kept 380 head, and the eggs and poultry sold returned her $927.67. As the expense for buildings is remarkably small for so large a number the returns certainly are gratifying!

Having in mind the caution some of the Lincoln county poultry growers had expressed, not to have the pullets lay too early, lest they molt and then stop laying, we asked Mrs. Hitchcock as to her experience. She said she had had that unfortunate experience, but in the past year or two very few of the pullets had molted. One egg farmer had spoken of preferring that his pullets should not begin laying until near December, then they got full growth and their eggs were of better size. We mentioned this to Mrs. Hitchcock and her comment was that there was little difficulty with the eggs being too small as at the time of year that pullets are beginning to lay, eggs are growing scarce, and dealers are less critical than when eggs are plenty. The few small eggs they do get are used in the family, and there is a better profit in having the pullets begin laying in October and kept laying.

That this is most "intensive" poultry keeping goes without saying. Here are 450 hens kept on about half an acre of ground room, carried through

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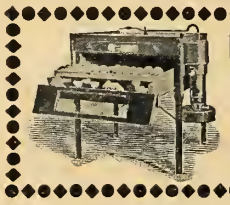

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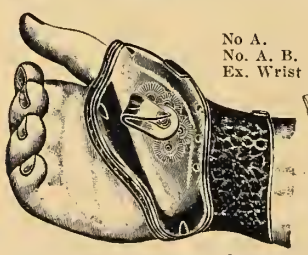
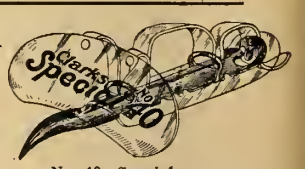


No A.
No. A. B.
Ex. Wrist



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SEND US ONLY $3 as a pledge of good faith and we will ship C. O. D. one of our No. 6, 8-gallon, heavy galvanized steel machines, complete, as shown in cut, with 10 feet ½ inch hose, fine brass cylinder pump, 8 ft. extension rod, strainer and 3 government receipts for preparing whitewash. **PRICE—No. 6, 8-gal size, complete as above, $12.00; freight prepaid, $12.75. No. 7, 15-gal size, complete as above, $15.00; freight prepaid, $15.75.**

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TESTED TO 60 LBS. PRESSURE We don't claim to sell the cheapest sprayer on the market, but we do claim and prove to have the best, which will prove the cheapest in the end. One or 2 minutes pumping will discharge solution in a mist, covering every part of foliage. Nothing better for spraying trees up to 25 feet high, shrubbery, potatoes, cotton and tobacco. Spraying fly removers and lice killers on stock. **PRICE—4-gal. galvanized, $5, same size copper $7. 5 gal. galvanized, $5.50, same size copper $8.** 4 foot bamboo rod to elevate spray, 75c; 8 foot $1; 10 foot $1.50 Add 50c to above prices and we will pay express charges. Our 100-page catalogue of sprayers, prepared spraying mixtures, cookers, carts, lice killers, churns, etc., mailed free. Manufactured only by

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Eastern Agents—Johnson & Stokes, Philadelphia, Pa. Excelsior Wire Poultry Supply Co., New York City.

a little less than a year of laying time, paying their owner about two dollars aplece profit, and then turned off to market to make room for the next crop of layers. The amount of capital invested is surprisingly small and the returns gratifyingly good. The labor also is surprisingly small; there being but two flocks, in two houses, reduces the work to the lowest possible terms, and Mrs. H'tchcock has done it all until a few months ago she resigned the mash-feeding to the "men-folks" because there was so much heavy work to that. The cleaning off of the droppings properly belonged to the men folks, and as they wanted the dressing for the grass land it was right they should take the labor. The two boys are betting old enough to help, and Mrs. H. can well be content to resign portions of the work to them, and she do the directing.—A. F. Hunter, in Reliable Poultry Journal.

The Mulberry for Poultry Yards.

It is often desirable to have a shade tree in a poultry yard, and in such a case a very good tree is the mulberry. It makes ample shade, besides giving fruit in its season which is much enjoyed by poultry. There are several sorts known as ever-bearing, and of these the Downing is the most planted at the North and the Hick's at the South. I am not familiar with the Hick's except in a limited way, but as between the Downing and the common European mulberry, I would prefer the European for profusion of fruit. It is the Morus Alba, the one desired by those engaged in silk culture, and exists in both white fruited and black fruited forms. The fruit of this and other kinds drop day by day as they ripen, keeping up a supply for from four to six weeks, and the fruit is eagerly sought for by fowls. The Downing's Everbearing is a large, dark red fruit and the last ripening. The everbearing sorts are raised by layering and budding; but the other varieties are readily raised from seeds.—Practical Farmer.

Success With Poultry on a Small Lot.

Dr. Ira T. Bronson, Sedalia, Mo., sends to Reliable Poultry Journal the following interesting article in regard to his method of managing a flock of poultry on a city lot.

I am an amateur in the poultry business, having only a small colony in the city, three small city lots 45x 120 feet each, yet I am handling nearly 100 Barred Rocks with some satisfaction to myself and family. Have some fine birds that have been giving a good account of themselves through the entire year, only stopping to rest a few weeks while molting. I give them close attention, plenty to eat and drink, a warm room for sleeping and a roomy shed for their work during working hours, the latter meaning every hour during daylight. Their sleeping quarters, all in one room (12x 8 feet) are swept clean every morning and dusted over, droppings board and floor, with a light covering of wood and coal ashes. The litter, composed of dried leaves and straw, is removed from the scratching or working shed once a month and replaced with fresh material. They are never permitted to go outside of shelter when there is snow on the ground nor during cold or rainy days. I never have any sickness in my flocks. True, now and then a hen dies, but the demise has always been sudden as a result of age or over-fatness. I call it apoplexy or fatty degeneration. I only let them live too long. A hen should not be allowed to live to be more than two years old unless she is exceptionally fine and then only to breed from. I have never had a case of roup 'n my yards; neither do I have to contend with colds, bronchitis nor pneumonia. I never allow them to sleep in drafts nor to get wet. I am hatching all my chickens in incubators and I think with fair success, better at least than when hatching with hens. I raise them in brooders and hardly ever lose a chicken after it is well hatched. I never use condiments nor medicines of any kind. It is bad enough to give such things to the human animal. When they are well they don't need it, and when sick it does but little good.

My birds are never troubled with vermin; never saw any on my chicks, but once, and those they caught from a stray. I soon destroyed them all in the following manner: I noticed the youngsters, the chicks, were not doing well, and thinkIng the cause was from not being warm enough during the n'ghts, I concluded to warm them by placing in their sleeping quarters, a large dry goods box, a jug of hot water wrapped about with a gunny sack. Upon removing the jug the next morning I found, much to my surprise, the gunny sack literally teeming with little red mites. So thick were they that in places the sack seemed to have spots of red paint upon it. I immediately knew what ailed my chicks. It at once gave the sack a good sprinkling of pure coal oil, one of the best insecticides; gave the box a good dose also. Repeated the hot water jug the next night and found but a few mites in the morning. I repeated the coal oil dosage the second time and I have had no return of the invaders since.

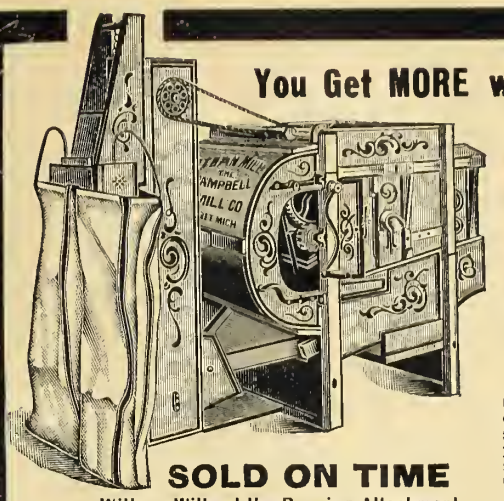
I will here relate an incident to encourage the novice with the incubator When he has been careless and permitted the heat to drop for a few hours below what is considered safe that he may not give up all for lost. I had a hen on some special eggs, Rhode Island Reds. On the 19th day she accidentally was shut out from her nest and remained off the nest about six hours and the atmosphere below freezing. My daughter, thinking the hen had voluntarily deserted her nest, put the eggs in the incubator as an experiment. To our surprise, every egg hatched on the 22d day. A good hatch, although a little behind time. I believe eggs from v'gorous, healthy birds will stand more adversity by far than eggs from weaklings.

Bargain Offerings in Plumbing.

In this issue of The Fult-Grower the Chicago House Wrecking Co., Chicago, Ill., advertises bargain prices of high-class bathroom fixtures. This advertisement is illustrated, showing the character of the supplies furnished, and will certainly appeal to all our readers. Another advertisement of this firm calls attention to steam heating plants or plants for heating houses with hot water. As winter approaches this subject is more timely, and Fruit-Grower readers should read this advertisment and send for the hooklet telling ahout these plants. It will surprise you how cheaply these plants can be installed, and the added comfort they will give will make the winter more pleasant in every way. Look up these advertisements, and when you write to the firm state that you saw the advertisements in The Western Fruit-Grower.

Correspondence Course in Bee-Keeping.

The A. I. Root Company, Medina, Ohio, has announced a new departure which will prove interesting to Fruit-Grower readers. This company has arranged a correspondence course in hee-keeping, so that those who desire to know more of this business can have the help of experienced hee-keepers. Of course it is not possible to learn all ahout hee-keeping hy mail—no one expects that. But with a hive of hees at home, for practical work, and with experienced men to answer the questions which will come to one, this course can no douht he made very helpful. Fruit farmers should he interested in hee-keeping, and we would recommend that our readers who are interested write the A. I. Root Company, Mdina, Ohio, for particulars, mentioning the Western Fruit-Grower when you write.



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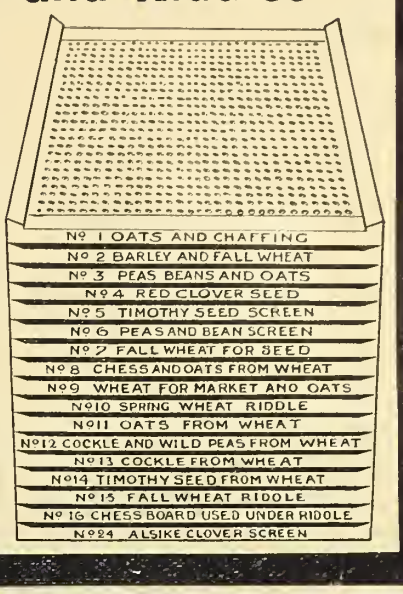

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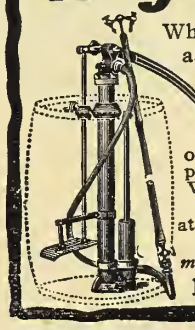

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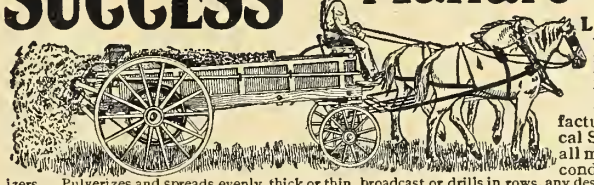

Leads every other machine for the mechanical spreading of manure. Its superiority appears in the fact that it is a distinct improvement on the Kemp Spreader, which we still manufacture and which has been the typical Spreader for 25 years. Spreads all manures of every character and condition and all commercial fertilizers. Pulverizes and spreads evenly, thick or thin, broadcast or drills in rows, any desired quantity per acre, unloading the largest load in 3 to 5 minutes; apron automatically returns to position in the next 65 feet driven.

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for convenience of handling and perfection of work. Notably superior in its Beater Freeing device, Direct Chain Beater Gear, Speed Regulation and Automatic Return of Apron. Positive and dependable in all movements. Simplest in gear, lightest in draft, least chance for breakage. The driver never dismounts for any purpose but controls everything from his seat. Made in four sizes and sold under strongest guarantee as to materials, workmanship and duty. Investigate fully before buying. Catalogue with valuable chapter on farm fertilizing mailed free.

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MONEY IN EGGS When you keep them until prices are high. Can keep two years if necessary, absolutely fresh. No work, no experimenting no loss, no special place required to store them, protects against all atmospherical changes. Inexpensive. Write for free circular, also handsome Art Folder of my Imperial Poultry Farm. J. C. Heath, Valley Juuction, Iowa, R. F. D. 2, Dep't N

Road-Dragging

How Farmers Can Co-Operate and Have Good Roads

FOR a number of years there has been much interest all over the country in a plan of road-making which has been made popular by Mr. D. Ward King, Maitland, Mo. This plan consists in using a home-made drag over the roads immediately after every rain. Each farmer drags the road reaching from his front gate to the gate of his neighbor on the way to town. By this co-operative plan of road-making good roads can be secured, even where macadamized roads are not practicable.

Believing that the road problem is an important one everywhere, and especially to persons who travel these roads as often as do fruit farmers, The Fruit-Grower presents herewith some of the facts concerning the King method, with illustrations showing the results. Mr. King's plan is simple, but requires the co-operation of every land-owner. A drag is made, according to the accompanying diagram. This drag is used after every rain, while the soil is still moist. Its use tends to drag the earth to the center, creating a grade which will shed water; the packing of the soil by the drag makes a surface which will shed water, and by dragging the road ruts are filled and prevented from being formed again. Then, too, the drag will kill weeds in the roadway, which are always a source of trouble, causing the water to collect in holes, and preventing the earth from drying rapidly after a rain. Mr. King's plan simply puts the road in such shape that water will flow from it, and the surface of the road in such condition that it will shed the water readily. We quote from Mr. King's statement in a bulletin of the Missouri Agricultural Department the remainder of this article, and are indebted to this board for the use of the cuts used to illustrate the article:

The most difficult part of road dragging is getting at it. All the rest is so simple that one learns it in the doing. The first noticeable effect is the smoothing of the road surface and this in time allows the rain and snow water to flow off, and encourages the distribution of travel over the road from side to side.

Teams usually follow the beaten trail. Dragging destroys the old trail and the new trail, each time broader and less definite than before, is made on a different portion of the highway. By dragging while the earth is yet moist the road finally becomes a series of practically water-proof layers of puddled earth, each one of which is rolled and pounded by the wheels and hoofs of travel. Almost imperceptibly the center of the road is elevated until you discover you have made a smooth grade that is not easily affected by bad weather.

Dragging kills the weeds in the seed leaf. It also does away with the bumps at each side of bridges and culverts. Regular dragging fills them and they become as solid as the rest of the road. As the wheel tracks are all wiped out the water does not run to the bridge after every little shower as it used to do, so you can drive as swiftly over the culverts as over any other portion of the dragged road.

A peculiarity about road dragging is that you do not comprehend the steady improvement until after your neighbor begins. When he begins, then you will see how much you have gained. Of course you knew it was better than the common road, but you did not know it was so much better this year than it was last. But if your neighbor is a year behind you, the extra year's dragging your road has had will be apparent at every wet

Number "1 C," is three fourths of mile south of "2 B," at a cross road. The dragged road makes a turn at the windmill. Mr. King having been requested by Sec'y Ellis to get some views of nearby roads not dragged secured the service of a photographer and accompanied by Mr. Garah Carson an enterprising liveryman of Maitland, who kindly furnished the team and carriage. "When we drove into this place," says Mr. King, "we had no idea that we could get a horse down. We thought we would stop in the mud and have a photograph taken that would show the depth of the mud."

Number "2 B." This is a photo of a clay hill south of D. Ward King's house that has been dragged since 1896. The hats were placed in the road to bring out the curvature of the surface. This road is 25 feet wide between the ditches and 40 feet between the fences. Beginning at the top of this hill and going south a half mile stretch of road has not cost the county a penny since the drag has been used. On the day when "1 C" was taken this road was firm, smooth and dry.

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Of opportunities for establishing profitable manufacturing industries; of rich mineral locations, and splendid business openings?

If you want to know the details of any or all of these write me; this office is maintained by the **Louisville & Nashville Railroad Company** to supply information regarding the great country it serves. I will gladly advise you fully and truthfully.

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JUNE BUD PEACH
this season is looking unusually fine, and we now feel confident that we will make the finest June Buds that we ever grew.
We have all the standard commercial varieties in June Buds, also have a complete assortment of 1-year Peach, Pear and Cherry and 2-year Apple. Write for Catalogue and prices.
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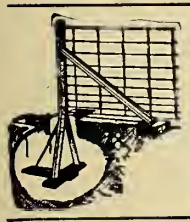

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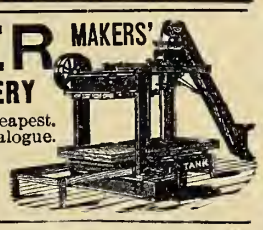

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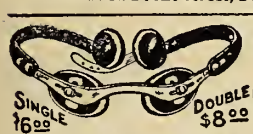

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spell. Your road is a year drier, a year harder and a year thicker than his. His road will cut up quicker and deeper and will not dry near so soon as yours.

At first you will have to drag when part of the road is too wet. But after a while it will dry evenly. And the first few times you drag it will be better for you to merely drive down one wheel track and back the other, moving the dirt toward the center of the wagon track. Gradually widen as you get a chance. This will give a solid foundation. If the wagon track is at one side of the highway begin right there anyhow. The rest will follow in time. Don't be in a hurry. Make haste slowly. Remember you cannot successfully give a house three coats of paint in twenty-four hours; nor can you make a fine crop by plowing the corn four times in one day. First, make a drag, second use it every time you can improve the road by dragging, practice will make both you and the road perfect—almost.

The hitch is next in importance to the time at which the dragging is done. The right time is just as the road dries after a rain or when it is thawed on top during the winter and spring, and it should be dragged every time.

Of course a smooth surface for travel is thus produced, but a more valuable result is that the road will shed the next rain instead of absorbing it. This is the reason why the road should be dragged every time, so that it will always be ready for the next rain. If I do not say anything else that is remembered—and if the reader does not get any other thought I want him to get that idea—the way to make a good dirt road is to keep it so that the next rain will not go into it. This means dragging only about once a month on an average. I have kept track of it in order that I might be able to speak with authority as to the amount of time and I find that the average is twelve times a year, that is only once a month; not much to secure a good road. I dragged from my own front gate to my neighbor's front gate, a half mile. It takes about twenty minutes. I don't make very many trips to town before I have regained the time I expended in dragging, to say nothing of the gain to my neighbors and the general public.

More dirt can be moved and more of a show can be made by dragging the road during thaws in winter weather than at any other season. At such a time the soil is crumbly and mealy and pushes to the center very easily.

Somebody says that we can not get men or teams in May or June. Now I have given this matter very careful study, having been a road crank for eighteen or twenty years, and I have learned that if you will keep your road ready for the next rain you can do the work in February, March or April, depending a good deal on the season and upon your latitude. Then you will not find much to be done in May and June. In February, March and April, now notice, in February, March and April you can get out and work your roads before you get into your fields. The reason we do not get out and work our road is because it has not been touched since last autumn and is a great big loblolly, but if you had kept it ready for the next rain it would be fit to work. If you kept your road good last fall then it is in shape so that you can drag it when you can do nothing else with your team, because the road dries before your field does. In spring and winter you will find it best to drag the road when the surface is dry, but while the part just beneath the surface, that part reached by your drag, is still quite moist; in summer and early fall you will find it best to drag when the surface is just a little bit wet, because after the summer rains the soil an inch or half an inch below the surface gets dry before the surface. This may seem a little thing, but it amounts to a good deal in the course of a year's dragging. If you wait too long you can not do as much good as if you had dragged just at the right time when the road was soft in the middle.

Nor is an iron faced instrument absolutely necessary. I began with a drag made of an old post and a frost-bitten pump stock held together by two or three short pieces of inch board nailed on top. It pulled to pieces at the beginning of the second year and at first I simply drove a team straddled of one wheel track, going,

Number "3 D," is taken just in front of Mr. King's front gate. The windrow of clods at the lower right hand corner indicate that only one-half the road is in view, the other half was in like condition.

Number 5 D shows a stretch of road only a short distance from 3 D, taken same afternoon.

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The large and increasing demand for our Tree Paint compelled us to move our Paint Works from Westboro, Mo., to Independence, Mo., which joins Kansas City, Mo., and is the principal suburb city of this great business center. Our facilities for supplying our customers in all parts are unexcelled. Our capacity is five hundred gallons per day. We are now prepared to offer great inducements to agents.

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Lacon Nursery, Lacon, Illinois

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2 and 3 yrs. old, for Fall delivery in forty varieties, principally Jonathan, Ben Davis, Roman Stem, G. G. Pippin, Minkler, N. W. Greening, etc. Carload lots at extremely low price. Send for wholesale list.

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Buds, 75 cts. per 100; $5.00 per 1,000 by mail prepaid; 1-year trees by mail, prepaid, 3 for $1.00. Larger trees by freight or express.

WEST JERSEY NURSERIES
STANTON B. COLE, Bridgeton, N. J.

and of the other wheel track coming back, merely breaking the rim of earth that rises on each side of the wheel track and leaving the road in good condition for teamsters to "straddle the rut." After smashing both ruts I remember I used to look down the road approvingly, pat myself on the back and think I had the nicest road in the country; and while I did at that time, yet it would look very rough to me at present.

How to Use the Drag.

In conclusion I would like to make the following suggestions:

Don't drive too fast.

Don't walk; get on the drag and ride.

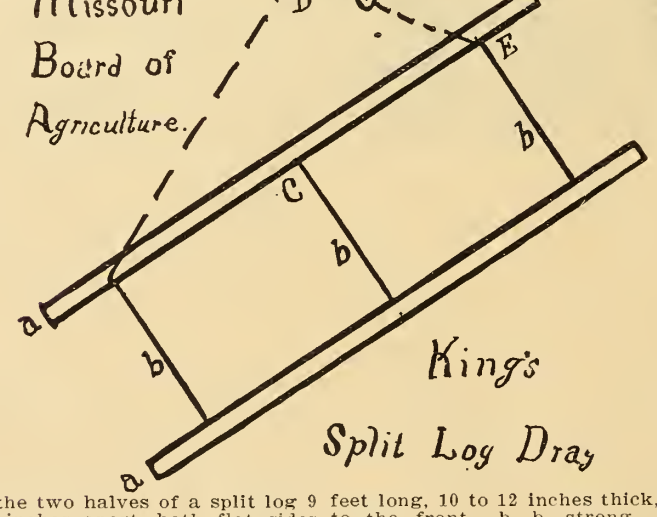
Don't wait for your neighbors to take hold; they may be waiting for you.

Don't bother about a tongue; it is much more trouble and expense and is of little benefit.

Don't wait for the big grader to come and shape up your road. All you can do first will help to make the work of the grader permanent.

Don't be particular about material. With an ax and a two-inch auger almost any kind of a log can be made into a drag. The one I used for several years is a box elder.

Don't try to drag with one piece; use two. One will scoop out the hollows in the road and deepen them. When two are used the one keeps the other up; and in a month or so



a, a the two halves of a split log 9 feet long, 10 to 12 inches thick, set on edge, 30 inches apart, both flat sides to the front. b, b, strong oak or hedge bars, the ends of which are wedged in two-inch auger holes bored through the slabs. Dotted line, chains or strong wire. D D1, rings to connect double-tree clevis. Hitch at D and stand at C, on a plank laid on the cross-bars, for ordinary work; or hitch at D1 and stand at E for ditch cleaning or to make the drag throw more dirt to the left. To move dirt to the right reverse position of driver and hitch. If working a clay or gumbo road, put iron, old wagon tire, or something of the sort, on lower edge of drag at end of six months; for softer soil at the end of twelve months.

the hollows will have filled and become level and hard like the balance of the road.

Road Dragging Catechism.

Would it not be better to plow the road before dragging?

No. Plowing gives a soft foundation. Plowing the middle of the road is a relic of the old dump scraper days.

What do you do where there are deep ruts in the road?

Drag them. If you drag when the surface is quite loose and soft you will be surprised how soon they will disappear.

How do you get the dirt to the middle of the road?

By hauling the drag slantwise with the end that is toward the center of the road a little to the rear of the other end.

But suppose the road is too narrow?

First drag the wheel tracks. After three or four rains or wet spells, plow a shallow furrow just outside the dragged part. Spread this over the road with the drag. Only plow one furrow. You may plow another furrow after the next rain. At each plowing you widen the road bed two feet.

How many horses do you use?

Two generally. Three if it is just as handy. Four when breaking colts. A good solid team in the center and a colt on each side. Two men on the drag, one to drive, the other to control the colts.

How do you drain the road?

If the earth is pushed to the middle of the road continually the road will drain itself.

Why not make the drag out of plank?

You can, and do good work. Mr. Charles Hill, of Mexico, Missouri, uses one made of three hard wood two by fours. But the split log is best. The plank drag is not so stiff and quivers and flounces.

Why not make the drag of heavy sawed timber, say 6x8 or 8x10?

Because they have a tendency to slip over the bumps. The log is better than the plank because it is more rigid and better than heavy timbers because its thin, tapering edge scrapes more surely.

Don't you grade up the road first?

No. The grading is done with the drag, gradually. By so doing, the road is solid all the time and is built on a solid foundation.

Is the dragging to be done without pay?

So far it has been volunteer work. I appeal to the progressive, public-spirited men of the community.

Should every farmer drag the road along his own land?

No. Let every farmer drag from his own front gate to his neighbor's front gate toward town. He is sure to see this piece of road often and is apt to feel more responsibility for it. This arrangement is not absolutely fair always, but it is more satisfactory than any other. The other plan gives rise to innumerable complications as a few moments' study will make clear to any thoughtful person.

At what angle do you haul the drag?

A safe answer is forty-five degrees, or in common parlance, exactly quartering. But bear in mind that the proper angle of a drag like the proper tension of a sewing machine depends somewhat on circumstances. The angle of the drag will need to be varied as the soil is moist or dry and as the surface is more or less convex. These slight changes can be made by the driver walking in one direction or the other on the drag.

What does it cost to drag a mile of road a year?

The cost is variously estimated at from $1.00 to $3.00. I think much depends on a season and what degree of excellence satisfies the man who drags. It is hard to estimate what it costs to comb a man's hair or black his shoes if he does it himself.

How do you keep the drag from dodging around sideways?

By not loading it too heavily. If a drag dodges around the earth that you are moving, it is because it is over-loaded. If you do not overload the drag, it will move and spread the earth. It is overloaded because you are trying to do too much. The secret of success in road dragging is to do a little often. Remember, if the drag dodges, it is generally because you have neglected to drag the road at some previous time when it needed dragging.

Will the dragged road stand heavy hauling like logging, etc?

Yes and no. A dragged road will stand more heavy hauling than an undragged road, but not so much as

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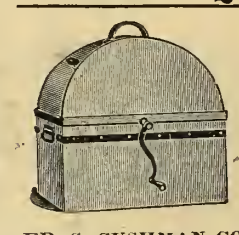

Put the clothes in, set the washer right on the stove, turn the crank slowly for 20 minutes, and the washing is done. Only a slight effort on your part to operate it; a ten-year-old child can do it. The clothes are thoroughly cleansed by forcing boiling water and steam through them, and all disease germs are destroyed. There is no rubbing or tearing of the clothes. Lace curtains and delicate fabrics are safely washed. It is made all of metal, light and simple and will last 15 years. Price the lowest.

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References: This Paper, Citizen Nat'l Bank, Green Bay, Wis. and Commercial Agencies.

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a macadamized or well kept gravel road.

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A sand road is a very different proposition from the black soil, clay or gumbo. An entirely different method must be adopted. Three things may be done to a sand road to make it better. First, keep it wet second, haul clay on to it; third, sprinkle it with crude oil, as they do in California and in some parts of southern Kansas and Texas. The drag might be beneficial in keeping the sand road perfectly flat so that it will absorb as much moisture as possible and retain it a long time. A drag is a very important tool on the oiled roads.

Reading Notice.

The First National Co-operative Society, Chicago, Ill., announces its second semi-annual dividend at the rate of 10 per cent per annum. This society was organized in July, 1903, and was the outgrowth of the Cash Buyers' Union which had been established eighteen years ago as one of the leading mail order houses of the country. The first semi-annual dividend at the rate of 10 per cent per annum was paid February 1, 1904, and the second dividend coming at the same rate, indicates a healthy condition of the business and stamps national co-operation a grand success. The society issues a large, illustrated general catalogue of 1,250 pages, containing a complete line of dependable merchandise at co-operative prices which are the lowest known for the high grade of goods which they carry. This catalogue should be in the home of every man and woman who has a desire to practice true economy. Write the First National Co-operative Society, 158-168 W. Van Buren St., Chicago, Ill., enclosing 15 cents, and they will send you this catalogue free of all cost. They will also send you The National Co-operative one year, and include a year's subscription to their wholesale grocery price list issued every other month, which alone will save an ordinary family $100 per year. The society will also be pleased to send their prospectus—a book of 122 pages, giving full details of an investment in their shares, to any person who desires it. This 122-page "Book of Information" is sent by mail postpaid. When writing the firm mention the Western Fruit-Grower.—Adv.

Change in Iowa Firm.

Editor Western Fruit-Grower:

We wish to announce through the columns of The Fruit-Grower the change that has recently taken place in the firm of J. Wragg & Sons Co., of Waukee, Iowa.

M. J. Wragg, formerly of this company, has disposed of his entire interest, together with his good will, to his brother, N. C. Wragg, and retired from the business on June 7th, under contract not to again engage in the nursery business in this part of Iowa.

The new company has been organized as follows: N. C. Wragg, president; Mrs. H. Wragg, vice-president; W. S. Monger, secretary.

The conditions of the firm were never better, and the outlook for a prosperous future is flattering.

Cherry Trees.

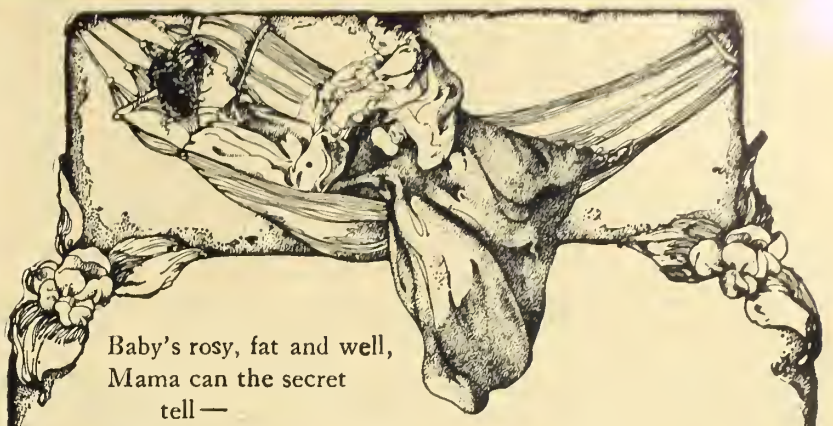
We wish to call the attention of our readers to the advertisement appearing in this issue of H. M. Simpson & Sons of Vincennes, Indiana. Those who are contemplating planting a cherry orchard should be especially interested. We can recommend this firm as being honorable in their dealings and know if you patronize them you will get satisfaction. Their cherry trees are young and thrifty and almost every one will grow when transplanted. Get in touch with them if you want something fancy and up to date.

Family Washing Done In An Hour.

The H. B. Brammer Mfg. Co., 1445 Rockingham Road, Davenport, Iowa, has done a world of good in the way of lightening woman's labors. It is the Company which for upwards of 25 years has been making washing machines. It has perfected and now manufactures three machines, the Original Brammer, The O. I. C. and the O. K. The last and perhaps the greatest is advertised in our columns. The worth of this O. K. Washer can hardly be estimated. The family washing which took the best part of every Monday can now be put on the line in an hour. That's much, but not all. The work is now light where formerly slavish in the extreme. It saves all the backaches, saves the strength, avoids the breathing for hours of steam from the tub. There is no question but the washing machine is doing as much for the wife as any single piece of farm machanery is doing for the farmer himself. And it does it one day in every week of the year. Washing machines in times past have been unsatisfactory. The machine having been perfected that is satisfactory, every household should be provided with one. It's an article that appeals to the women who work, and great as the invention is, the price is kept within reach of all. It is handled by local dealers in most every community. A book describing may be had by writing direct to the manufacturers.

Good Green Bay, Wis., House.

Frank C. Schilling, Green Bay, Wis., succeeded the L. C. Schilling Produce Co., a few years ago, and by careful management, hard work, and square dealing he has built up a large business. Shippers all over the country are in touch with him and Green Bay is a good market. Just now Mr. Schilling is looking for apples, pears and grapes, which he can handle to good advantage and shippers throughout the country will find no better house to do business with than Frank C. Schilling.



Baby's rosy, fat and well,
Mama can the secret
tell—
Minnesota's summer breeze
Sun and lake and forest trees,
Boating, bathing, without measure,
Give each day the greatest pleasure.

CHICAGO GREAT WESTERN RAILWAY

Only $15 For the round trip to St. Paul and Minneapolis.

For complete information apply to
M. F. MONTGOMERY, C. T. & P. A.,
414 Felix St., St. Joseph, Mo.

Are You Interested in the South?

Do You Care to Know of the Marvelous Development Now Going On In

THE GREAT CENTRAL SOUTH

Of Innumerable Opportunities for Young Men—or Old Ones—To Grow Rich?

Do you want to know about rich farming lands, fertile, well located, on a Trunk Line Railroad, which will produce two, three and four crops from the same field each year? Land now to be had at from $3.00 to $5.00 an acre which will be worth from $30.00 to $150.00 within 10 years? About stock raising where the extreme of winter feeding is but six (6) short weeks? Of places where truck growing and fruit raising yield enormous returns each year? Of a land where you can live out of doors every day in the year? Of opportunities for establishing profitable manufacturing industries; of rich mineral location and splendid business openings?

If you want to know the details of any or all of these, write me. I will gladly advise you ully and truthfully.

G. A. PARK, General Immigration and Industrial Agent
LOUISVILLE & NASHVILLE RAILROAD CO.
LOUISVILLE, KY.

FRISCO SYSTEM

OPENING of a NEW and THOROUGHLY EQUIPPED Line

BETWEEN

ST. LOUIS and CHICAGO

Sunday, July 31st, 1904

Thoroughly Equipped trains leave St. Louis and Chicago nightly (after arrival of incoming trains), arriving either city the following morning. Equipment entirely new; lavish in design, elaborate in furnishings. Ask your Ticket Agent, or address,

Passenger Traffic Department

ST. LOUIS

A Pleasure To Answer Questions

Write, or call, and I will tell you what the cost of a ticket is to any point east, west, southwest or northwest. I will also let you know the best way to reach it, when you will arrive, whether or not a change of cars is necessary, and why you should take the Rock Island System.

The finest sleepers Pullman could build are now in through service between St. Joseph and Chicago via the Rock Island. Leave Union Station every evening at 7:05 o'clock.

Rock Island System

JOHN J. GOODRICH
City Passenger Agent
6th and Edmond Sts., St. Joseph, Mo.

Strawberry Growing In Alabama.

Among the sections where strawberries are grown for Northern markets, the Alabama country is one of the newest. Some of the tales which come from this country read almost like romances. The growers down there seem to have early learned the necessity of co-operative shipping, and have started along right lines. A secretary of an association looks after the shipping. The railroad—the particular section we have in mind is on the line of the Louisville & Nashville—works with the growers to make the business profitable. The railway company has traveling freight agents in all Northern markets, and these report to headquarters every day the state of the market in their respective cities. This information is placed in the hands of the shipping associations, so that they can be informed of the conditions of various markets. If a car of fruit has been shipped to a given market, which is over-stocked, this car can be diverted to some other point, where conditions are better. It can be diverted even a second time, if need be, and thus reach the most favorable market. This help on the part of the railway company enables the growers to reach the best markets, and returns from shipments are much more satisfactory. The Alabama growers are to be congratulated upon having the assistance of the L. & N. railway to this extent. Not every fruit-growing section has this help.

The two favorite varieties grown in this Alabama country are Klondyke and Lady Thompson. Yields are not large, as large yields go in some other parts of the country, but prices are high. Land is cheap, and returns are remarkably quick. Land planted to strawberries in October will yield a good crop the following spring, but will not reach the maximum yield until later. One of the best sections is near Castleberry, Ala., about half way between Mobile and Montgomery. Here the small growers have a good association, and in addition there are a number of large growers who ship independently. It seems that the growers in this section have learned a lesson which is yet to be learned by some of the growers elsewhere—that is, that small acreages result in better fruit and greater profits.

The Castleberry Strawberry Growers' Association is composed of forty or fifty small growers, with a total acreage of 155 acres. This year the association sold forty carloads of fruit, or about 17,000 crates, bringing $40,000, or an average of over $2.23 per crate. This was an average of over $258 per acre, which is good returns from strawberry fields. Other growers, however, have far exceeded this yield. Two incorporated companies which depend on hired help for all the labor, one earned 60 per cent on the capital stock of the company this year. Another 114 per cent. Paul Rose, well known as a melon and strawberry grower of Michigan, has sixteen acres of strawberries, which bore this year for the first time. Returns were at the rate of $209.71 per acre. The field will not reach its maximum until about the third year of fruiting, it is said. It is estimated 10,000 acres in strawberries will be marketed from this Alabama section in 1906.

Most of the picking is done by negroes, who are paid by the box. The favorite crate is 32-quart carrier, which ships well in refrigerator cars. Of the two varieties which are most largely grown, Lady Thompson and Klondyke, the latter is said to be more profitable. It is firmer than Lady Thompson, arrives on market in better condition, and therefore brings better prices. It is claimed that the Alabama growers, using refrigerator car service, can deliver their fruit on Northern markets for about 2 or 2½ cents per quart for freight charges. Florida berries, which compete with them, ship by express, and it costs about 12 cents a quart to lay their fruit down on Northern markets. This explains why the Alabama section is being built up so rapidly.

The May issue of North and South, a paper published at Louisville, Ky., is devoted to the strawberry industry in Alabama, and from this paper most of the facts in this article are taken. This paper will be sent free, as a sample, to those of our readers who ask for same. When you write ask for May (1904)) issue, and mention the Western Fruit-Grower.

Tree Planting as a Protection Against Floods.

The Bureau of Forestry of the Department of Agriculture has issued a bulletin entitled "Control of Kansas River Floods," which contains suggestions which will be helpful to all persons who are in districts which may be subject to overflow. The bulletin states that the property loss in the floods of 1903 was $20,000,000, and over 100 lives were lost. Attention is called to the fact that within a comparatively short time the timber has been cut from along the Kansas River. Trees once protected the banks, and the course of the stream was winding and the current was not swift. With the trees out of the way when the flood came, the water rushed ed over the lands, taking a direct course, and naturally the current was much swifter than when water flowed in the regular channel. Deep cuts were made, holes were dug, leaving lakes where once great crops were produced and in many places deposits of sand two to six feet deep, were left on the soil.

The Bureau of Forestry has devised systems of tree planting for the river banks, the sand-covered lands, and the deeply eroded lands. The object of the first is to prevent washing of the banks, to protect the whole area from the full force of floods, and in time of overflow to check the tendency to gully and cut new channels. The last two systems of planting are for ultimately reclaiming the now destroyed lands, and making them produce, in the meantime, a valuable wood product while the work of reclaimation is going on.

The sanded lands are now useless for crops, but will grow cottonwood, which twenty years hence will make valuable sawlogs. In the meantime the trees will be reclaiming the land for field crops. This they will do partly by the fertilizing effect of the decaying forest litter. But should the flood waters return again, the timber would very likely be in a position to render much greater service. Examination of the area affected a year ago shows strikingly that where protective growths of cottonwood checked the rush of the current the land beyond was generally covered not with sand but with silt, and is often if anything more fertile than before. With extensive planting of forest trees another flood would undoubtedly bring back at once to fertility much of the land which has now been made barren.

The Bureau of Forestry is now sending to the citizens of the Kaw Valley a mimeographed circular of recommendations or guidance in forest planting on their damaged lands, in which it is said:

"Whenever the river has changed its course and straightened its channel, every possible effort should be put forth to keep it straight. Much of the damage that was caused in the great flood of 1903 is directly traceable to crooks in the stream. The soft, bare banks should be covered with willows at the earliest possible moment, to prevent the stream from again becoming crooked. In addition to the protection of the caving river banks and the reclamation of the sanded and eroded lands, the landowners of the Kansas River Valley should immediately cooperate to secure continuous belts of timber 250 feet wide on both banks of the stream. Such protective belts will be far more serviceable than dikes of earth or masonry in mitigating the destruction that may occur from overflows. The future wealth and productiveness of the valley as a whole will be largely dependent upon the practice of forestry for protection against devastation by floods."

World's Fair Visitors.

The pavilion erected by the Frisco-Rock Island Systems at Main Entrance of the World's Fair is surely a place of no little interest, in fact it is one of the many attractions.

Visitors to the World's Fair are cordially invited to inspect the Frisco-Rock Island System building. Here will be found a place of rest, courteous attention, besides there will be distributed free of cost, souvenirs and descriptive literature of the Great Southwest. The reader will, undoubtedly, overlook a very important attraction in case of failure to visit the Frisco-Rock Island System pavilion.

Remember, Main Entrance World's Fair.

OUR BIG STATION RIGHT AT THE GATES!

"Follow the Flag"

WABASH TO ST. LOUIS

ONLY LINE TO *World's Fair* MAIN ENTRANCE

All trains from the West connect with the WABASH at Kansas City.

Ask your Agents for tickets over the WABASH.

L. S. McCLELLAN, Western Passenger Agent.
H. C. SHIELDS, Traveling Passenger Agent.

903 Main Street, Kansas City, Mo.

ILLINOIS CENTRAL RAILROAD — MISSISSIPPI CENTRAL VALLEY ROUTE

Cheap Excursions VIA Illinois Central R.R.

Round Trip Rates from Omaha, Neb.

TICKETS TO POINTS BELOW ON SALE DAILY UNTIL SEPTEMBER 30th, RETURN OCTOBER 31st:

Montreal, P. Q.	$33.00	Cambridge Springs, Pa.	$27.15
Buffalo, N. Y.	27.15	St. Paul-Minneapolis, Minn.	12.50
Put-in-Bay, Ohio	22.00	Madison Lake, Minn.	10.50
Chautauqua Lake Points, Pa.	27.15	Alexandria, Minn.	15.25
Chicago, Ill.	20.00	Walker, Minn. (Leach Lake)	17.10
Chicago, Ill. (via St. Louis one way).	22.80	Rice Lake, Wis.	15.00
Charleviox, Mich	24.25	Winnipeg, Man.	35.00
Windsor, Ontario	21.50	Waterville, Minn.	10.50
Quebec, P. Q.	38.85	Madison Lake, Minn.	10.30
Mackinac Island, Mich.	26.25	Spirit Lake, Ia. (Okohoji)	9.95
Toronto, Ont.	27.15	Waterloo, Ia.	11.85

Correspondingly low rates to many other points in Illinois, Michigan, Wisconsin, Minnesota, Ontario and New York State.
Attractive tours of the Great Lakes via rail to Chicago or Duluth and steamer.
Before planning your trip, call at city ticket office, No. 1402 Farnam St., Omaha, or write
W. H. BRILL, Dist. Passenger Agent, OMAHA, NEBRASKA.

Cooled and Lighted by Electricity

In addition to the electric light in each berth, which can be turned on or off, or for a dim light, as you desire, there is a large electric fan in the compartment observation car of The Southwest Limited to make summer traveling comfortable. You will find many other pleasing innovations about this Train of Trains between Kansas City and Chicago on the

Chicago, Milwaukee & St. Paul Railway

Leave Kansas City, Union Station, 5:55 p. m.; Grand Avenue, 6:07 p. m. Arrive Chicago, Union Station, 8:55 a. m., in good season for connections North and East, or for the day's business. Folder and summer books free.

G. L. COBB,
Southwestern Passenger Agent,
907 Main St., Kansas City, Mo.

PILES NO MONEY TILL CURED. 25 YEARS ESTABLISHED. We send FREE and postpaid a 200 page treatise on Piles, Fistula and Diseases of the Rectum; also 100 page illus. treatise on Diseases of Women. Of the thousands cured by our mild method, none paid a cent till cured—we furnish their names as application. DRS. THORNTON & MINOR, 1009 Oak St., Kansas City, Mo.

STARK FRUIT BOOK

44 pages 9 x 12 inches; 22 colored plates showing in natural colors 216 varieties of Fruit, with concise description, including season of ripening of each; 64 half-tone views of Nurseries, Orchards, Packing Houses, etc. Send 50 cts. and we will send the book post-paid, and Rebate Ticket permitting return of book by mail within 60 days and we refund 50 cts. Or, mail within 1 year, Rebate Ticket with $12 order for nursery stock and we credit $1.00 in part payment on order and you KEEP THE BOOK free. WE PAY THE FREIGHT. WE PAY CASH weekly and want more home and traveling salesmen. OUTFIT FREE.—STARK BRO'S, Louisiana, Mo., Atlantic, Iowa, Fayetteville, Ark.

WESTERN THE FRUIT-GROWER

ST. JOSEPH, MISSOURI

AN ILLUSTRATED MONTHLY MAGAZINE FOR PROGRESSIVE AMERICAN FARMERS

SUBSCRIPTION FIFTY CENTS PER YEAR THREE YEARS FOR ONE DOLLAR

VOLUME FIFTEEN — OCTOBER 1904 — NUMBER TEN

The Call For 1905.

Two hundred and twenty-five writers from all parts of the world have been enlisted to write for

The YOUTH'S COMPANION

FOR 1905.

No expense or care has been spared to make the paper excel itself every week during the next year. Among the eminent men and women who will write for The Companion are:

MR. JUSTICE BREWER.
EX-SENATOR VEST.
PROFESSOR SHALER.
HON. ANDREW D. WHITE.
COMMANDER PEARY.
SIR WILLIAM RAMSAY.
MRS. BURTON HARRISON.
GEN. A. W. GREELY.
REV. F. E. CLARK.
EMILE OLLIVIER.
SURGEON-GENERAL RIXEY.
JACK LONDON.
HAMLIN GARLAND.
HON. CARROLL D. WRIGHT.
"IAN MACLAREN."
CHARLES G. D. ROBERTS.
AMELIA E. BARR.
OLIVE THORNE MILLER.
AGNES REPPLIER.
MME. MARCELLA SEMBRICH.
THE CHINESE MINISTER AT WASHINGTON.

Sample Copies of the Paper sent FREE to any address.

Every New Subscriber

Who cuts out and sends this slip or the name of this magazine at once with $1.75 for The Youth's Companion for the 52 weeks of 1905 will receive:

Free

All the issues of The Companion for Nov. and Dec., 1904.
Thanksgiving, Christmas and New Year's Double Numbers.
The Companion Carnation Calendar for 1905 (in 12 colors and gold).
As much reading in the year as would fill twenty octavo volumes.

A2

$10,000 will be divided equally among subscribers who secure three new subscriptions. Send for information.

THE YOUTH'S COMPANION, 201 Columbus Ave., BOSTON, MASS.

As a Beacon Light

Vitae-Ore points the way for storm-tossed sufferers to a haven of Health and Comfort. If you have been drifting in a sea of sickness and disease, towards the rocks and shoals of **Chronic Invalidism,** port your helm ere it be too late, take heed of the message of **Hope** and **Safety** which it flashes to you; **stop drifting** about in a helpless, undecided manner, first on one course and then another, but begin the proper treatment immediately and reach the goal you are seeking by the route **so many have traveled with success.** Every person who has used Vitae-Ore **is willing** to act as a **pilot** for you, each knows the way from having followed it; attend their advice, **follow the light** and be cured as they have. **Can you afford to disregard it? READ OUR SPECIAL OFFER TO READERS OF THE WESTERN FRUIT-GROWER.**

YOU ARE TO BE THE JUDGE

Sent on 30 Days Trial
By Mail, Postpaid.
READ THIS OFFER

WE WILL send to every worthy person who writes us, mentioning The Western Fruit-Grower, a full-sized One Dollar package of VITAE-ORE, by mail, postpaid, sufficient for one month's treatment, to be paid for within one month's time after receipt, if the receiver can truthfully say that its use has done him or her more good than all the drugs and dopes of quacks or good doctors or patent medicines he or she has ever used. Read this over again carefully, and understand that we ask our pay only when it has done you good and not before. We take all the risk, you have nothing to lose. If it does not benefit you, you pay us nothing. VITAE-ORE is a natural, hard, adamantine rock-like substance —mineral—ORE—mined from the ground like gold and silver, and requires about twenty years for oxidization. It is a geological discovery, to which there is nothing added or taken from. It is the marvel of the century for curing disease, as thousands testify, and as no one, answering this, writing for a package, will deny after using.

VITAE-ORE will do the same for you as it has done for hundreds of readers of The Western Fruit-Grower, if you will give it a trial. Send for a $1.00 package at our risk. You have nothing to lose if the medicine does not benefit you. We want no one's money whom VITAE-ORE cannot benefit. Can anything be more fair? What sensible person, no matter how prejudiced he or she may be, who desires a cure and is willing to pay for it, would hesitate to try VITAE-ORE on this liberal offer? One package is usually sufficient to cure ordinary cases; two or three for chronic, obstinate cases. We mean just what we say in this announcement and will do just as we agree. Write today for a package at our risk and expense, giving your age and ailments, and mention The Western Fruit-Grower so that we may know you are entitled to this liberal offer.

You Are to Be the Judge!

VITAE-ORE is a natural product—as natural as the sunshine, the air you breathe, the water you drink or the food you eat. It is a God-made remedy, containing iron, sulphur and magnesia as made in Nature's laboratory, and supplies to the body those elements which are lacking in disease and restores all the bodily organs to a normal, healthy condition.

You Are to Be the Judge!

VITAE-ORE is a natural Mineral Spring in concentrated form. One package is equal in medicinal strength and curative value to 800 gallons of the most powerful efficacious mineral water, drank fresh from the springs. It is the most potent and powerful antiseptic constitutional tonic, blood, brawn and brain builder, flesh maker and health restorative ever discovered. It gives tone to the system and imparts new life, strength and vitality. It is a germ destroyer, system fortifier, and kills the nidus of the disease.

A Certain and Never Failing Cure for

- **Rheumatism**
- **Bright's Disease and Dropsy**
- **La Grippe**
- **Blood Poisoning**
- **Sores and Ulcers**
- **Malarial Fever**
- **Nervous Prostration and Anaemia**
- **Liver, Kidney and Bladder Troubles**
- **Catarrh of Any Part**
- **Female Complaints**
- **Stomach and Bowel Disorders**
- **General Debility.**

OLD PEOPLE—For the aged there is nothing better than **Vitae Ore.** The loss of appetite and general breaking down of the digestive organs is delayed, the blood purified and enriched, the vital organs are strengthened and a peaceful old age may be enjoyed by the use of this great natural remedy without drugs.

You Are to Be the Judge!

VITAE-ORE strikes the disease at its root, entirely eradicates every vestige or trace and the patient is cured to stay cured. As a Blood Purifier it is without a peer. No other remedy can equal it. It supplies nature with the elements to build health into diseased bodies. It is the ideal tonic for Weak and Anaemic Men and Women. Its use makes the watery, impoverished blood become strong and virile, and as it comes through the veins imparts the color of health to the face a sparkle to the eye and strength and vigor to the system. When VITAE-ORE has done its work you will feel like a new being.

You Are to Be the Judge!

WOMEN Are you afflicted with any of the innumerable diseases which are so common and prevalent among your sex? We cannot mention them in this small space, but let us assure you that VITAE-ORE is the true "Balm of Gilead" to every sufferer and the many diseased conditions which unfit women for the full enjoyment of life and its duties may be at once alleviated and permanently eradicated by the use of this wonderful remedy.

You Are to Be the Judge!

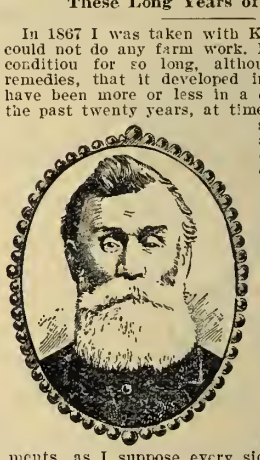
MEN Are you afflicted with any of the diseases peculiar to men? Have you in ignorance wronged and abused your body so that nerve power and vitality are wasting? Is Debility taking the vim of and fire of youth? Above everything else you need VITAE-ORE. In these conditions it proves to be a powerful tonic, a reviver, a vitalizer, restorer, force-builder. It is not a temporary stimulant, but builds up from the bottom by putting each organ, tissue, muscle and ligament in a healthy condition.

You Are to Be the Judge!

BEST DOCTORS FAIL

HAD KIDNEY TROUBLE FOR 30 YEARS, DROPSY 20 YEARS, AND RHEUMATISM 12 YEARS.

Vitae-Ore Triumphs Astonishingly After All These Long Years of Sickness.



In 1867 I was taken with Kidney Trouble and could not do any farm work. I continued in this condition for so long, although I tried many remedies, that it developed into Dropsy, and I have been more or less in a dropsical state for the past twenty years, at times most alarmingly so. To add to my already heavy burden, I was attacked with Rheumatism some 11 or 12 years ago, and this has been with me almost continuously since that time. I had the best doctors in the country, having continually searched and expended money to bring about a cure if such a thing were possible, but all to no avail. I also tried my share of all the advertised treatments, as I suppose every sick person does and must, with the same results. When I first learned of Vitae-Ore I had tried so long and fruitlessly that I laughed at the claims set forth, but as I investigated further and found that it was not a manufactured compound but a natural mineral ore, mined from a deposit, I grew interested in it and decided to at least give it a trial. I commenced taking Vitae-Ore three months ago and still take it, and am now as well and free from all these troubles as I ever expected to be and more. Vitae-Ore is certainly a powerful remedy, and I only wish that I had learned of it when it was first placed upon the market. It almost makes me heartsick to think of all the great suffering, pain and illness I could have saved, and the ability I could have had to do all I wanted to do. No ailing person should pass by the opportunity to try it when it is offered to them. D. L. STRAIN,
Shannon City, Iowa.

A MESSAGE FOR EVERY WOMEN

READ WHAT MRS. WALKER TELLS OF HER TERRIBLE SUFFERINGS.

Cured Sound and Hale in Three Weeks' Time.

When I sent for a trial package of Vitae-Ore I was suffering almost death. One doctor told me it was old age approaching; although I am only thirty-nine years old; another said it was caused by a fall I experienced some time ago, and still another pronounced it female weakness. I suffered terribly for months with pains in my bowels and limbs, and menstruation was very profuse and irregular. At one period I could not sleep for three nights in succession, and had to sit up in bed on account of the terrible pain. I do not see now how I endured the misery. I began to take Vitae-Ore one morning, and at night, after taking but three doses I rested much more than usual and slept some. When I had taken it for three days my pain and misery were all gone. Now, after only three weeks' use of the medicine I feel as well as I ever did in my life. I have had no trouble whatever this month. I can pick cotton and ride about on the roads, feeling better every day. I wish I could tell every suffering woman what Vitae-Ore has done for me. I thank the Lord every day that I can live and feel well, so that I can tell others what they can do to cure their sufferings. MRS. LAURA N. WALKER,
P. O. Box 21. Arlington, Okla.

NOT A PENNY UNLESS BENEFITED

This offer will challenge the attention and consideration, and afterward the gratitude of every living person who desires better health or who suffers pains, ills and diseases which have defied the medical world and grown worse with age. We care not for your skepticism, but ask only your investigation, and at our expense, regardless of what ills you have, by sending to us for a package. Address

THEO. NOEL CO., W. F. G. Dept., Vitae-Ore Building, Chicago, Ill.

The Western Fruit-Grower

An Illustrated Monthly Magazine For Progressive American Farmers

Volume Fifteen | ST. JOSEPH, MISSOURI, OCTOBER, 1904. | Number Ten

Packing Apples in Boxes

Some time ago Mr. E. C. Dickerson, North Yakima, Wash., promised us an article on the above subject, and we present it herewith. It will be especially interesting to growers in those sections where the box has not yet been introduced as an apple package,

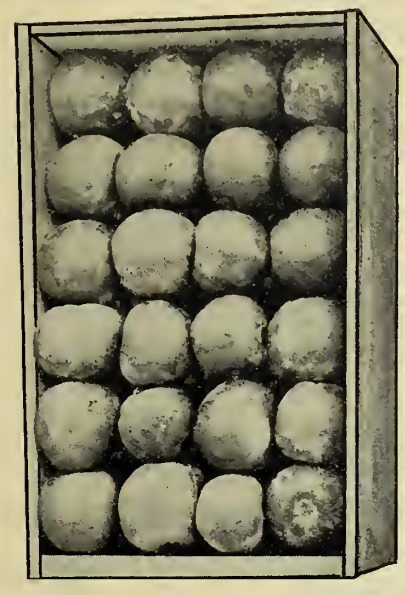


FIGURE 1.

and who are inexperienced in using this package. The only thing which will cause lack of interest on the part of many growers is that they have no apples this year. When we wrote Mr. Dickerson in regard to this matter he replied that it would be practically impossible to tell how the work is done, in a newspaper article. The process of packing in boxes must be illustrated by the actual work of packing, he said. However, with the accompanying illustrations, we believe Mr. Dickerson's article makes the matter clear to those who are interested in the subject. He writes as follows:

There are some thirty or forty sizes of apples, covering all the varieties and their various sizes or grades, which can be packed into the standard apple box in thirty or forty different styles. For commercial packing and shipping requirements most of the ordinary grades of apples grown can be handled in seven or eight different styles of packing, of which six differ-

FIGURE 2.

ent styles are shown and described below.

Figure 1 shows a four-row box of apples. This box is the largest sized apple that can be packed into the four row grade. The box contains just ninety-six apples. There are nine grades of the four-row apple, the smaller of which is shown in Figure 2 and contains 128 apples. Every layer in this box of 128 is packed in the same manner as that shown by the top layer. In the box containing ninety-six the width is too great to allow of their cheeks being all turned up, so in the layers below, according to the size of the apples, one or more of the layers are placed stem down.

Figure 3 shows the largest apples that can be packed into the five-row grade. The box contains just 140 specimens. This grade cannot be packed with a long and narrow apple as there must be four layers in this box.

Figure 4 shows the smallest five-row apple that can be packed in this grade. The box contains five layers and 250 apples. All the layers in this grade are placed in the same manner as shown in the top layer. This grade cannot be packed with a long apple. The five-row grades which are sometimes called straight fives are found in twenty-three different grades reaching from 140 down to 250 specimens in each box.

Figure 5 shows an odd grade of five-row apples. Without this style of a pack it is almost impossible to pack all the apples from your orchard and have them all packed neatly and correctly. The box shown in Figure 5 contains 213 apples. In this grade the center of every apple in the third and fifth layers comes directly over the center of its corresponding apple in the first layer. The center of every apple in the fourth layer comes directly over the center of its mate in the second layer. There are three grades of this style. In one the first row will contain eight apples, the second seven, the third eight again and then seven and eight, making a total of 188 apples in the box. In the second grade of this style, the first, last

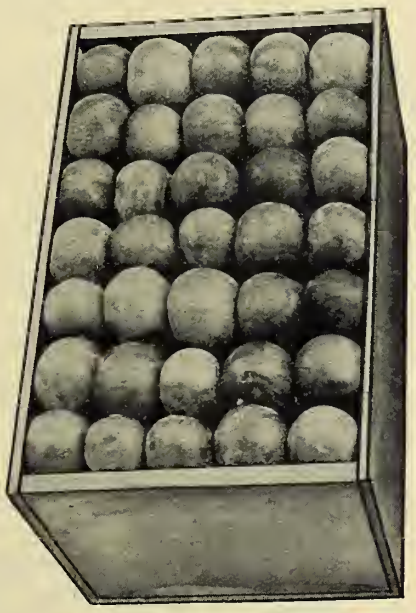


FIGURE 3.

and every row will contain eight apples with the box holding just 200 specimens. In the third grade of this style the first, third and fifth rows will contain nine apples, while the second and fourth will contain only eight, making the box hold 213 appless.

The sixth and last style of packing shown is represented by Figure 6. This box will contain 72 apples. Only the first of its four layers are shown. The core of all apples in the third layer will come directly over their mates in the first layer, but not over the cores of any apples in the second layer.

Nothing has been said of the various grades of six-row apples, as they are too small to offer to the apple eating public, though some pack and ship them to the penny fruit stands. The top layers of apples in any of the grades must be high enough that when the cover is nailed on the cover will touch each and every apple in that layer and touch it hard enough to compel every apple in the box to remain in touch with its neighbor apple

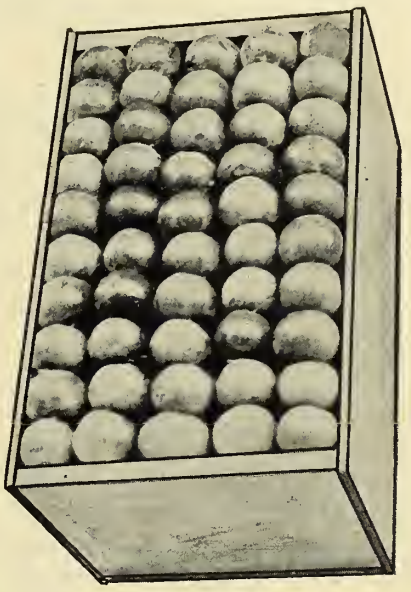


FIGURE 4.

in the box, the walls of the box itself or both, as the case may be, throughout its entire period of transportation.

When a box is finished packed the apples at the end of the box must not be more than an inch above the top of the box, while the center of the box should be from one to two inches higher so as to make a beautiful curve for the top of the box, which helps to hold the apples in the box together more snugly. Though every person has not the gift for the making of a good apple packer, most of them after a careful reading of the above can after more or less practice succeeed in packing neatly and rapidly. But remember practice makes perfect. In box apple packing rapidity and perfection do not go hand in hand.

E. C. DICKERSON,
North Yakima, Wash.

The editor of The Fruit-Grower visited Hutchinson, Kan., during the apple-packing season, and found some of the growers there were packing their fruit in boxes. The Yaggy Plantation, which will have perhaps

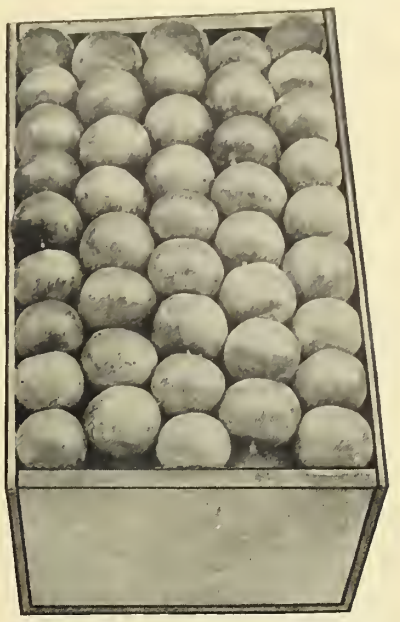


FIGURE 5.

50,000 boxes of apples, uses the box almost exclusively. However, the fruit is not packed in just the same manner as described by Mr. Dickerson. No attempt is made to sort the apples into sizes and pack in rows, as the Pacific coast growers do. This requires experience and time, and the Yaggy packers have not yet undertaken this method.

While at this place an apple buyer from Los Angeles, Cal., was present, trying to buy Winesap and Jonathan apples. This gentleman said his Western trade would not take apples packed in any other way except in rows and tiers; if he buys any of the boxed fruit, he takes the fruit to Los Angeles, sorts it and repacks it, with each apple wrapped in paper. Then it is sold to the best California trade.

"Strange as it may seem," said this buyer, "boxes packed as Mr. Yaggy packs them contain more apples than where the fruit is placed in the box in rows. The boxes as Mr. Yaggy packs them contain fifty pounds of fruit; as they will be repacked in California they will contain only forty pounds of fruit.

We might add just here that this

FIGURE 6.

buyer was offering $1 per box for Winesap, f. o. b. Hutchinson, but was getting but little fruit. Fred Harvey, who manages the eating houses along the Santa Fe and other railroads, bought 1,800 barrels of Jonathan and Grimes Golden apples for $4 per barrel, f. o. b. Hutchinson.. This shows the prices being received for apples at Hutchinson. Next month we will have a report of this trip, fully illustrated.

Special for November Issue

A feature of the November issue of The Fruit-Grower will be an article on the apple crop of Reno County, Kan., which is a record-breaker. Representatives of The Fruit-Grower have recently visited that section, and will have an interesting report of this trip.

Besides telling of the apple orchards, this article will deal with the great catalpa plantation of Messrs. Yaggy—one of the most profitable forestry plantations in this country. This article will be fully illustrated from original photographs. The regular departments will be up to the usual standard.

As the winter season approaches, The Fruit-Grower will grow larger and better. Every reader is urged to renew his subscription at this time, so as not to miss any of these excellent papers. Look at the date on your wrapper; if the date shows your subscription to have expired, *Renew It Today*. Send four new names and your own renewal, all for $1. Do this at once, if you please.

The Fruit-Grower Co., St. Joseph, Mo.

Cleanliness In the Orchard.

Apple scab has been much more prevalent and much more destructive in the Middle West this year than for a long time previous. This condition has doubtless been aggravated by the unseasonable weather early in the summer. Not only was the fruit attacked, causing much of it to drop and the remainder to be disfigured, but the foliage of the trees was affected to such an extent that late in summer many trees are as bare of leaves as they are in mid-winter. All of this is bad for the orchard business. There are various opinions as to the effect of the scab on the foliage this year upon next year's fruit crop. Some growers hold that the diseased foliage this year has prevented the formation of strong, healthy fruit buds for next year's crop; others claim that the result of this year's attack will not be much in evidence next year, provided that next season the disease is held in check.

But all growers agree to this: The outbreak of the disease this year and its wide distribution has resulted in lots of sources of infection for next year. For apple scab is not spontaneous, as some persons profess to believe. It is caused by spores, or minute organisms, which pass the winter in a dormant state, and are ready for business early in the spring. It follows, therefore, that with a widespread outbreak this year, there will be more sources of infection next spring than usual, unless steps are taken to destroy these harboring places.

The Idaho Experiment Station conducted some experiments in combating apple scab, and one feature of the results is interesting at this time.

The orchard in which the experiment was conducted had been badly attacked by scab the year previous to the experiment. There was scarcely any salable fruit on the place. At the close of this season of diseased fruit the owner had buried all the culls deep in the earth. Then he raked up and burned all the leaves, most of which were affected with the scab. Next spring and summer he gave the orchard several good cultivations.

Part of the trees in this orchard were sprayed and part left unsprayed as check. At the close of the season there was no scab on the sprayed trees, and very little on the unsprayed. Part of the freedom from scab was due to the weather conditions early in the season, which were unfavorable for the development of the disease. But another and more potent cause was found in the treatment the orchard had received, for the author of the bulletin says:

"* * * The second cause for so little scab in this orchard I cannot but think due to the splendid care it received from its owner. Not only all rotten and gnarled fruit, but all infested leaves, were carefully burned or buried. I firmly believe that more can be accomplished by carefully disposing of this rubbish in the fall, and thus obliterating the main source of infection, than by the more tedious and costly method of preventing the spread of the disease by spraying."

Still another orchard was used in this series of experiments, and results were very much the same. Both the sprayed and unsprayed trees were free from scab, all having been cultivated exactly alike. During the whole season the weeds had been kept down and the ground thoroughly cultivated. In October almost no weeds were to be seen over the entire tract.

"Though in this case also the season had much to do with the absence of scab," says the bulletin, "there is no doubt that the careful cultivation the orchard had received had been largely responsible for its suppression, and for the following reason: On the other side of the road, and less than a quarter of a mile distant from this orchard is another. This orchard, partly from the age of the gentleman owning it, partly from the many poor varieties and seedlings in it, partly from the great age of the trees, has been suffered to run down and almost out. It was not cultivated for years, thickets of seedlings had been allowed to grow up, and only the last year was it plowed and seeded to clover and grass. It has consequently been a veritable hotbed for scab, and no doubt has been the main distributing point for this disease for miles around. I had visited this orchard last year, when scab was quite bad all over the Palouse country, and had found fully 90 per cent of the fruit more or less diseased. It was with interest, therefore, in view of the scanty scab in the two orchards mentioned in this report, that I revisited this old orchard. Almost exactly the same state of affairs prevailed as the year before, the scab being scarcely less in evidence than during the other year.

"I consider this conclusive proof, as before stated, that the care given an orchard in the matter of cleaning up or plowing under rubbish, old fruit and leaves, followed by good clean cultivation, has as much to do with the suppression of scab as has spraying."

If these deductions are true—and there can be no doubt of the fact that cleanliness is an important factor in keeping down scab—it behooves many Western growers to clean up their orchads this fall, for there has been an abundance of scab this year, and there will be more next season if preventive measures are not adopted.

Wood Ashes for Fruit Trees.

Jacob Faith, Vernon County, Mo., says: "I have found from my experience that wood ashes is the best fertilizer we can put around our fruit trees. Ashes should be placed closer to the bodies of the trees than other fertilizers. Coal ashes are of little value, except on wet land, and trees should not be planted on wet land. I have trees over thirty years old, about which I have placed ashes for many years, and 90 per cent of them are in perfect condition, while other trees not so treated have long since died. The trees which had been treated also bore from one-fourth to one- half more marketable fruit than the untreated trees. The quantity of ashes to be placed about a tree depends on the size of the tree and the strength of the ashes. One peck of strong unleached ashes about a newly set tree is enough; double the quantity if ashes are leached. I place one to three bushels about trees five years old or more. I think wood ashes are better fertilizer than barnyard manure, as the former causes a sound growth, while the manure is apt to force a rapid growth, liable to winter kill. Nearly everyone has noticed how much better trees grow where a brush heap has been burned than on near-by soil; the same is true of grains. Trees and vines most benefited by application of wood ashes are, in the order named: Peach, pear, apple, cherry, plum, grape, raspberry, blackberry, strawberry."

It was claimed at one time that there was no pear blight in California. But this disease has been very destructive in that state this year, and the outlook is not encouraging.

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Behavior of Varieties of Strawberries.

In Prof. Card's notes on strawberries in your September issue I noted some important conclusions that are worthy of further discussion.

First; as to the productiveness of strong-growing varieties—I am inclined to think, as does Prof. Card, that our strongest growing varieties (those with very heavy stem and leaf) are among our least productive varieties. We had a good illustration of this proposition this season at the Nebraska Experiment Station in the Rough Rider strawberry. While it excelled all other varieties grown at the station in vigor of vine, it was very low in yield of berries. The Gandy—as I have known it for many years past—has always been a shy bearer, though in vigor of plant it stands near the top. The Gandy is also a good illustration of Card's conclusions that the late varieties are not productive. I have in mind enough exceptions to this proposition, however to warrant a modification of Prof. Card's conclusions.

As far back as 1886 I remember to have produced one of the largest crops of berries I ever grew and they were mainly of the Mount Vernon variety. This variety, though the latest, was normally a productive sort with me for several years. The Gandy came as a substitute—a firmer and better colored berry, but less productive. The Parker Earle is a noted example of a late berry that has, when well watered, furnished a heavy crop of berries. This season at the station it stood right up with Warfield, Senator Dunlap and Crescent as a crop producer. It was also one of our best berries in color and flavor. Brandywine and Sample are noteworthy examples of two medium late varieties that are not far excelled in productiveness. I have known one of our most successful Nebraska growers to have relied chiefly on these two varieties. Senator Dunlap was a disappointment to us this season because of its low quality and poorly filled berries. There were very few of our visitors during the berry season this year but that pronounced it of poor flavor. I am inclined to think the excessive moisture that prevailed with us was largely responsible for this lack. It has also too rank a growth of leaves and a tendency to mat too closely to admit light and air sufficient for obtaining good berries. This season we have three rows of Senator planted side by side, each of which has received separate treatment in thinning the runners. The first row was thinned to about six inches apart, the second to four inches and the third received no thinning or cutting of runners. I have charged to the first and second ones each the time required for thinning and cutting runners. Next season each row will be credited with its yield of berries and the "balances" betwen labor and yield will be taken.

L. O. WILLIAMS,
Nebraska State Experiment Station.

The Wealthy Apple.

Perhaps no variety of apple has grown in popular favor within the last few years as much as has the Wealthy. Originating in Minnesota, it is hardy and productive. In Missouri and states south it is a summer variety, and a most excellent one. In Northern Missouri, where it has been more generally tested, it has become one of the most popular sorts ripening late in August or early in September. It has almost superseded the old Maiden Blush in popular favor, and is generally regarded as a much better variety of this season.

The Wealthy is an apple of good size, and when well ripened is of handsome color, red on yellow ground; quality is good with a sprightly flavor; very juicy, and one of the best cooking apples ever grown. The tree is a good grower, making a large tree; very productive, and one of the most regular bearers. The fruit is often picked before it ripens, and sold for cooking purposes, and the fruit left on the trees will grow to large size. The Wealthy apple is singularly smooth, and even in this present year of fungous troubles has been one of the smoothest in the orchard.

In Iowa and farther north the Wealthy is still more valuable, for there it is a winter apple. At the late Minnesota State Fair, Wealthy apples of the crop of 1903 were on exhibition, in perfect condition, without a blemish or sign of decay. Secretary Latham of the Minnesota State Horticultural Society says, concerning this exhibit:

"Previous attempts to hold the Wealthy apple in cold storage for long periods have not resulted as favorably, and the system of packing adopted must be considered as in large measure the cause of the present good condition of this lot, which has now been in storage ten months. Each apple was gathered with special care in handling to prevent bruising, and with equal care to secure those that were free from blemish or injury of any kind. Each apple was then wrapped first in a thin wax paper and again in a light tissue paper. They were packed closely together in boxes holding one bushel each with thick paper on the sides and top and bottom, and every care taken to prevent bruising. As soon after gathering as possible they were placed in cold storage in a temperature of about 33 degrees. The early storage of this fruit is of the greatest importance if success is to be secured in its keeping. Where allowed to mature after gathering, as it will do in a short time, experience shows that it is not possible to keep it very long."

New Pear From Texas.

Some time ago Mr. E. W. Kirkpatrick, McKinney, Tex., sent The Fruit-Grower some specimens of a new pear. It was rather small in size, shaped much like the Seckel, and of most delicious quality. It was larger than the Seckel, and its quality is in every way equal to this old standard of excellence. Concerning the pear and its history, Mr. Kirkpatrick writes:

"The specimen pears sent you in August were from a tree among some French seedlings in our orchard. This tree resembles the other seedlings in every way except in fruit. Its fruit is pronounced the finest of all pears. The tree stands upright, pyramidal, strong, hardy and prolific. This tree has borne two crops and the third crop is awaited with interest."

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SEARS, ROEBUCK & CO., CHICAGO.

DOUBLE ACTION Cutaway Harrow Used by CLARK

FOR LARGE HAY CROP

The ROGERS

in the earliest of all Dewberries; bears heavy crops of large, firm fruit, that ships well and sells at fancy prices. It's flavor is unsurpassed.

THE ROGERS has passed the experimental stage. It has been sold in nearly every state in the Union, and is fast becoming the most popular Dewberry now in cultivation. My prices are reasonable and I guarantee all my plants to be genuine. Write for descriptive circular and prices. JAS. W. HAMLETT, Alvin, Texas.

3,000,000 June Bud Peach Trees

Budded from prolific bearing trees. We are exclusive wholesale, and sell direct to planters at wholesale prices. You can save money by buying from us. Trees guaranteed true to name and free from all diseases. State Entomologist's certificate with each shipment. Write for prices.

FLETCHER & HARRISON, Nurserymen and Orchardists, Cleveland, Tenn.

AUSTIN'S DEWBERRY

J. W. Austin, Pilot Point, Tex.

Original propagator and introducer. Headquarters for plants. Descriptive circular and treatise on dewberry culture, for your address on a postal card, if you please.

Strawberry Plants

We have for Fall and Spring an extra fine lot of young, healthy plants, true to name; other plants and trees. Send for Free Catalogue.

John Lightfoot, Sherman Heights, Tenn.
R. F. D. No. 2.

Our Grape Vines

Promise an unusually fine growth. Send list of wants for **Special** fall prices. We can please you.

EUGENE WILLETT
North Collins New York

The Fruit-Grower is the best fruit journal I ever read.—C. F. Lender, Centralia, Ill.

We Make 2 3 5 & 8 Horse Power Engines.

Greatest Opportunity Ever Offered

For 85.00 We'll Sell You The Best Gasoline Engine ever made **The CHICAGO**

a complete engine in every detail, erected on wood base, self-contained, with Electric Spark Igniter. Water and Gasoline Tanks, Batteries and connections, all ready to run. Each engine thoroughly tested and **Guaranteed Absolutely Perfect,** and

Full 2 Horse Power with pulley for running all kinds of machinery by belt.

Pumping attachment as shown in cut $12.00 extra.

Simplest engine ever produced. Results of 14 years experience. **Fewer Parts, Highest Efficiency, Greatest Economy, Lowest Price. OTHER SIZES AT PROPORTIONATE PRICES.** We make 3, 5 and 8 Horse Power engines all on same lines.

Cut This Ad Out and send it to us and we will mail you catalogue free, it shows large cuts, gives full description and more information on gasoline engines than was ever given before. We have revolutionized the gasoline engine business. Catalog tells what we have learned in 14 years. **Chicago Gasoline Engine Co.** 57 North Jefferson St. **Chicago.**

Three Days Among Nurserymen.

A representative of The Fruit-Grower recently visited three of the largest nurseries in Missouri, and found conditions satisfactory for a good trade for the fall and spring of 1904-5.

The first stop was at the Lee's Summit Star Nurseries, M. Butterfield & Son, proprietors, Lee's Summit, Mo. Mr. J. S. Butterfield and his brother are in charge of this plant, and were enjoying a temporary lull after the finishing of the cultivation season and before the season for digging arrived. Mr. Butterfield reported that prospects for trade are good. This firm has an established trade, and sells usually in much the same territory, to old customers and to those whose orders are secured through the influence of old customers. The growing stock was found in good condition, especially apple trees. The accompanying illustration shows a block of very fine Grimes' Golden trees, but the illustration does not do justice to the stock, for the foliage is so dense and the trees so close that a good photograph was not secured. This firm has been making a specialty of bulbs for fall planting, and has built up a good trade in this line. Another work which this firm has done within the past few years has been to push the newer climbing roses—Crimson Rambler, Dorothy Perkins, etc.

GOOD BLOCK OF GRIMES GOLDEN APPLE TREES, LEE'S SUMMIT, STAR NURSERIES, LEE'S SUMMIT, MO.

This firm was established many years ago by M. Butterfield, who is now proprietor of the Farmington Nurseries, Farmington, Mo. Located in one of the best fruit sections of the country, the firm has always made a specialty of trees for commercial planters. The well-known orchards of J. A. Bayless are near this place, and varieties of apples can be observed in the orchard, so that the advice of this firm is worth considering when planting commercial orchards in the Middle West.

STORAGE HOUSE AND PORTION OF PACKING SHEDS, NEW HAVEN NURSERIES, NEW HAVEN, MO.

The next day we visited the New Haven Nurseries, J. Bagby & Sons, proprietors, New Haven, Mo. We had visited this place a number of times before, but there have been a number of improvements since our last visit. Among others, a new frost-proof storage house, which is shown in the accompanying illustration, with part of the packing sheds. The New Haven Nurseries dig their stock in fall, and store in frost-proof house during the winter, so that trees are not injured in the slightest in the winter, and stock can be shipped whenever desired by purchaser. The New Haven Nurseries have always made a specialty of catering to the needs of commercial planters, a specialty being made of the standard sorts of apple, peach, pear, cherry and plum trees. This does not mean that ornamentals are neglected, for it has been found that very fine roses can be grown on their soil, and a specialty will be made of these in the future. This nursery is well located on the main line of the Missouri Pacific Railway, about 65 miles west of St. Louis. All stock is grown on the Missouri River hills, the offices and packing sheds being over six hundred feet higher than the river level. All stock was in good condition, and supply large. Mr. Bagby reported the outlook for the coming season as being good. This firm has a large trade in Colorado, where the fruit crop was so heavy this season, and the inquiry for stock is already heavy. This firm has no agents. Sales are made direct to dealers or those who get up club orders, and also direct to planters. Mr. Bagby reported that Fruit-Grower readers have been good customers, and he expects to get a good trade from our readers again this season. While at Mr. Bagby's place he called our attention to some most excellent peaches in a test orchard. One called the Gold Medal is a very large yellow peach, freestone, of most excellent quality. Mr. Bagby also had a number of trees of Gold Dust, a yellow cling, which is one of the best cling varieties, and one which will ship to any distance.

Mr. Bagby reported that The Fruit-Grower is the best advertising medium his firm uses, and his advertisement will be found in our columns this season, as usual.

A week or so later a visit was paid to Stark Bros.' Nursery, at Louisiana. This firm has its usual large stock of all varieties. The plant at Louisiana was found in good condition, with preparations being made for a very heavy season's business. Asked as to how trade this season compares with that of former years, Mr. W. P. Stark said that the fall trade has been about the same as last year, but that the orders already booked for spring delivery are far ahead of any previous year. This heavy trade is in part ac-

Our New Descriptive Wholesale and Retail Price List is Now Ready

The New Haven Nurseries

Business established 1872. Capital invested, $60,000.
Acreage devoted to the business, 420.

Over 2,000,000 Trees

All budded or grafted, by actual count, now growing in our Nurseries.

For Commercial Orchardists—All the leading sorts of known value, true to name, of Apple, Peach, Pear, Plum, Cherry, etc.

For the General Public—Everything to be found in a first-class nursery establishment, at lowest possible prices.

We Do Not Sell Culls or Trash—Nothing but the best is good enough for our customers. A low price is no bargain, unless you get quality. Anybody can sell worthless goods cheap.

Our Guarantee of Quality—YOUR MONEY BACK if goods are unsatisfactory.

We Pay the Freight on all orders amounting to $10 or more, and guarantee arrival of stock in good condition. In this way you know just what the trees or plants will cost you at your station. Write today for Catalogue and Price List.

New Haven Nurseries

NEW HAVEN, MO.

Hon. R. Dalton, a commercial orchardist of Ralls Co., Mo., and formerly custom house collector, Port of St. Louis, writes under date Aug. 1st, 1904: "I have been buying and planting trees for nearly thirty years. In that time I have bought fruit trees from many Nurseries, but I can in all candor and truth say you are the only people from whom I have bought trees when the trees were **always true to name** and possessed all the qualities of first class stock. I am somewhat particular, but in all our dealings for over thirteen years there has never been a point of difference between us. You have a good name and deserve it, and it has been honestly won.'

FRUIT PACKAGES

THE PIERCE-WILLIAMS CO. TRADE THE PACKAGE SELLS THE FRUIT MARK ESTABLISHED 1882 JONESBORO, ARK.

WHEN in need of Fruit Packages of any kind, write us about it. We make a specialty of furnishing all kinds of Baskets, especially the Climax Basket for Peaches, Grapes, Pears, Apples, etc. Our Berry Boxes and Crates are made of the very best material and are smooth and clean. During the winter season we make especially attractive prices, and it will pay fruit farmers everywhere to send us a list of their wants for prices.

Remember that we now have a branch establishment at Jonesboro, Ark., and can fill orders from there or from South Haven, Mich.

Catalogue free on application to either factory. Send for it.

Pierce-Williams Company

SOUTH HAVEN, MICH. JONESBORO, ARK.

To the Wholesale Trade
For Season 1904-5, we offer
Apple Seedlings and Grafts
We make a specialty of this branch of the business and are exceptionally well equipped for handling it.
Write for Winter List Issued Dec. 1st.
Mount Arbor Nurseries
E. S. WELCH, Prop.
Growers and Propagators of a complete line of General Nursery Stock.
SHENANDOAH, IOWA

NURSERY STOCK
Our stock of plants and vines were never in better condition than at present time.
STRAWBERRIES—45 varieties.
RASPBERRIES — Cumberland, Munger, Kausas, Gregg, Cardinal, Miller, Red and Thwack.
BLACKBERRIES — Early Harvest and Snyder.
CURRANTS—Red Cross, North Star, Red Dutch and Cherry.
GOOSEBERRIES—Houghton.
50,000 GRAPES—One and two years—Standard varieties.
Get our prices before placing your order.
ELMHURST NURSERY
M. E. CHANDLER, Argentine, Kan.

LOGANBERRIES
Let every fruit-grower plant some Loganberries. They are proving more productive and profitable than Blackberries and ripen at a season before summer drouths. **Strong, well-rooted plants, $1.00 per dozen, postpaid.** Write for illustrated circular. Special prices in quantities.
J. B. Pilkington, Nurseryman
Portland, Oregon.

We sell Direct to Planters at Wholesale
GRAFTED **PECANS**
and **all** kinds of **nut trees.** New **Plum —MAYNARD**—the money-maker. "The best that ever happened." Send for description.
OAK LAWN NURSERY, HUNTSVILLE, ALA

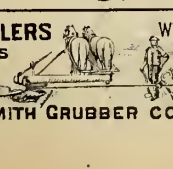
The Ellisville Nurseries
Offer a first-class assortment of nursery stock at reasonable prices. Specially low price on fine two and three-year-old Apple Trees. Can ship on short notice by the hundred, or in car lots. Certificate of inspection sent with every shipment.
A. WILMAS, Proprietor.
Ellisville, St. Louis Co., Missouri.

Nuts for Profit
158 pages, 60 illustrations on propagation, budding, grafting, cultivation, etc., etc., of Nuts best adapted to various sections. Price, 25 cts. **SEEDS.**
English Walnuts, Madeira, Japan Walnuts; Cordiformis and Sieboldiana Pecans, Paper Shell. By mail 25 cts. per doz.; $1.00 per 100.
JOHN R. PARRY, Riverton, N. J.
Dec. 1 to April 15, Orlando, Fla.

FINE DELAWARE-GROWN
Peach Trees
All of the best new and old varieties in assortment, for Fall 1904 planting. We sell directly to planters at very low prices.
The DELAWARE NURSERIES
D. S. COLLINS, Mgr., Milford, Del.

TREES Fruit & Ornamental, Shrubs, Roses, Bulbs and Plants.
Catalogue No. 1 free to purchasers of Fruit and Ornamental Trees. No. 3 free to buyers of Holland Bulbs and Greenhouse Plants. Try us; satisfaction guaranteed. Correspondence solicited. 51st year. 44 greenhouses. 1000 acres.
THE STORRS & HARRISON CO.
PAINESVILLE, OHIO.

WANTED—TWO MEN'S
names and addresses interested in Fruit-Growing. Our book, **Success and Failure in Orchard Growing, by a Practical Orchardist,** sent free to anyone sending same.
Messick T. F. Co., Quincy, Ill.

STUMP PULLERS SEVEN SIZES $17.50 UP

WE PAY THE FREIGHT
CATALOG FREE
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counted for by the fact that this firm has salesmen everywhere, and while a short fruit crop in one section may discourage planting, the trade in other sections where the crop is heavy will more than make up for any shortage.

Peach and apple trees were especially good, of the grades favored by commercial planters. Mr. Stark said that for several years the firm has been sending out, as premiums, some of the newer varieties of peaches, such as Alton, Arp Beauty, etc., and reports from these sorts are now coming in, showing the varieties to be very popular. This firm was also one of the first of the Northern nurseries to appreciate the Gonzales plum, which originated in Texas. The splendid showing made by this plum at the World's Fair and elsewhere this year has made a demand for it, for it is one of the very best of the late introductions.

Mr. Stark said their stock of grape vines at Portland, N. Y., is especially fine, this stock being grown in the best grape section of the country. At Farmington, Ark., apple and peach trees are very fine, apple trees especially having made a better growth that at Louisiana. Pear and cherry trees at Dansville, N. Y., and Huntsville, Ala., are also good, so that the firm is prepared to supply the heavy trade which is expected during the coming season.

A New Insecticide.

We have received a circular telling of a new preparation which will be placed on the market the coming season. It is called Con-Sol, and is intended for the destruction of the San Jose scale. Con-Sol is a concentrated solution of lime, salt and sulphur, prepared by a process discovered by a German chemist. It is said to be in every way as effective as the ordinary lime, salt and sulphur mixture, but is prepared ready to mix with water and use, without the labor of cooking. This new preparation can be used in any spray pump, and is easily applied. It has been well tested and has proven its value. Among those who have tested it satisfactorily is Mr. Charles H. Miller, of Gerardstown, W. Va., one of the largest orchardists in that state.

Con-Sol will certainly prove a valuable thing for fruit growers who want to spray for San Jose scale in small orchards, or on shrubbery, etc., in city yards. In fact, from past experience, it may become generally used by growers as a winter spray, to destroy the spores of fungi, since lime, salt and sulphur has proved of much value in this work.

The American Horticultural Distributing Company, Martinsburg, W. Va., manufacture this new preparation, and have an exhibit in the Horticultural building at the World's Fair, where samples of Con-Sol can be seen. Circulars decribing this new insecticide will be sent free to those who address the manufacturers. Simply ask for the circular describing Con-Sol, as mentioned in The Western Fruit-Grower for October, 1904.

Apple Day at the Fair.

Apple Day at the World's Fair was a noteworthy event. Promptly at 9 o'clock a. m. on Tuesday, Oct. 4th, the free distribution of apples began at the Horticultural Building, where apples, red, white and yellow—Baldwins, Spys and Spitzenburgs, from New York and Canada, Yellow Bellflowers from California, Yellow Newtown Pippins from Oregon, Wolf River from Washington, Winesaps from Virginia, Wealthy from Wisconsin, Minnesota, Michigan and Iowa; Black Twigs from Texas, and Jonathans in inexhaustible quantities from practically all the central states, and many other varieties of luscious eating apples, vied with each other in tempting the appetite of the great throngs of people.

As was proper, Missouri being hostess, opened the ball with five hundred boxes of cold storage Jonathans. Beside Missouri, was Wisconsin, with a fine large consignment of luscious Wealthys on the east side of the northwest door. Three men were kept busy the entire day until the building was closed in the evening, knocking open boxes, at this staion, and shoveling apples out, while as many more young ladies were actively engaged in passing them out. On the opposite side of the same doorway, Tennessee, Arkansas, Oklahoma, Iowa, Kansas, Indian Territory, Michigan, Oregon, Connecticut and Virginia were all the while busy carrying out a similar program, while at the northeast doorway New York, Illinois, Canada, Minnesota, Colorado, California, Washington, Idaho and Texas did the honors after the most approved fasion.

Superintendent Goodman, of the Missouri exhibit, had provided a carload of Jonathans, especially for this occasion. Four hundred boxes of these were consumed by visitors, while ten boxes were sent as a gift to the Protestant Orphans Home of St. Louis; a quantity also to the federal troops, and had left a remainder, which was placed upon the tables of Missouri's exhibit. Counting one hundred and twenty apples to the box (which is about an average count), it will be seen that some fifty thousand persons partook of Missouri's hospitality alone. From these figures, and judging by the rapidity of distribution, it would seem to the Fruit-Grower representative, a conservative estimate to say that one hundred thousand people shared in the free distribution of apples on Apple Day in the Horticultural Building. Thus it will be noticed that the American Apple Grower's Congress, in co-operation with the department of horticulture of the Exposition, fully realized its highest expectations, in its plan for increasing the use of apples as a food, and to advertise the apple growing sections of America.

The varieties given away by the various states and territories, were as follows:

Arkansas—Winesap, Willow Twig, Kentucky Streak and Nick Jack.

California—Yellow Belleflower.

Colorado—White Winter Pearmian, Winesap, Wealthy, Gano, Jonathan, Belleflower, McIntosh, Ben Davis, Richard and Flora Bell.

Connecticut—Winesap and Spitzenburg.

Canada—Baldwin, Fallawater, Golden Russett, Northern Spy, McIntosh, Roxbury Russett and Spitzenburg.

Illinois—Jonathan.

Idaho — Arkansas Black, Rome Beauty, Winesap, Black Twig, Gano and Ben Davis.

Iowa—Maiden's Blush, Wealthy and Fall Orange.

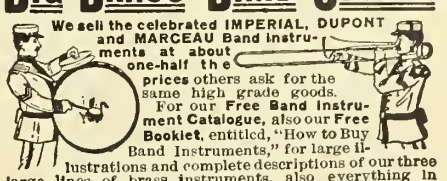
Indian Territory—Jonathan, Black Twig and Ben Davis.

Kansas—Winesap, Missouri Pippin, Rome Beauty, Black Twig, Gano, York Imperial and Ben Davis.

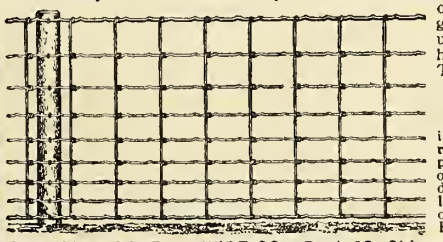
Michigan—Wealthy.

Minnesota—Wealthy.

(Continued on Page 19.)

BIG BRASS BAND OFFER.

We sell the celebrated IMPERIAL, DUPONT and MARCEAU Band Instruments at about one-half the prices others ask for the same high grade goods. For our **Free Band Instrument Catalogue,** also our **Free Booklet,** entitled, "How to Buy Band Instruments," for large illustrations and complete descriptions of our three large lines of brass instruments, also everything in Drums, Clarionets, Flutes, Saxophones, etc., etc., for the free catalogues, our guarantee and refund proposition, for the most liberal band instrument offer ever heard of, for the new method of selling instruments fully explained, for something new and immensely interesting to every bandman, cut this ad out and mail to us today.
SEARS, ROEBUCK & CO., CHICAGO, ILLINOIS.

ATTENTION, FRUIT GROWERS
How to Rid Your Orchard of San Jose Scale
PATENTED JULY 5, 1904
The result of a half million dollars in experimental work.
"CON SOL"
LIME, SULPHUR AND SALT.
Write for booklet. Valuable information on Orchard Spraying
Dilute one gallon of "CON SOL" with forty gallons of water, hot or cold; spray with any spray pump.
A PLEASURE TO ANSWER INQUIRIES
AMERICAN HORTICULTURE DISTRIBUTING CO.
MARTINSBURG, WEST VIRGINIA

Only a Minute and a Penny
It will only take a **minute** of your time and a **penny** of your money to get by return mail our free Fence Book, which tells how good fences are made, how they are put up, the size of mesh, style of fence, and height you should buy for all purposes. This book tells why the

American Fence
is the best fence manufactured, and gives the reasons. **American Fence** is made with more pounds of steel to the running rod than any other fence manufactured, giving it strength, durability and lasting qualities. We are the largest fence builders in the world, and sell only fences of responsibility. American Fence is handled by a dealer in every town.
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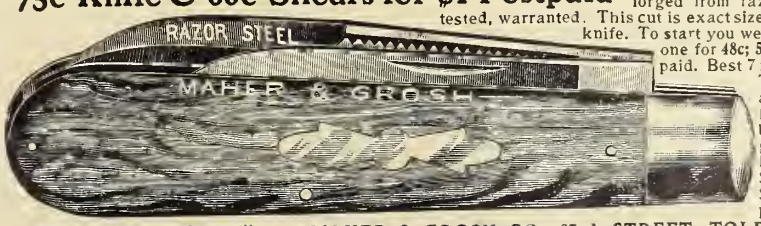
THE O K NURSERY O K Prices = O K Trees
Customers O K Pleased
We want more customers to please with our trees. Write today and learn how we will give you 3,000 Elberta Peach trees absolutely free for sending us names of fruit-growers.
ADDRESS, A. L. LUKE, WYNNEWOOD, INDIAN TERRITORY.

Why Not Shave Yourself? Do you know that the price of 10 shaves will put you in possession of a complete outfit that will last you a life time? To introduce our Presto Magnetic Razor to the shaving public we are offering an outfit consisting of our Presto Magnetic Razor (full hollow ground and electrically tempered). This secret process of tempering insures a uniformity of temper not possible to obtain in a razor tempered by fire heat; one Presto Shaving Strop, a double reversible strop, fitted with patent swivel, made of best quality black satin leather and canvas web; one astrachan trestle lather brush and a cake of pure shaving soap.
This outfit, if bought of a dealer, would cost you at least $3.00. When you order direct from us you save the enormous profits the various dealers reap.
You run no risk, as all goods are sold under our guarantee. If not exactly as represented, money refunded or goods replaced at your option. Send for our booklet, "Sidelights on Shaving." It will interest you, and it's free for the asking. Complete outfit prepaid $1.50.
MANGELS & WOODHULL, "Cutlers to the Public," 97 S. 12th St., Newark, N. J.

75c Knife & 60c Shears for $1 Postpaid Every M. & G. blade is hand-forged from razor steel, file tested, warranted. This cut is exact size of 75c strong knife. To start you we will send you one for 48c; 5 for $2, postpaid. Best 7 in. shears 60c. This Knife and shears $1. Pruning 75c; budding 35c; grafting 25c. Pruning Shears 75c. Send for 80 page free list and "How to Use a Razor."


MAHER & GROSH CO., 97 A STREET, TOLEDO, OHIO

THE FRUIT-GROWER
ST. JOSEPH MISSOURI

Address all communications and make Remittances Payable to "The Fruit-Grower Company," Seventh and Charles Streets, St. Joseph, Mo.

W. G. Campbell, Jr., General Manager James M. Irvine, Managing Editor

Advertising Rate—20c Agate Line, $2.80 per inch. Fourteen lines to the Inch
No advertisement in class generally termed "objectionable" received under any conditions. Editions mailed on 15th; Forms close on 10th; i. e., January forms close January 10th, etc.

40,000 a Month Guaranteed for the Season of 1905

Subscription—50c a year. Three years in advance, $1. Foreign Countries, $1

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In compiling a list of Forty Thousand subscribers it is an easy matter to make mistakes, but we guarantee fair treatment to everyone. If you find an error in your address tag, or do not receive paper promptly, write us and we will trace matter up at once.

Entered as Second-Class Matter in the Postoffice at Saint Joseph, Missouri

Volume 15 ST. JOSEPH, MO. OCTOBER 15, 1904. Number 10

The statistician of the American Apple Growers' Congress has estimated that the total apple crop for this country will amount to about the same as the crop of 1903. The foreign demand will be less than a year ago, on account of good crops in Europe. This being the case, prices are expected to be about the same as last year, according to good authorities. More caution has been exercised in buying this season than for a long time, and sales have been somewhat slow.

The situation of the apple market is far from satisfactory just at present. Few sales have been reported, and there is a feeling of distrust on the part of growers and buyers which has hindered trading. A telegram from Medina, N. Y., states that that section has been flooded with reports of a bumper apple crop, with correspondingly low prices; when traced down it is said that these reports come from one source, which is also busily engaged circulating reports to the effect that $1 per barrel is all that will be paid for good apples. This price is for the packed fruit, and growers say that when they pay 35 cents for barrels, 25 cents for picking and barreling, there will be little left for him. Accordingly few growers have sold, and are preparing to store their fruit. Growers claim that strictly No. 1 apples should be worth $2.50. The apples are said to be very smooth and sound. Throughout parts of the Middle West these same conditions rule. The crop of Wealthy apples in Northwest Missouri was generally good, considering the few trees planted, but the growers and buyers could not get together, and many Wealthy apples are now in storage, awaiting better prices. From reports received by The Fruit-Grower, we believe the growers underestimate the crop and buyers as a rule overestimate it. The prices asked by the New York growers—$2.50 to $3.00 per barrel—will hardly be realized. Apples will have to be shipped into the Middle West this winter, but it is safe to say that with storage charges, freight, etc., added to this purchase price, the consumption of apples will be greatly lessened, for the prices would be almost prohibitive. At the same time, buyers can hardly expect to get this fruit for $1 per barrel. Perhaps a medium between the two extremes would be about right. Apples are worth more in the Middle West, where any good ones are to be found, than in New York, for the reason that the Western markets will not be so well supplied with fruit, and freight charges will be much less then where the New York fruit has to be brought to Western markets.

Mr. Ben Newhall, of Chicago, one of the best-posted apple men in the country, claims that the New York crop is larger this year than ever before, not even excepting the bumper crop of 1896. He states that he believes there are more apples on the trees than there were that year, of good quality, and that more apples will go into barrels this season than at that time. Accordingly, he believes that prices for the fruit will rule low. The situation is very much mixed, and buyers are very slow in making offers for the fruit. However, this much may be said: The country is in much better condition to buy apples now than it was in 1896, and a mistake will be made if prices are to be placed on a level with that year. In 1896 prices of all kinds of produce had reached bottom, as had prices of every other commodity. But since that time values have been much higher, and apples should be included in the list. The export demand will be less than it was a year ago, but the American markets ought to be in good shape to use a lot of good apples.

Want to pack your apples in boxes? Then you will interested in the article in this issue by Mr. Dickerson. The work is not so easy as it has seemed to many persons, and is really quite a complicated affair. The fruit must be good—that is generally admitted to be the first essential for boxed apples. Then there must be a quantity of fruit of uniform size, so that the fruit will "fit" into the packages. And then the work must be carefully done. The article by Mr. Dickerson, with the illustrations, is one of the best we have seen on this subject, and will doubtless help many persons to decide whether they really want to pack their apples in boxes—and it will help those who may decide in favor if this package.

Some farmers who live comparatively close to St. Louis contend that they "cannot afford to go to the World's Fair." Can't afford to go? Why, few farmers can afford to stay away! Teachers, electricians, machinists—persons in almost every walk of life—go to the fair to see what is new in their respective lines, to study the development of the subjects in which they are interested. They go as a matter of business, for the benefit they will receive. And yet no department at the fair has so much of educational value as can be found in the Agricultural and Horticultural buildings, if farmers will go there with a desire to learn all they can. Disabuse your mind of the idea that you cannot afford to go to the fair. Make a sacrifice, if necessary, but by all means try to go. Now is a good time, and any intelligent farmer can learn enough in the Agricultural building alone to repay him for all it costs to make the trip. Better crops can be produced, and it will be money in one's pocket to visit the fair and study the exhibits in this one building, even if there were no others.

A new feature of the political campaign of 1904 is the use of advertising space in farm papers, to set forth the claims of the respective political parties. In a number of papers lately have appeared full-page advertisements, paid for by Republican campaign managers, telling what a good thing for the farmers it will be to reelect President Roosevelt. Doubtless the Democratic advertisements will appear later. And why not? The farmer is too intelligent to be caught by many of the cheap arguments of the average political speaker. He appreciates sound logic and intelligent reasoning, and it is a hopeful sign that political managers have recognized this, and are appealing to him through the medium of arguments, rather than to try to appeal to his prejudices. Of course, there are those who will say that newspapers of one political belief have no right to accept the advertisements of another political party, and that farm papers, which are supposed to be neutral, should not accept the advertisements of either party. But the fact remains that where the fact is plain that the matter is an advertisement, it is all right and perfectly proper to publish them. The time is past when any party can hope to succeed by keeping its members in ignorance of the principles of another party, and this matter is legitimate advertising for any paper. The Country Gentleman, which publishes the advertisement of the Republican party, says: "No reader possessed of ordinary intelligence will suppose, we hope, that the advertisement has any relation whatever to the political opinions of the editors of the paper. The same space is open to the managers of any political party who will pay the regular price."

In our last issue The Fruit-Grower suggested to the various experiment stations the matter of sending good men out next spring to see how various farmers spray their fruit trees, and then report how the work was done, and point out the causes of failure—for there are unquestionably many failures in spraying. It seems that the Missouri station, at least, has been considering this very matter, as is indicated by a letter from Mr. Favor, who has had charge of the spraying experiments at that station. It should be said here that in order to undertake this work the stations will need more money, to employ more men, for the work now is as great as the force employed can look after. But this important work is worthy of being better supported, and The Fruit-Grower hopes that some of the stations at least will be enabled to undertake this work. Horticultural societies, too, can afford to undertake this work. Indeed, the Illinois society, for one, has already made a start in this direction. Field meetings should be held, where the work of spraying is actually demonstrated. Instead of discussing the subject inside a building, get out in the orchard and show how the work should be done. In this respect we are all anxious to "be shown." In regard to this field work, and the need of it, Mr. Favor, of the Missouri station, writes: "The World's Fair number of The Fruit-Grower just at hand. It strikes me as being the best issue I have yet seen; full of short, readable articles, rich in information. In the editorial columns there is made a suggestion which I am glad to see, and which I have been planning to try to carry out in a small way, myself, next season. That is for the experiment stations to investigate the methods of spraying used by various fruit-growers, and actually see the work done. This past season I had a little experience along that line, and from the way the work was done and the results achieved, I came to the conclusion that not all of the best fruit-growers know any too much about the how and why of spraying. The operator may think he has done his work when he squirts a little blue mud on a few leaves of the trees; he may be a good horticulturist otherwise, but he fails to realize that spraying is a chemical and physiological operation, rather than purely mechanical. I am very glad you made this suggestion, and hope that some of the people who know how to spray can follow your suggestion next season and do missionary work in this simple, yet difficult, operation."

In connection with the foregoing suggestion, there is another way in which this work of education may be extended. That is to follow the plan which has been tried in Missouri to some extent, of mounting a line of spray pumps of different patterns in a railway car, and taking this car throughout the state. Stops can be made at places where the coming of the car has been well advertised, and pumps taken into the orchard to demonstrate the actual work as it should be done. This plan has been tried in Missouri, on a limited scale, but the success of the first efforts warrants a continuation of the same. The Frisco and M., K. & T. railway companies have transported cars of this kind, with the accompanying lecturers and demonstrators, over their lines free of charge, and doubtless will do so again. But the Burlington, the Missouri Pacific, and every other line in the state—and in other states as well—can well afford to do the same thing. A fight must be made against insects and fungous diseases, and it must be made more effectively than it has been made by many persons in the past, and this plan will help to that end Better fruit crops mean larger freight shipments—and the railroads can well afford to help this work, from a selfish standpoint, if from no other. Now is the time to agitate for a campaign for better and more effective spraying. Too much labor and material has already been wasted because the work has not been properly done. The fault has not been that growers did not want to do the work right; but they simply did not know how. This field work will help to correct this fault, and in the shortest time.

Next January we shall issue our regular anniversary number, and want to make it better than the one of last season—better than any other paper, in fact. It has occurred to us that we ought to hear from many of our readers for that number, with short, crisp letters, to the point, which shall tell one thing which has been learned in fruit-growing from the past season. Have you had any lesson firmly impressed upon you by the past season? If you have, write a boiled-down statement for the anniversary number. As many as possible will be published. But remember this: In sending your report be sure that what you have learned this season is not something which will have to be unlearned next year. Report only what you believe are actually demonstrated facts. We call attention to this matter early, so you will have time to think it over.

The February (1905) number of The Fruit-Grower will be a special spraying number. A number of special articles will be published at that time, but we want to sugest a plan whereby our readers can help to make this number most effective. If you have any plans of spraying, either in making the mixtures, in the application of same, or in any way connected with the work, which will help to render the work more effective or saving of labor, will you not send us a report of the same? Recently a subscriber sent us a sketch showing us how he has mounted a dust sprayer to be used on step hillsides. We believe this same plan will work with a liquid spraying outfit on hillsides, also, and this will be published in the spraying number. So if any of our readers have any short cuts or methods which are time or labor savers or which render the work more effective, we want to hear from them. Let this special spraying number be one which shall have the support of all, and it will be much more helpful to all members of The Fruit-Grower family.

The Cry of the Dreamer.

I am tired of planning and toiling
In the crowded hives of men;
Heart-weary of building and spoiling,
And spoiling and building again.
And I long for the dear old river,
Where I dreamed my youth away;
For a dreamer lives forever
And a toiler dies in a day.

I am sick of the showy seeming
Of a life that is half a lie;
Of the faces lined with scheming
In the throng that hurries by.
From the sleepless thought's endeavor
I would go where the children play;
For a dreamer lives forever,
And a thinker dies in a day.

I can feel no pride, but pity
For the burdens the rich endure;
There is nothing sweet in the city
But the patient lives of the poor.
Oh, the little hands too skillful,
And the child-mind choked with weeds!
The daughter's heart, grown willful,
And the father's heart that bleeds!

No, no! from the street's rude bustle,
From trophies of mart and stage,
I would fly to the woods' low rustle
And the meadow's kindly page.
Let me dream as of old by the river,
And be loved for the dream alway;
For a dreamer lives forever,
And a toiler dies in a day.

—John Boyle O'Reilly.

I have sold the farm and retired from field work, but would be lonesome without The Fruit-Grower.—J. Telford, McKinville, Tenn.

Notes by the Way

The morning's mail of any firm which receives any considerable quantity of mail matter is a most interesting study. So many letters, from so many different persons, and each one in a different strain. They are a study, and full of interest.

Here is one from a woman who says her husband has died, and she has been left alone with several children. She has appreciated The Fruit-Grower as had her husband, but now she feels that she must economize, and reluctantly asks us to discontinue the paper, although she hardly knows how she will get along without it. We have had many letters such as this, full of human interest, with glimpses of the domestic tragedies which come to every family. This good woman was assured that The Fruit-Grower would be sent her, with our compliments, as long as desired—and we were only too glad to do this.

Here is a letter from a man who is discouraged, and will quit trying to grow any fruit. The seasons have changed, he says, and there is no need of attempting to grow fruit any more. And so he wants the paper stopped. But here is another man, whose subscription is paid in advance, but who feels so good he sends $1 for three years' subscription. "Eight acres of peaches have made me more money than eighty acres of wheat," he says, "and I want to give The Fruit-Grower credit for part of my success." This is a Missouri man, too.

Here are two letters vastly different: One man says to stop The Fruit-Grower, "for I expect to die before spring." Another says to extend his time for three years; "I am old," he says, "and cannot live long, but I want my family to read The Fruit-Grower after I am gone."

Truly, there are many kinds of people in this world. And, really, we suspect that the first man will die soon, but that the other, with his hopefulness and his good nature, will live to renew his subscription again. Don't you think this is likely, from the letters they write?

Here is a postal card which makes us feel good: "That September Fruit-Grower looks mighty good and mighty prosperous. You may well be proud of it."

That is from F. D. Coburn, secretary of the Kansas State Board of Agriculture, and one of the best qualified men in this country. And he knows what a good paper ought to be, too, for he sees them all. Several years ago, when we met Mr. Coburn for the first time, he took occasion to say that The Fruit-Grower came nearer meeting his ideal than any paper of the kind he had seen. And he evidently has not changed his opinion since.

Here is still another letter which makes us feel good, for we know it is sincere. It is from B. F. Smith, Lawrence, Kan., who writes us encouraging letters every now and then. He had just received a copy of our little booklet, "The Evolution of an Idea," telling how The Fruit-Grower had been built up by hard work and personal sacrifice. Mr. Smith says:

"Your 'Evolution of an Idea' received, and I have looked it over and studied it somewhat. I have been a witness to the growth of the idea from its inception to this time. The Fruit-Grower started off quietly, without any noise or show, or even a promise of anything unusual. If I must tell the truth I thought it would run a little while and then fall, as many others that started with a great flourish of trumpets. Beginning with the reading of Orange Judd's American Agriculturist in 1859, and the following several years, I have observed its growth and the growth of many other publications along the line of fruit culture. But never have I seen a paper that has made the rapid strides that The Fruit-Grower has. While others have quit the field, The Fruit-Grower idea has widened out until it covers much, if not all, the fruit territory of our country. I see the American push and zeal behind it. It is sure to succeed, because it has honest integrity behind it. Let the idea continue evolving, and thus lead fruit men to victory over climatic conditions and insect foes."

That sounds mighty from a man who has been helping us all these years, when we needed help "mighty bad."

Do all our readers approve of our course? No, not quite all. Some persons do not agree with us, of course. Recently we had four subscribers stop their papers because they did not indorse certain policies of The Fruit-Grower. This made us feel bad—would make anyone feel bad—but we could only do what our own best judgment tells us is best. That is what we want everyone else to do—and that is what we adopt for our own business policy.

To help cheer us up we received still another letter by the same mail which brought us one of these disapproval letters.—It contained $1 bill to pay for renewal and four new subscriptions, so that our loss on the other side has been made good. Accompanying this remittance was this note:

"May the further evolution of your 'ideas' be as satisfactory as those already realized. Success to The Fruit-Grower and the nervy quartette who have made it."

That is from H. B. McAfee, of Park College, Parkville, Mo. Now, we have reason to believe that Mr. McAfee has not always agreed with the The Fruit-Grower's policy. But he knows we all differ in other things, so he simply approves The Fruit-Grower's general policy, and all these other differences will adjust themselves.

There were lots of other letters in this mail. They are just as interesting, and just as different, as these we have quoted. Tomorrow's mail will bring its new problems, its new glimpses of the lives and characters of the writers. And when night comes, even without any physical labor, one will feel that he has done a hard day's work. The publisher of a paper keeps in close touch with its readers and their problems through the letters which are written. And rest assured that in deciding any question of business policy he knows better than anyone else the sentiment of the subscribers of the paper on any given proposition. He comes into closer relation with them, as a whole, than anyone else can come.

J. M. I.

The Family Circle

The fall and winter months are the time for horticultural meetings, and most of them are held during that time. This season is also the best time of year to get subscribers for The Fruit-Grower, either at the horticultural meetings, or elsewhere. We hope every member of The Family will remember this and try to get a club of new subscribers. Remember that our proposition of five new names—or four new names and one renewal—for $1 still holds good. Many of our friends are renewing their subscriptions in this way, sending names of four new subscribers with their renewal.

And why not all do this? You know The Fruit-Grower is worth much more than the subscription price. And we want to tell you about some of the good things planned for the coming season:

The January number will be our regular anniversary number, and we want to make it even better than last January. Will it be as large? We hope it will be larger—last year it was 52 pages, you know. And the paper will contain good live matter, too.

Lots of advertisements in it?

Why, of course. Advertisements, and lots of them, are necessary for us to make any money. And our advertisements are interesting reading, too. We will not apologize for them, unless some irresponsible firm should get in—and then we would have to apologize for the oversight, for we do not accept any such advertisements if we know it. Read our advertisements—there is much to be learned there. And when you answer an advertisement in The Fruit-Grower, please say you saw the advertisement in this paper. Helps us, and will help you.

Speaking of advertisements, have you noticed that there is always a balance between the quantity of advertising and the quantity of reading matter in The Fruit-Grower? Well, there is: The more advertising matter, the more reading.

Take the September number, for instance: There was about the same quantity of reading matter there was of advertising. It will be so all the time.

Coming back to those special numbers to be issued next winter: February will be a "Spraying" number, full of articles on the subject. And we are trying to get articles, too, which will help to make the work of spraying more effective.

March will be a "Gardening" number. We want to make this a fine one, and with the assistance and co-operation of all the members of The Family, we can do it. Send us notes from your gardening experience.

April will be a "Small Fruits" number. It will be as good as we can make it—with the help of some of the best growers everywhere.

Each of these special numbers will have a special title page design, printed in colors—just like the best magazines. These cover pages are being prepared now, and they are going to be fine—in keeping with the contents of the respective papers.

Now, don't get the idea that because the February number will be specially devoted to spraying, and the March number to gardening, etc., that no other matter will be printed. There will be lots of matter on other subjects—only we will devote special attention to the subjects named.

These special numbers will be better, we believe, than any we have yet printed—that means they will be the handsomest and best farm papers ever sent out. The demand for them will be heavy, and the supply will run short, just as it has always done heretofore. It behooves our readers, therefore, to send in their clubs as rapidly as possible, so that the new names can be placed properly on our list before the time for these special numbers—then there will be no doubt about their getting these papers which will be so much in demand.

Nearly every day we get letters from members of The Family which say that in getting a list of new subscribers they have told the persons who subscribe that if "they do not get their money's worth, their money will be refunded."

The Fruit-Grower wants to stand by all such offers. Every member of The Family is authorized to make this agreement with any subscriber, and if there is a call for a refunding of the money, we will se that it is forthcoming.

Will not every member of The Family now get to work, trying to get these new names? We believe The Fruit-Grower is worth the subscription price, and more, and this proposition is safe.

Can we count on your support in this? We hope so, and would suggest that now is the best time in the world to begin the work of hustling for new subscribers.

Remember: Five for a dollar—and your own renewal, if it is sent in alone, will cost 50 cents. Get up a club and save money.

Now, to put the members of The Family on their mettle: With this number we begin the publication of an Eastern edition. As stated before, some of the most enthusiastic friends we have are in the Eastern states, and they will work all the harder to build up our circulation, now that an Eastern edition has been provided for them. Our hustler in charge of Eastern circulation wrote us that he was glad we recently published our circulation by states. It shows just how many members of The Family there are in each state. And he wants this statement published occasionally, just to show who is at work to help get new subscribers.

This Pennsylvania man says he will see to it that the Keystone state, especially, and all Eastern states in general, make as good or better showing, comparatively, than other states.

There, you are now. There is the challenge. Our Eastern edition is new, with only about 5,000 members of The Family in all that section. And yet this hustler challenges all the older states. What will our old friends elsewhere say to this? It's an interesting contest. And may everyone do his best.

BROTHER JONATHAN.

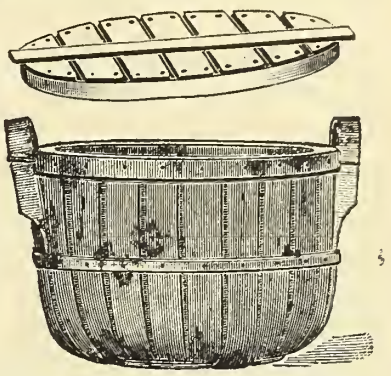
Your New Stove

Don't buy a stove or heater until you have seen our new 48-page Stove Catalogue—a fine book with large, clear illustrations, detailed, reliable descriptions of the lowest prices obtainable anywhere for honestly built stoves, ranges and heaters.

Our Windsor and Lakeside stoves are the products of our own factories and represent the best types of stove construction.

Write at once for our stove catalogue. Send also address of any neighbor who you think will like to receive our money saving stove proposition. They will welcome the attractive catalogue we intend to send them. Our stove catalogue is entirely free. Merely send a postal. Cold weather is coming; better write at once.

Montgomery Ward & Co.
Michigan Ave., Madison and Washington Sts.
Chicago



Barrels are High and Scarce

WHY NOT USE

Bushel Baskets

with slat covers, for shipping Apples? **They are Cheap.** Write the

BURLINGTON BASKET CO.
BURLINGTON, IOWA.

The Right Place to Buy Trees

is where you can get the best trees at right prices. This you can do by buying from us. Our trees are propagated direct from choice bearing, re-selectd trees, they will produce fruit of highest color, richest flavor, most uniform size and the trees are hardy, early and prolific bearers. We guarantee our trees and prices to please. If you want an apple that will keep until the new crop comes in, plant the Missing Link apple.

Missing Link Apple Co.
Nurserymen, CLAYTON, ILLINOIS.

ALFALFA SEED

Should be sown on every farm. We pay particular attention to furnishing **Good Seed.** Ask for our **Alfalfa Booklet.** It's **FREE.**

Ross Brothers Seed House
WICHITA, KAN.

TREE PAINT For Borers, Rabbits, Insects, etc. Best, cheapest tree protector out. Is a purely vegetable and mineral compound. 50,000 trees protected last year; get special offer. Agents wanted.
WM. ROBINSON Bowling Green, Mo.

Peonies

The best collection of Seedling Peonies in the United States. For particulars see Free Catalogue.

H. A. TERRY, Crescent, Ia.

NURSERYMEN'S
Fruit and Ornamental PLATES

An experience of over 30 years and our unequaled facilities have made our plates leaders. They are used by the leading nurserymen and agents in the United States and Canada. A trial order will convince you of their superiority. Send for catalogue and prices.

M. Brunswick & Co.
ROCHESTER, NEW YORK

TREES! TREES!

400,000 Apple, 300,000 Peach, 50,000 Pear, 40,000 Sour Cherry, 40,000 Japan Plum. Best packing, best grading, best prices, best trees; best place to buy orchards. Jobbers supplied. No agents. Firm not impersonal. Our Free Catalogue is meaty.
WOODVIEW NURSERIES B 4, MT. HOLLY SPRINGS, PA.

CHERRY TREES

If you are going to plant a Cherry orchard this year let us furnish you with our One-Year Trees. They are low-headed, well-rooted, stocky trees—just what you want. Write us for an illustrated circular telling all about them. We also have a general line of nursery stock. We can save you money.

H. M. Simpson & Sons
1851. Vincennes, Indiana. 1904.

WARNOCK'S TREE PAINT
Patented September 2nd, 1904.

If you want to know all about this Paint which challenges all other Tree Paints to a three years' test on one application, said test to be conducted by the U. S. government, write the uudersigned for circulars.

It has not failed to the extent of one tree in the last four years. It will not fail you. It has pleased all who have used it. It will please you. It will protect your trees and promote their growth.

Agents wanted. They can do a large business and no money invested.
R. WARNOCK & CO., Independence, Mo.

Fruit Trees

A large assortment of the finest quality of Fruit, Shade and Ornamental Trees, at very Low Prices. We make a Specialty of dealing direct with the farmers. Write for Price List.
CALL'S NURSERIES, PERRY, OHIO.

Orchard Stock

We still have a little stock for sale at ($1.00) one dollar per share, and still want one or two good agents. Dividend in May. Write today.
S. H. Noel, 38 McManus Bld., Davenport, Ia.
Western, Illinois Fruit & Orchard Co.

Trees Trees Trees

If you want Fruit or Ornamental Trees, Plants and Vines, get our price list and give us your order now. Our stock is as good as the best and cheap as the cheapest. Satisfaction guaranteed. Certificate of inspection with each shipment. Remember we are growers.
The Roeder Nursery, Osceola, Mo.

Choice One and Two-Year
Apple Trees
at right prices. A general assortment for fall.
WESTERN NURSERIES
GREENWOOD, MO.

Peach Trees True to Name

I have a few thousand acres which my neighbors and myself wish to set. I budded them myself from the best bearing trees in the famous Georgia peach belt. They are extra fine June buds, and will sell at a bargain. Varieties are Elberta, Belle of Georgia, Carman and Tillottson—the best shippers. Address,
H. F. SHIGLEY,
R. F. D. No. 1. Fort Payne, Ala.

AGENTS WANTED to sell our Family Medicine Case, and Home Remedies. Every family needs it; quick sales; big profits; steady employment. Write at once for particulars to Dr. Wheat Medical Association, department 12, Joplin, Mo.

Questions and Answers

J. C. A., Chadwick, Mo.—(1) Please tell me how and when to look for borers. (2) Will they injure peach trees? (3) What is the best and most practical protection I can use against rabbits? (4) Is a wash of diluted lye soap good for the trees? If so, when should it be applied? (5) When shall will injure peach trees; the peach which were set out in March, 1904?

The most common borers are the peach-tree borer and the round-headed apple tree borer. Both are found near the surface of the ground, and most often the presence of the borers is indicated by a small pile of "filings" from the apple tree-borer and the exudation of a gummy substance from the peach-tree borer. Trees should be examined carefully to see if any borers are present. (2) Certainly borers will injure peach trees; the peach borer is the most common, perhaps, of any of the borers. (3) Opinions differ as to best protection. There are a number of ways to keep rabbits from injuring trees. Secretary Goodman of the Missouri Horticultural Society recommends the wooden veneer tree wrappers. Major Holsinger and others simply wrap the trunks of the young trees with ordinary newspaper, and both means are effective if the work is properly done. (4) Such a wash is recommended by many persons; it is generally used in the spring. (5) The time for spraying your trees depends on the things you want to spray for. If canker worms or some of the insects which attack the trees get in the orchard it will be necessary to spray the trees at once. It is sometimes necessary to spray young orchards to protect against fungous diseases also. It will of course not be necessary to spray for codling moth, or any of the insects which attack the fruit, until the trees reach bearing age. The best thing to do is to watch the trees, and then not spray until you can tell what you want to spray for. And this, of course, will depend on circumstances.

M. K. T., Muskogee, Ind. Ter.—(1) What kind of apples is Collins' Red? (2) Please name some two or three good, reliable works on culture of small fruits, prices of same, and where I can obtain them? (3) Where can I get "Success with Small Fruits" by Roe, and price of same?

(1) Collins is a red winter apple, originating in Northwestern Arkansas; we are not well enough acquainted with it to give description, but the Arkansas Experiment Station, Fayetteville, Ark., has published a bulletin in which this variety is described. (2) The Small Fruit Culturist treats of small fruits in general; price, $1.00. "Bush Fruits" treats of the bush fruits; price, $1.50. The Fruit-Grower can furnish these books, postpaid, for prices named. Shortly we will have a new booklet on "Strawberries," which will sell for 25 cents. (3) Any bookseller can get the book named for you, but we do not know the publishers.

W. M., Darlington, Mo.—I would like to have some information concerning the Evergreen blackberry and raspberry. They are said to grow like a grape vine, with no briars, and require pruning same as a grape? What about them?

An evergreen blackberry is reported from the Pacific coast country, but we have never seen such claims as that mentioned. We do not know that the Pacific coast berry has ever been tried in this section, and the letter from the correspondent reads more like claims which have been made by some tree agent. Better invest very carefully in novelties of this kind.

J. L., St. Charles, Mo.—(1) Please advise me what to spray my Bismark apple trees with to kill the little green lice which infest them. Leaves are curled up and tree makes a slow growth. (2) I have some wild plum trees that are simply loaded with fruit every year, but all the plums drop off by the time they get as large as peas. What can I do to prevent the fruit from falling? (3) How does Conover's Colossal asparagus compare with Palmetto or Columbian or any other kind under the same care? I have planted half an acre and want to plant another half acre next spring of the first named, unless there is a better kind. I have about 5,000 nice one-year plants; would you advise me to transplant them at one year old and grow potatoes between the rows the first year, or would it be better to let them stand another year? I am sorry I did not know of The Fruit-Grower years ago. The two copies I have read are worth more to me than five years' subscription amounts to. Anyone with a piece of land is in the dark if he has not yet subscribed for The Fruit-Grower.

(1) Spray with kerosene emulsion for the lice. (2) The plums may have been attacked by curculio, but it is hardly likely the entire crop would have been attacked at once. Look at some of the fallen fruit and see if a crescent-shaped cut has been made in the fruit. Maybe the blossoms are not properly fertilized, but in that case the plums would not have formed, but blossoms drop early. These two causes are common in preventing crops of plums from maturing. (3) Conover's Colossal is a good veriety of asparagus, but little different from the Palmetto. Indeed, one of the best growers in this vicinity says that there is little difference which of these varieties are planted, much more depending on the care the plants receive. If plants are thrifty and good-sized, they will perhaps be better transplanted at one year, provided they are given good care in the new location. If ground is not so this can be given, and they can be given good cultivation where they now stand, let them remain another year.

D. M., Harris, Colo.—I would like to know what has caused the leaves on three of my one-year Morello cherry trees to turn black suddenly; leaves drop off the instant you touch them. I noticed the trees a few days after a rain. Will they die from the effects of this?

It is hard to say what caused the trouble, not knowing the conditions. In this section we would say it had been caused by excessive wet weather, which has played havoc with the cherry trees. Have you looked for any insect injury? If it was caused by wet weather, the injury will not be serious, with favorable season next year.

E. H., Carrollton, Mo.—Can you tell me what to mix in soft soap to keep mice from eating it. I always wash my apple trees with soft soap, to keep borers out, but we have so many of these short-tailed mice this year that they follow me and peel the trees to get the soap. I don't like to use lime, for lime nullifies the effect of the soap and makes it worthless as a preventive of borers.

If the mice eat the soap, the problem is easy: Simply put Paris green in the soap with which the trees are washed, and thus poison the pests.

J. M. W., Belfield, Va.—Can you explain why my peaches rot on the tree before they get ripe? This happened to me last year and again this season, on same trees, which are thrifty. Previous to last year the fruit ripened all right.

There has been much complaint from peaches rotting this season. It was caused by excessive wet weather, the rot being a fungus which flourishes in moist weather. Spraying with Bordeaux mixture before growth starts in spring, and later with a dilute Bordeaux, is the preventive. It has been found, too, that where trees are sprayed with lime, salt and sulphur mixture for San Jose scale, this fungus is held in check also. Destroy all mummied peaches left on trees and on the ground, as a sanitary measure.

C. K., Cowgill, Mo.—I would like to know of some practical way of keeping rabbits away from nursery stock in winter. Can they be sprayed with some solution that will stay on all winter? If so, please give me the formula in your paper.

A nurseryman recently told us he kept some greyhounds to keep rabbits away. We know of no spray which could be supplied which would serve your purpose. Mr. Yaggy, a large orchardist of Hutchinson, Kan., last winter used poisoned apples in his orchard; simply used a little strychnine in a piece of apple, and this did the business. Judge Wellhouse, of Kansas, now also poisons these pests, and this method will work all right

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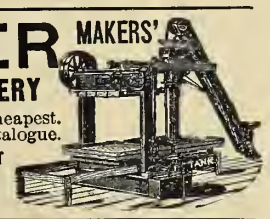

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in the nursery. Mr. Walter Wellhouse, in charge of the Wellhouse orchards, uses the following method: Make a poisonous solution of one part sulphate of strychnine, one-third of one part borax, one part of white syrup, ten parts water. This is put into a roomy bottle and well shaken. Now cut fresh twigs from apple trees (water sprouts are excellent), have a small brush, dip it into the liquid in the bottle and brush lightly over the twigs, especially the terminal buds. The great value of this over poisoned grain is that it will kill rabbits and mice, and will not injure the birds or chickens, while poisoned grain will kill all. Scatter the poisoned twigs in runways and places infested with mice or rabbits and the results will be satisfactory. Mr. Wellhouse found sixty-eight rabbits the first morning—seven in one row and three under one tree. Dogs which eat the rabbits will not be affected by the poison, according to Mr. Wellhouse.

J. H. F., Cherry Valley, Ark.—When should apple and pear seeds be planted, to furnish stocks for grafting?

Seeds are collected this fall, and stratified in moist sand or handled in some other way to keep moist until next spring; they should not be allowed to dry out. Plant next spring.

W. Y. S., Franklin, Ind.—I know it would be of interest to me and I believe it would to many of your readers, to have you give the best formulas for preparing lime for the dust spray. I think in the fall is the best time to prepare stock for early spring work. I have used the dust for three years, and find it fine for the supression of insects, and I fancy it is just as good for fungous troubles.

The preparation of this lime is a hard matter, and it is undecided as to which method is best; several plans are recommended. The Missouri Experiment Station has published a bulletin on the subject, which is perhaps as good information as can be obtained, unless the manufacturers of sprayers have information which has not been given out. It is a question if lime dust prepared in autumn will be as effective next spring, unless the dust can be kept from the air, to prevent air-slaking. Send for the bulletin mentioned; this matter was published in The Fruit-Grower for March, 1904.

F. F. N., DeQueen, Ark.—I have a good plum which I wish to propagate. What kind of stock is best to bud on?

Answer by Dr. Whitten: The Myrobolan or Marianna plum may be used as a stock upon which to bud. The Marianna is becoming a very popular stock in this country, largely because of the fact that it may be very readily grown from cuttings. Either of these stocks may be secured from leading nurserymen, or if the correspondent has access to the Marianna trees, he can easily take cuttings of the new wood and grow and bud them during the coming summer. In some sections our native plums are used as stocks. These are frequently grown by planting seeds in the nursery rows and budding when they are of the right size. Their great disadvantage is that they are likely to sprout badly at the root. The Marianna is much less subject to this unfortunate habit.

N. W. R., Nelson, Mo.—I have seen mention of a new Bordeaux mixture in which common washing soda is used insead of sulphate of copper. Can you tell me anything about this, and if it will be as effective as the old formula? How long after mixing will it stand without losing any of its effectiveness?

Answer by Dr. Whitten: In our experience on the Experiment Station grounds we have found no more effectual fungicide than the Bordeaux mixture, containing copper sulphate and lime. I do not think it would be safe to depend upon washing soda to take the place of sulphate of copper in Bordeaux mixture. The sooner the Bordeaux mixture is applied after it is mixed as a liquid the better.

A. W. B., Mount Morris, Ill.—I would like to ask through your columns how to treat my plum trees. I have about two hundred, Wyant, Wolf, Rollingstone, all about four years old, just coming into bearing. This year they have made such wonderful growth that I am at a loss how to treat them. I am afraid if I let them stand as they are, that the ice and snow during the coming winter will break them down. Will it do for me to cut them back quite severely before winter sets in? If so, when is the best time?

Answer by Dr. Whitten: The plum trees referred to may be pruned back judiciously during the coming winter in view of the exceedingly heavy growth which they have made. It must be borne in mind, however, that cutting them back in winter will tend to increase the abundance of wood growth next year. I would advise that the trees be cut back not too severely then and that the pruning be made something of a thinning process as well as shaping in long straggling ends. The limbs should not be thinned sufficiently to let in too much sunlight nor should they be cut back enough to result in the production of too much wood growth next year. If properly shaped the trees are not likely to break down on account of the immense wood growth this year, for the crop next year will be borne more on short spurs attached to the old growth than to the long whips of new growth, so the tree will be very likely to support its fruit next year.

J. M. W., Kenton, Tenn.—I wish to plant plums for market. Please name me six native varieties, early, and six European varieties, early. Also where can I get a book or pamphlet with the meaning of all the phrases or terms used in describing fruit? And at what price?

Answer by Prof. Chas. A. Keffer, Tennessee Experiment Station: I would consider among the best of the native plums the Wild Goose and Miner. These are the most largely cultivated of the natives that are especially adapted to this latitude. A very large list of native plums has been developed in the Northwest, but so far as I know, these have not been tested as far south as Tennessee and I rather doubt their adaptability for this section. Among the Europeans, the Bavay, Green Gage, Bradshaw, Lombard, Jefferson, Yellow Egg and Shropshire Damson would be a useful list. Barry's Fruit Garden, issued by the Orange Judd Co., New York, N. Y., gives the information regarding terms used in describing fruit and is in general a very good horticultural manual, though by many considered a little out of date. I think the price is $1.00.

(Another good book is The American Fruit Culturist, which The Fruit-Grower will furnish postpaid for $2.80. We can also furnish The Fruit Garden.—Editor.)

G. M. K., Bryson, Texas.—What are the best kinds of peaches to plant in Texas for evaporation, varieties ripening at different times? (2) What are the best varieties of apricots, and their season of ripening? I am going to set twelve acres in fruit on mountain land which never fails to raise peaches every season.

Answer by E. W. Kirkpatrick, McKinney, Tenn.—Good yellow freestone peaches are preferred, such as Elberta, early and late; Crawford, early and late; Salway and Pond's Late. In apricots, Early Golden, Early Cluster and Moorpark are among the best.

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Fishing.

The past six weeks were spent in Northwest Minnesota fishing. I was in seclusion, or least hid from the world. Three miles east of Alexandria, Minn., is "Fish Lake," in it an island on which are cottages. It is an ideal place for seclusion, rest and enjoyment. The lake comprises some 600 acres. The island of four and one-half acres stands out of the water some twenty-five feet. The water in this lake is in some places forty feet deep—clear and cold. Of fish there is an abundance—black bass, crappie, sun perch, pike, pickerel, muskalong, catfish and dogfish. These are the game fish of which we caught many. There were twenty-three persons on the island and all seemed to enjoy the outing.

We had leased this island last season. Liking it, we purchased the whole island, with boats and all. We now have our own fishing plant and hope to enjoy the pleasures of fishing while we have strength and health.

Fishing has become a fad of late years. Thus so great is the craze that 2,000 people visited Alexandria last year to engage in the sport.

Fully one-third of Douglas County, Minn., is under water. It is near the headwaters of the Mississippi and the lakes are joined together; it is possible to float to Itasca on the Mississipi.

Colonies from many of the cities are located on the lakes. The Missouri colony is composed of some forty families from Kansas City and is upon Lake Miltona, which is three by seven miles in extent. Many neat cottages have been built, and club houses, bowling alleys and places of amusement are provided. They have boats of various kinds, steam, gas and electric.. Their opportunities for bathing are unsurpassed; the water is always clear as crystal. There are many such companies. It is an established rule among fishermen to keep only as many fish as they require, keeping tab on their individual catches, marking the discarded fish small plates bearing the names or numbers of those by who discarded. When these are retaken they are reported. This often happens. Having lost a line myself, the next day one of our people caught his fishship, relieving it of its useless incumbrance.

Missouri Valley Meeting.

September 17—Meeting today at Marshall Chandler's, near Argentine, was an immense success. The attendance was quite large. There was a fine show of fruit, especially of peaches, pears and flowers. The usual picnic dinner was enjoyed by all. The meeting was presided over by George W. Holsinger. Mrs. Harriet Chandler, our genial secretary, read the minutes of previous meeting.

H. B. McAfee read an excellent paper on "Vegetables." This paper was discussed at length, taking a wide range. The essayist held that certain crops were detrimental to orchard growing, citing that raspberries and black berries should not be planted in the orchard; that where tomatoes were grown, on their farm, there was a better tree growth.

Mr. Cellar thought blackberries injurious to the orchard, having suffered loss of many trees where orchard was planted to such gross feeders as Snyder and Taylor. He noticed that where Early Harvest were planted there was less injury.

Mr. Williams held that the trouble with Mr. Cellar's trees was the want of cultivation; that the same thing would happen if it were weeds.

Mr. Cellar said that there was some fungus disease that seemed to attack his trees; that he was sure the trouble was not sun scald, as often the trouble was on the north side of the tree, where the sun never penetrated..

We took occasion to say that we agree with the essayist. In an orchard of ours planted to both the blackcaps and red varieties, the trees in the part planted to blackcaps, after a time, were twice as large as those in that part planted to red raspberries, although the soil and treatment were the same. This could be readily understood when we remember that the reds are gross feeders, sending up innumerable shoots from the roots, while the blackcaps are shallow growers.

To that part of the paper that disposed of surplus vegetables for stock purposes, as in feeding beets and turnips to milk cows, Mr. Cellar said his wife would dissent to their use, as the milk would be impregnated and both milk and butter would be unfit for use in his family.

Mrs. Key said the trouble was in the manner of feeding them; that where they were fed at milking no deleterious effect would follow.

This was concurred in by many.

Mr. McAfee said a cow was a ten-hour machine; that digestion was perfected in that time and that if the cow was fed only at milking time there would be no evil results from feeding turnips or any other feed, but care must be taken that the cow does not get any between times.

The committee on stone fruit reported. We took occasion to report on seedling peaches of which we showed fifty-two different seedlings, all of Salway blood. These seedlings are from seedling from Salways. History: 1887 W. G. Gano, superintendent of the Olden Fruit Company, sent me a box of very fine Salway peaches. These Salways were grown in a large block, consequently not likely to be fertilized by other varieties. These seeds were planted and forty-nine came into bearing, all of Salway type. Many were fully up to the parent in size, color and flavor. Every one was worthy of propagation, yet none superior to the parent. One very fine one ripened some two weeks earlier than Salway, filling a gap between the Elberta and Salway. This one I propagated. A number of others were budded from by various nurserymen. In 1898 I planted a number of seeds from these seedlings, which I gave out to several persons to plant. These fifty-two varieties of seedlings were of those planted by Mr. John Gibbs. Although last year was a very disastrous one to the peach, yet these seedlings produced some very excellent fruit.

On last Wednesday, Prof. Booth, late of Washington State Horticultural Society, was on his way to assume a position in New York and stopped with me. In speaking of seedling peaches, their value, etc.., I asked him to accompany me to Mr. Gibbs' to see these seedlings. We took a specimen from each tree as long as we had a basket to hold them. We found that we had fifty-two trees represented. All save one were of Salway type. The one was a small white and undoubtedly an accident that got into the mix, in some way. As for the crop, it was simply immense; trees breaking, and upon the ground. I think I never saw a bigger crop than held by those seedlings. Many had not begun to ripen and will be as large again when fully ripened. Of the fifty-two I feel certain there is not a single bad one, or inferior peach, save one. I wish to impress upon the people this fact, that these seedlings are better than are the average budded sorts, sent out by nurserymen. Many times they are misnomers and again the budded part dies out and there springs up a little worthless seedling to vex you. The only objection to seedlings if selected seed is that many are liable to become cling. Thus of the forty-nine first planted nine were cling and, being mixed in with frees, made it inconvenient to pick and market. Of the fifty-two here shown some seventeen are cling and thirty-five are free, relatively one-third turning to cling. The seed were all from free seed.

Mr. Gano said that the yellow peach was more certain to reproduce than the whites, giving many instances of the Elberta, Smock, Salway, etc., that had reproduced themselves from seed.

The president said: Mr. Hale, of Connecticht, says the Elberta, which is a yellow peach, as also the Belle of Georgia, are descended from the Chinese cling, the same year. The Chinese is a white peach, so it will be seen that the peach will sport.

(Note—The gentleman must have misunderstood Mr. Hale, for the Belle of Georgia is a white peach. Both are seedlings of Chinese Cling, a white variety. Major Holsinger's advice as to seedling peaches should not be misunderstood. The seeds he planted were from peaches taken from

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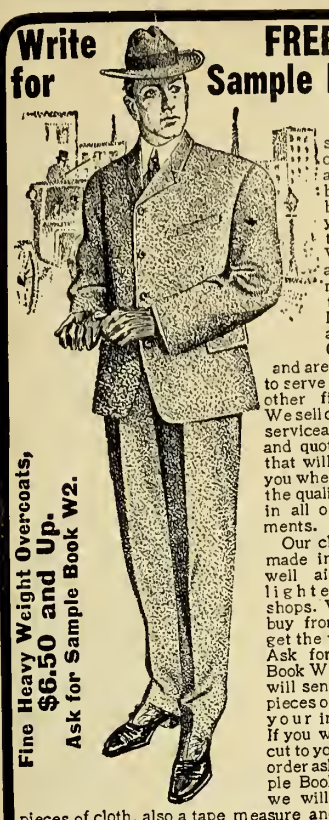

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Apple Seedlings Apple Trees
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the center of a large block of Salway. Therefore, as he says, there was little danger of cross-pollination, and as a result the seedlings were nearly true to the parent type. But there is a difference between planting seeds like these and the seeds which are ordinarily planted, for the latter, nine times out of ten, will prove inferior to the budded sorts now in cultivation. As a rule, seedling peaches are an inferior lot, as can be demonstrated by noticing the crop of the present season. The conditions under which Major Holsinger's seedlings were grown needs to be understood, to avoid making a mistake in trying to grow seedling peaches.—Editor.)

G. L. Holsinger, having just returned from the great St. Louis fair, showed some apples that had been on exhibition eight days that were still well preserved. Of pears there were some fine Duchess, Kieffer, Rutter, Conner's Japan, etc. Apples were an indifferent lot. As the Chandlers are florists, there was a profusion of the beautiful on the tables, while the grounds offered some excellent specimens of dahlias, cannas, etc.

Mr. Pierce, having lately returned from the St. Louis exposition, spoke of the importance of sub-irrigation. Lettuce shown, plants raised same time, planted same day and conditions the same, with the exception of irrigation superficially and sub, by tiling. The difference noted was in favor of the latter; being twice as large as that with surface irrigation.

Mr. Cellar reported the death of our brother, Dr. Murphy, and a committee was appointed to draft resolutions. Dr. Murphy was one of the largest planters of fruits at Edwardsville, Kan. Another good and true man gone and the society impoverished by his loss. Thus we go, one by one, one by one. Who next? May we be prepared, with our lamps trimmed and burning, is the prayer of yours truly.

Birkett Pears.

Y. S. W., Sarcoxie, Mo., wants to know how the Birkett behaved this season? Splendid! I was surprised at the mass of fruit they produced. The trees are free from blight, or showing so little, as to cause no concern. The pears hang in masses and are larger than ever before. They sell at $1 per bushel in our Kansas City market. As an edible they are superior to any of the Japan varieties. The tree is the best of all of the pear family. The Birkett is indispensable. If not lacking at size of fruit I should be inclined to put it at the head of the pear family for this section.

On my old Kieffer trees (they are twenty-one years planted) we had the usual abundant crop, but considerable tree blight. Lost my first Kieffer with body blight. Two miles south, an orchard, on prairie soil, of 200 or more trees, all are dead of blight..

Our soil is better suited to this pear, as out of several thousand only one has succumbed to blight, while many of the European sorts have been killed, notably the Bartlett and Clairgeau. Duchess did fairly well and only a few have died from blight. Rutter showed no blight this year. Garber had little fruit, but considerable blight. Conner's Jap were loaded with fruit, but of so poor quality as to be worthless.

FRANK HOLSINGER.

Cherry Trees in Bad Shape.

In the states of the Middle West, where the past three seasons have been unusually wet, there is much complaint on account of the condition of the cherry trees. The wet weather has resulted in fungus diseases being particularly destructive, and many trees are dead or dying. Early in the season it was noticed that the foliage of many of the trees was affected; leaves turned yellow later, and many trees were almost defoliated. Other trees were not so badly affected, but still the leaves have presented a sickly and unhealthy appearance. And there can be no question that a great many trees will not put forth foliage next spring. Nursery trees have also been affected to a great extent, and there has been much complaint from nurserymen.

Cherry trees, as is well known, cannot stand "wet feet," and must have a well-drained soil. Neither can they stand excessively wet weather, especially where several wet seasons occur in succession. Doubtless cherry trees will have to be sprayed to some extent in future, to guard against these fungous diseases. But there is no need to be discouraged over the situation with cherry trees. This trouble is not new. Weather conditions have been unusual, and will likely not be the same in years. Cherry trees come into bearing early, and the outlook is good for the man who plants cherry trees and cares for them properly. Not enough cherries are raised in Missouri, Kansas or Illinois, or even in Nebraska or Iowa, although the latter states have more cherry trees proportionately than the states first named. Nurserymen report a good demand for cherry trees, and this fruit is one of the few lines which do not show a marked decrease in prices over the past few years, so far as nursery stock is concerned.

With the Fruit Associations.

Mr. B. Travis, Franklin, Neb., sends report of the organization of the Interstate Fruit-Growers' and Shippers' Association, with headquarters at Franklin. The object of the association is to secure the co-operation of growers in the production and marketing of choice fruits. The co-operation of other shipping associations is invited, to the end that there may be harmony of effort. The officers elected for the first year are: B. Travis, president; A. A. Peak, treasurer;

Mrs. J. L. Gates, Spearfish, S. D., reports a good shipping season for the members of the Co-operative Association at that point. Some difficulty has been experienced in getting the growers to put their fruit up in attractive manner, but much progress has been made. A good man is needed to look after the work. Mrs. Gates writes that from their own farm were sold 391 cases of raspberries at an average of $3 per case. Pickers are paid 3 cents a box for their work. Strawberries were only half crop; too much rain. Mrs. Gates' husband has five acres in apples just beginning to bear; no codling moth in that country as yet.

The Fruita Fruit and Produce Association has been formed at Fruita, Colo., with B. F. Hughes as president and W. E. Rhinehart, secretary. Mr. Rhinehart writes that the association starts off well and has about 300 cars of fancy apples for sale and a number of carloads of potatoes. Everything is first-class and reputable buyers will do well to investigate this offer. Address W. E. Rhinehart, Secretary, Fruita, Colo.

Of Course It Is Easy.

Stephen Jones, Jackson, Ohio, says: "It will be easy for me to secure from four to five new subscribers for such a valuable paper as The Fruit-Grower is, by the first of next year, and I am going to do it."

No doubt about it. Anyone who makes up his mind to get a club of five new subscribers can do it. Have you made up your mind? We are counting on you, sure.

Illinois Horticultural Society Meeting.

The annual meeting of the Illinois State Horticultural Society will be held at Bloomington, December 14 to 16, 1904. A good program is being arranged, Secretary Bryant says, and a good meeting is expected. A feature of the meeting will the the exhibit of apples. The executive committee has increased the premiums for the best collection of apples. For collection of not less than ten nor more than twenty-five varieties premiums of $25, $10 and $5 will be awarded, as first, second and third premiums, respectively. Exhibitors must be members of the state society or of one of the district societies.

"I subscribed for The Fruit-Grower for three months, and was so well pleased with it that I wanted some of my friends to enjoy some of the good things it contains," wrote Robert Herriott, Princeton, Ind., when he sent a club of new subscribers.

"I will take The Fruit-Grower as long as I live."—L. A. Harris, Henderson, Tenn.

It is reported that the peaches shipped from Georgia to Europe by J. H. Hale brought somewhat better prices, after all expenses were paid, than fruit marketed at the same time in this country.

The Asiatic ladybird beetles which were taken to Oregon, with a view of increasing in sufficient numbers to hold the San Jose scale in check, have mostly disappeared, and no cause is known for their disappearance. The lime, salt and sulphur spray mixture is, after all, the best remedy for San Jose scale.

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Fundamental Principles

In teaching college students we have found it necessary to lay down certain fundamental principles upon which to build for practical results. If the foundations are not firm the superstructure is in jeopardy, and if the principles are not understood the operations depending on them may not be successful.

There is no time of year in which it is more important to understand and apply the principles of biology in combatting the diseases and insects injurious to vegetation than during the fall. This is because we now see the results and the evidences of the presence of these diseases and insects, and it is possible to take certain measures in exterminating them now, which can not be taken at any other time of the year. Before mentioning these practical methods let us state and explain the following principles:

(1) "All life comes from life." This principle is known as the biogenetic theory of Haeckel. This principle is in opposition to the theory of the spontaneous origin of living things, and tells us that no animal, insect, plant, or even "germ" springs into existence of its own independent accord or from any combination of purely inorganic causes.

(2) All contagious and infectious diseases of both plants and animals are due to the presence or result of minute organisms mostly protozoa bacteria or fungi, which are the descendants of parental organisms of the same species. This means that such diseases as apple scab, bitter rot, ripe rot of fruit, black rot of grapes, leaf blights, leaf spot, mildews, rusts, smuts, potato rot, potato scab, and various other diseases of plants are due to the presence of these small spores or "germs" which have produced the same disease in these or other plants, just as surely as diphtheria, smallpox, scarlet fever, yellow fever, malaria, pneumonia, itch, tetter, and other contagious and infectious diseases are caused by the presence of very minute organic bodies, which are the offspring of others of the same species developing in organisms through which they produced their own characteristic effects or diseases.

(3) "Like begets like." This is to say that men do not gather figs from thistles and grapes from thorn trees, but that each kind of organism brings forth its own kind, and when these minute disease producing organisms are permitted to come to maturity and form reproductive bodies, these bodies will develop into the same kind of organism, and produce the same effect next year as they did this year just as surely as the offspring of a bird will in time become identical with its parental species or the acorn from an oak will develop into a tree of the same kind as that from which it came. This also means that if disease-producing germs are permitted to remain around the premises this fall we may expect the same germs, producing the same effects, next year.

(4) The bodies or portions of the bodies of dead animals and plants that have been killed by disease generally contain and disseminate the disease-produces "spores or "germs," which caused their death or decay, and to prevent the future occurrence of the diseases we must destroy the germs producing them before they have been disseminated or spread abroad.

(5) "An ounce of prevention is worth a pound of cure." This principle is applied to saving of human life in our strict quarantine system, and is also the foundation of the practice of isolating diseased animals and fowls from the general herd or flock. However, we are just commencing to realize that plants are subject to the same laws of nature as animals, and that the adoption of the quarantine system and the promptness in destroying diseased plants and parts of plants are just as essential to maintain a healthy stock for the producer as it is to destroy diseased or dead animals or promptly and efficiently dispose of the bodies of human being that have died of contagious diseases.

Conclusion: Diseases are prevented by destroying the bodies of diseased plants and animals in such a way that the disease-producing germs are also destroyed, either by burying or burning, just as soon as possible after the desirable portion of the crop is gathered. If such an article as a rotting potato be permitted to remain in the field the germs causing blight will thus stay in the soil until the next year. If the bunches of smut on the cornstalk be permitted to drop to the ground, they contain millions of spores, which will remain in the soil and infest the next crop. If in picking peaches and cherries the fruit that is diseased with the brown rot be permitted to remain on the tree and become mummies, the disease germs are thus carried over until next season, as they would also be if these fruits were permitted to drop and remain upon the ground. Examples of this kind could be given with all kinds of plants, such as clubroot and blackrot of cabbage, leaf spot, rust and anthracnose or canker rot of beans, and, in fact, all other diseases. The essential practice is to destroy these plants by burning or burying deeply as soon as possible.

Some of them could be treated by burying in the compost heap to decay and become fertilizer for another crop, but the trouble is that there are certain diseases the germs of which would not be destroyed by this method. The black rot and clubroot of cabbage, for example, have been known to be carried through winter and spread in the field by just such conditions.

The necessity of destroying the diseased parts of the plants is apparent. If a blighted branch from a pear tree, for example, be sawed off and thrown on the ground, it contains millions of bacteria causing pear blight, and some of these may re-infest the tree sooner or later. Many plants are infected with diseases which spread by means of spores or very minute, dust-like reproductive bodies. These are what cause the grayish, dust-like appearance upon such fruits as decayed peaches, rotting with the brown rot. If such rotting peaches be not destroyed before the dust-like spores are formed, it is almost useless to destroy them afterward as the reproductive bodies are thus set free.

For the destruction of insects the same principles are imperative. For example, all fruits infested with the apple maggot should be fed to live stock, burned or thrown in water as soon as possible. Since there is no remedy for this pest, it must be met with prevention. The potato borer, the squash vine borer, lice on peas, melons and other plants, lice on the roots of beans, insects mining in the leaves of plants, various kinds of root worms, and insects infesting ripe fruits of all kinds are to be destroyed promptly with the destruction of the part of the plant which they attack rather than be permitted to remain and infest next year's crop. The best method is to throw all vines and leaves upon a hot fire before they have time to wilt and thus cause the escape of their enemies. The man who follows such methods as these will be successful while the one who does not will say that he is "unlucky.'

H. A. SURFACE,
State Zoologist of Pennsylvania.

Apples for Cold Storage.

The question of cold storage for apples, the proper time for picking and the details connected with the handling of apples intended for cold storage, has been of small interest to the Pennsylvania grower up to this time, because there are few large commercial orchards of a bearing age in the state and still fewer cold storage houses owned and operated by growers. Apples in Pennsylvania are grown chiefly in farm orchards, and sold in the local markets, either directly from the tree or from a frost-proof cellar. There are a few large orchards, the apples from which have been annually sold to the packers, who shipped them away to cold storage houses located in the large cities, hence the grower has not been obliged to study this question. But within

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PERRY, OHIO

the past few years many large orchards have been planted and when they come into full bearing the growers will be obliged either to build their own storage houses, as our neighbors in Delaware have done, or else sell their crop at a low price in the fall to cold storage companies, who will reap all the profit, therefore this seems to be a good time to consider this question.

The former practice that was in vogue before we knew anything about cold storage or spraying, which required the apples to be picked rather green and to remain in piles under the trees for several weeks to "season" before packing, was good in this respect: During those few weeks of "seasoning," the imperfect fruit, the bruised fruit, the unsound fruit of all kinds would surely show up, and only sound apples would be packed and these of course would keep longer than if all had been packed together at the time of picking; but during these few weeks the ripening process has so far advanced in the sound specimens that they will not keep so long as they would if packed and placed in storage immediately after picking. The United States Department of Agriculture, by a series of experiments conducted along the same lines for several years and by carefully comparing the results with the practice of the most successful packers, has thrown considerable light on the subject. It has been clearly proven that the old method just mentioned is entirely wrong; that apples should be placed in the cold room as soon as possible after picking, with as little handling as possible; that the apples should be well matured, be fully grown and well colored, and that the temperature of the room should be kept at from 30 to 32 degrees Farenheit.

This is good as far as it goes, but in my opinion does not go far enough. We find that some seasons apples come out of cold storage in the spring without any perceptible loss, and looking as fresh as when they went in, while the next season there may be from 30 to 50 per cent of loss on apples from the same house and kept under exactly the same conditions, showing that the apple itself has greater or less keeping quality according to the conditions under which it has been grown and gathered. Right here we have a wide field for the United States Department of Agriculture and the various state experiment stations to investigate. I have been much interested in watching the development of a block of York Imperial apple trees planted on well drained river bottom land, that has recently come into bearing. The first two years the apples from these trees were large and handsome, but didn't keep as well as Baldwins grown on older trees quite near them. Last year the trees bore a full crop; the apples were not quite so large and kept about as well as Baldwins and I find the fruit on several trees thirty years old in the same orchard does not keep any better than Baldwins and must be sold at the same time, while York Imperial grown on the York hills only a few miles away will keep until March in an ord'nary cellar and come out nice and crisp. Hence the question: Is not altitude an important factor in the production of long-keeping apples? Will apples grown on the foothills of the mountains—other things being equal—keep better than those grown in the valley? Again, we know that the large strawberries from vines that have been liberally supplied with nitrogen, are soft, will not carry so far and will not stand up so well as berries from vines that have had a liberal dressing of potash, hence the question: Can we improve the keeping qualities of our apples by the judicious use of potash fertilizers? I think we can. We know that we can stiffen the straw and at the same time cause the wheat grain to fill out more perfectly by the use of phosphoric acid as a fertilizer. May we not improve the keeping qualities of our apples by the judicious use of phosphoric acid? These are questions that can only be answered by actual field experiments, carefully conducted for a series of years, on various soils and under varying conditions.

One great trouble with winter apples in Pennsylvania is that they ripen and drop from the tree before the weather has become sufficiently cool in the fall to handle them. I have found in my own experience that as long as the foliage can be kept green and fresh the perfect apples will hang on; that by careful spraying with Bordeaux mixture at intervals of about two weeks during the early part of the season—that is until about the middle of July—the foliage can be kept green and fresh until the frost kills everything in the fall, and when this is done, apples, such as Baldwin, Smith's Cider and York Imperial, can be picked from the 15th of October to the 1st of November, and these apples are invariably good keepers, because they have had the whole season to grow, are fully matured and are as nearly perfect as we can grow them.

I am more firmly convinced each year as I grow older, that if we want to keep apples in cold storage or otherwise without loss, we must grow the apples from the time the buds burst in the spring with that end in view; we must grow perfect, hard-fleshed apples, free from the spores of bitter rot, scab, or any other fungus. Our United States Department of Agriculture has done us good service in explaining how the fruit should be gathered, how it should be packed, how the cold storage house should be constructed and regulated—in short, how we should care for the apples after they are taken from the tree and the results of their experiments correspond with the experience of the best growers and shippers all over the country. Now we want to know how to grow an apple that will keep; what shall we plant, where shall we plant it, how shall we prune it, what cultivation shall we give it, how shall we fertilize it, dare we frequently plow down leguminous clover crops in our orchards as some writers are urging us to do, how shall be spray it, shall we use liquid or dust spray or both—to produce this apple that may be kept in cold storage or otherwise with the least possible loss?

I say "or otherwise" because I believe that York Imperial planted in the right place and properly grown can be kept long enough in a properly constructed cellar or cave, and be put on the market in better condition in the spring than if kept in cold storage. I believe this because I have seen better apples offered in the Harrisburg markets by York County farmers in the spring of the year than I have seen brough out of cold storage at the same season—apples clean and bright and perfectly free from scald. I would like very much to see this question, or rather the above questions, discussed by both practical growers and scientists through the columns of The Fruit-Grower. It may lead to a series of experiments along this line that will be of great value to the apple growers of the country.

G. H.

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Grapes at Kansas State Fair.

At the Kansas State Fair at Topeka the Kansas State Agricultural College made an exhibit which was very valuable along educational lines—as all exhibits of this kind should be. At these fairs, where exhibits are properly installed and labeled, is offered an exceptional opportunity to become acquaint d with a fine qu lity of agricultural and horticultural products. Prof. Albert Dickens, of the college, sends us a brief report of the exhibit made at Topeka, which is especially interesting, in view of the report made concerning different varieties of grapes in connection with the exhibits. Concerning the display, he says:

The varieties of grains are conspicuously labeled and so grouped as to help even the uninitiated to recognize the great difference in seemingly similar grains. Many of the newer varieties of wheat, oats, barley, corn, flax and other products are exhibited for the first time. Brief notes upon the varieties are given upon the labels.

The exhibit of fruit comprises a large number of varieties of grapes and apples. The number of grape varieties is a revelation to many of the growers. Each variety is conspicuously labeled and the label bears a comment upon the variety. All the old familiar sorts are shown and to some extent are used as standard for the rating of the varieties not widely known.

The following is a list of grapes exhibited and the comment on each:

Agawam—Fine quality; productive; needs protection in severe winters.

Amber—Fine quality; tender; light bearer.

August Giant—Pulp tough; quality fair.

Bacchus—Good for jelly and juice.

Beagle—Hardy; pulp tough; good for jelly.

Beauty—Good quality; semi-tender.

Berckmans—Quality good; not equal to its parent, Delaware.

Blood—Rank grower; good bearer; poor flavor.

Brighton—Should be in every vineyard.

Brilliant—One of the best.

Cambridge—Similar to Concord but inferior.

Campbell's Early—Not equal to Concord.

Carman—Pulp tough; wood tender; fairly productive.

Catawba—Best late grape.

Concord—The old reliable.

Conqueror—Thrifty; free grower; fair quality; moderately productive.

Cynthiana—Good for juice; hardy.

Delaware—First quality; sweet; semi-hardy.

Diana—Tender; light bearer.

Dracut Amber—Reliable; flavor too musky for some.

Dinkel—One of the best late; less vigcrous than the Catawaba.

Duchess—Poor; subject to antracnose.

Early market; good quality; light bearer.

Elvira—A most prolific and sure bearer.

Esther--Fair to good; vine not hardy.

Eumelan—Good quality; not hardy; early mildew.

Fern Munson—Fair quality; thrifty grower; wood somewhat tender.

Goethe—Good quality; not hardy; yields light.

Gold Coin — Good, productive; slightly tender.

Grien's Golden—A good quality white grape.

Hartford—Prolific; early; poor quality.

Herbemont—Hardy; fair quality.

Herbert—Good; wood tender.

Highland—Quality fair; late; good bearer.

Hillgarde — Fair; many better in same season.

Isabella—Good; somewhat tough.

Jefferson—Fine quality; easily injured by frost and fungus.

Josselyn's No. 10—Good quality; desirable fruit.

Josselyn's No. 7—Don't plant it.

Lenoir—Fine for jelly and juice.

Lady Washington—A prolific bearer; fair quality; semi-hardy.

Letoney—Pass this by.

Martha—Only fair.

Massasoit — Good quality; early; fair bearer.

Montefiore—There are better for its season.

Munson's No. 82—A rank grower; quality poor.

Naomi—A white grape worth growing.

Nectar—A good grape; not thrifty.

Noah—A good bearer; mildews badly.

North Carolina — Thick skinned; fair quality; thrifty grower.

Perkins—A thrifty grower; good quality.

Poughkeepsie Red—Quality of the best; vine not thrifty.

Pulpless—Good for juice but sour.

Requa—Good quality; wood tender.

Rochester—Not among our best.

Rommel's Etta—A good bearer; one of the fall whites.

Sweety—A prolific bearer; fair quality.

Uhland—Poor bearer; not hardy.

Venango—Tough but fairly good.

Vergennes—Productive; good.

Woodruff Red — Prolific; hardy; good.

Worden—Concord's best child.

Wyoming Red—Hardy; pulp tough; quality fair.

Breeding New Fruits in the Northwest

The South Dakota Experiment Station has just issued two bulletins by Prof. N. E. Hansen, Horticulturist, which are most valuable. They are entitled "The Western Sand Cherry" and "Breeding Hardy Fruits." These bulletins are valuable everywhere—in the Northwest for the help they give the growers there and everywhere else for giving horticulturists an idea of what is being done in breeding new fruits.

The first bulletin tells of the work which has been done with the Sand Cherry (Prunus Besseyi) in trying to domesticate it. Efforts are being made to improve it by selection, and seedlings from it are carefully watched and the best of them selected for propagation. Thousands of seedlings are being tested, and much progress is being made. Another line of work is the use of the Sand Cherry as a stock on which to work other stone fruits. It has been found that this stock dwarfs the trees very much, and this plan may have a commercial value on this account. For instance, it has been found practicable to bud the peach on Sand Cherry stock and produce a low-growing, dwarf tree, which fruits early. These peach trees will be especially desirable where And in the northern limit of the peach belt these trees will have a value. Prof. Goff tried budding the peach on Sand Cherry in Wisconsin and succeeded in getting good trees. He, like Prof. Hansen, believes that where it is desired that peach trees be laid down and covered during the winter, the Sand Cherry will be the best stock to use. Regarding these trees Prof. Goff said:

"The peach grew vigorously on this stock, and by the second year had attained a height of five feet. The past season, although the best growing season we have had for five years, the peach trees on this stock have scarcely increased in height. They have branched rather thickly, and at present are well filled with flower buds, from which I infer that they will probably not grow larger than they are now. At this height the trees are readily protected by digging away sufficient earth from the roots, so that the trunk may be bent down readily, when the whole is covered with earth."

This bulletin is fully illustrated with cuts, and is a most valuable one in every way.

"Breeding Hardy Fruits," the other bulletin, is also valuable. It shows that the South Dakota Station is doing a great work along this line—a work which will be commendable in any experiment station. The work of the South Dakota station in plant breeding is said to be second only to that of Luther Burbank of California. On the subject of plant breeding, Prof. Hansen says:

"It is only in recent years that the immense importance of plant-breeding has become generally recognized. Plant-breeding means the originating of improved varieties by selection, crossing and hybridizing. These are often termed 'new creations,' and the work corresponds to that of invention in the domain of the mechanical industries. A strictly hardy winter apple, a hardy cherry, or a hardy grape of large size and good quality, would

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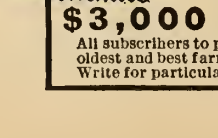

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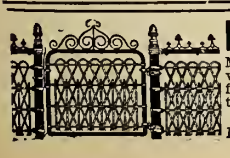

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"For the benefit of the general reader it should be stated that fruit trees, shrubs and plants usually vary greatly from seed, so that no two are exactly alike. For example, from one thousand trees raised from seed of the same variety of apple, even from the same tree, no two trees will be exactly alike as to character of fruit. Of all these, usually very few are worthy of propagation; sometimes only one, sometimes none. Any variety proving especially desirable as to quality, size and productiveness, may be given a name and as many more plants obtained as desired by budding, grafting or other mode of division. Many of the standard varieties of orehard and small fruits in cultivation today are chance productions of unknown origin. Some say that all such work should be left to chance. But waiting for nature to do all the work is not favored by the most advanced workers in this line. In the breeding of plants many of the same laws apply which hold in the breeding of animals. One of the most interesting of recent developments in this work is that plants can be bred resistant and immune to various fungous and insect enemies. This is illustrated by the recent work of the United States Department of Agriculture in originating new varieties of cotton proof against the destructive cotton wilt."

Three years ago, Prof. Hansen says, the following seedlings were growing on the station grounds, to be tested: Sand cherry, 8,400; plum, 4,000; grape, 5,000; wild strawberry crossed with tame, 5,000; strawberry, pure native, 1,000; pin cherry, 25; choke cherry, 360; golden currant, 200; black currant, 2,200; buffalo berry, 180; gooseberry, 425; wild raspberry, crossed with tame, 200; raspberry, pure native, 40. Since that time the number has been greatly increased, until the number of seedlings has reached fully a quarter of a million.

The book is fully illustrated, showing just what is being done, with some of the results of the work. An interesting illustration is one showing a "graft-hybrid of the apple." Several years ago Mr. N. F. Murray wrote an article for The Fruit-Grower, describing how he had produced a cross by splitting two scions through the bud and uniting these and inserting in a scion, the resulting fruit being somewhat different from either this could not be done, but it seems that Prof. Hansen thinks differently, for he says:

"In the winter of 1901-02 an extended series of experiments was undertaken at this station to produce new varieties of apples by splitting two scions through the bud and uniting the corresponding halves of the two varieties. One of the successful hybrids is shown in the illustration. It will be impossible to predict the character of the fruit from these trees; their fruiting is awaited with interest. The scions containing one bud are inserted by side-grafting upon whole roots of common apple seedlings. It is a work demanding great care and exactness of manipulation, and the method is not recommended to the amateur. The use of glass has been found necessary by the present writer in this work."

The Fruit-Grower wishes to commend Prof. Hansen's work. This line can very profitably be carried on by every experiment station—certainly no private individual can afford to undertake the work of producing new varieties. While South Dakota is trying to get hardier fruits, the other stations can labor to get better quality, better trees, more resistant trees, etc. It is a long work, and a hard work—but it is the greatest work in horticulture.

⚜ ⚜ ⚜

Southwest Arkansas.

I spent a few days in Southwestern Arkansas, along the line of the Kansis City Southern, recently, and it occurs to me that I may have learned a little about that corner of the world that will be of interest to readers of The Western Fruit-Grower. It is one of the peculiarities of the horticulturist that he is always ready to tell what he knows, whenever assured of listeners who can understand fruit talk. It is claimed by many that people are born to fill the various vocations of life, and we add, that if this contention be true, that but few are born to be horticulturists. While most lines of human endeavor have had their trade papers for years, it seems to me that until The Western Fruit-Grower gathered together more than 30,000 of the fruit-growers of this country into The Fruit-Grower Family, that the industry has never had a leadership nor a representative publication.

There are three classes of fruit-growers: Those who grow fruit in a wholesale way, to sell by the hundred crates, boxes or carloads; they who grow fruit in a retail way, to supply their own town or county and who aim to place their product with the consumer direct or nearly so, and the man who grows fruit for his family use on his small plot of ground in town or country. All these go to make up the people to whom The Fruit-Grower has become a center of information and communication. What interests one of us, interests all of us, and he who learns a thing of value about the business is glad to make it known to the rest of the clan. It is a remarkable fact that they who are in the fruit business are in it more from the love of nature and her works than from a love of the money that may be made out of the industry. Their love for their trees and plants is not a mercenary one.

What most interested me while in Southwestern Arkansas was the immense Elberta peach orchard at Horatio . I spent the best part of two days there, studying the methods used in transforming a virgin forest into a peach orchard. The Southern Orchard Planting Company has here 7,000 acres of hill land all in one body which they are planting exclusive to Elbertas. The original forest consists of about 10 per cent pine, balance hickory, white oak, red oak and black oak. The soil is a gravel deposit mixed with soil, I could not say in what proportion, but the gravel is mighty plenty and there is no bottom to it. I would like to know what a geologist would say about this soil formation, which seems to be an immense deposit of soil, sand and gravel. At De Queen, a short d'stance north of Horatio, there is a white shale soil, with little gravel. Many peach orchards are planted at De Queen, but I was not so favorably impressed with their soil nor the growth of their trees. It is remarkable what variations of soil occur in short disances. At Horatio we find the southern uplift of the Ozark range. All south from Horatio is a level, rather swampy country; probably excellent for cotton, but not a peach country.

In the Horatio orchard I found 2000 acres already cleared and set to Elberta trees, part planted last spring and part set a year ago last spring. Spring comes in February there, and planting is in progress all winter. One thousand acres more is now mostly cleared to be planted next winter. In buying up these lands the company acquired quite a number of houses, and is now building forty more four-room houses scattered around over the plantation to be occupied by their help. Another item of interest was the substantial fences, of which thirty miles have been built. We found 100 men and 100 mules at work cultivating the trees, single shovel plows and spring tooth harrows being the principal tools used. While there are many colored men in the country, only white men seemed to be working there.

I rode out over the country in several directions and talked with the oldest inhabitants. They told me that the country had only lost two crops of peaches in thirty years. They have found out that the best and sweetest peaches grow on the hills, but have no idea of the commercial importance of the peach. They have not even regarded fruit as a necessity for home consumption, and the present rapid growth of commercial fruit-growing surprises them. I found but one or two Southern men with well kept orchards of budded fruit. I saw one orchard of several acres that had been planted by one of the old settlers. It was a complete and entire failure. Only men who are trained to the business grow successful commercial orchards. This accounts for the fact that out of every thousand trees sold by nurserymen and agents over the country, probably not fifty trees ever produce merchantable fruit.

R. H. CADWALLADER.

Louisburg, Kan.

⚜ ⚜ ⚜

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Barnyard Manure and Commercial Fertilizers.

The Michigan experiment station has recently issued a bulletin on commercial fertilizers, giving results of fertilizer inspection in that state. This bulletin contains a common-sense statement of the relation which commercial fertilizers bear to barnyard manure, which will be interesting to fruit-growers especially, too many of whom have not enough barnyard manure to supply the needs of their soil. Concerning the relative merits of these two fertilizers, this bulletin says:

"There are few subjects which it seems can with propriety be discussed more frequently than the relative importance of barnyard manure and commercial fertilizers. There is abundant evidence to show that commercial fertilizers can never, on the American farm, entirely supersede the use of barnyard manure. Pound for pound most fertilizers contain very much more nitrogen, phosphoric acid and potash than does barnyard manure, but in most instances the growing test is in favor of the manure. There is unquestionably an influence physical, chemical or bacterial or all together that has a favorable effect on plant life and which can not be attributed solely to the nitrogen, phosphoric acid and potash present. Where all the products of the farm are fed on the premises and cared for properly there should be sufficient manure to keep the farm in a high state of fertility and on such a farm, in our opinion, the use of commercial fertilizers would be uneconomical. However, on small truck farms and on others where but little barnyard manure is available the use of commercial fertilizers is commendable. It is reasonable to suppose that no system of farming can be permanent that continually robs the soil of nutritive material without returning something to it. There is no question but that barnyard manure is the best source at the disposal of the farmer, to permanently increase the productivity of his land . No other fertilizer is so lasting in its effects. The great difficulty with a large number of Michigan farms is that it is impossible to obtain enough of this manure. On such farms commercial fertilizers have been used with a great deal of success, and as the system of farming becomes more intensive the use of commercial fertilizers must likewise increase. All farmers cannot be dairymen and stockmen. Some must sell the wheat, fruits and garden products to support the rapidly increasing city populations, and such farmers must replenish in commercial fertilizers the equivalent at least of that which the exported crop removed. The use of commercial fertilizers is not a fad and it will not down. The man who has plenty of barnyard manure, however, will not buy fertilizers extensively, for they are clearly in a class below the natural manures, but the farmer who has not barnyard manure and cannot get it is compelled to use commercial fertilizers if he would keep pace with his neighbor in the productiveness of his land.

"On a still too large number of Michigan farms the great value of farm manures is not appreciated, neither is there exhibited the great familiarity with the constituents and properties of these natural manures. The farmer who would use manures to the best advantage must become a student of the conditions causing the productions of manures and the sources from which they are obtained. Comparatively few indeed are the farms where special effort is made to preserve the liquid manure from the stock fed, and yet that is the most valuable portion of the animal excrement. The author is thoroughly familiar with countless examples of stables wherein the liquid excrement of animals, instead of being saved in the manure, seeps through the cracks and holes in the floor and soaks into the ground beneath the barn, where, instead of being of value to the farmer, it becomes a constant menace to the health of the animals and the inhabitants of the near-by dwelling. Some way of saving this material as well as the solid manure should be found, and then, in most cases, let the manure be applied as fresh as possible to the land. It is quite generally conceded by practical men and scientists as well that the maximum effect is produced by the application of manures as soon as made. This is not always possible, and yet it is usually found that the difficulty is apparent rather than real.

"It does not seem to be a great task for some farmers to get into the habit of removing a wagon load of manure to the field as soon as it is ready, and a habit of this nature, once formed, is productive of untold benefit. Let no farmer neglect the natural farm manures for the more easily handled commercial fertilizers, but rather let the user of commercial fertilizers secure and use therewith as much barnyard manure as he can obtain.

"It is quite generally conceded that a first-rate method of reviving some land is to plow under a crop of clover or some other legume as a green manure. It has been considered one of the best ways of applying a nitrogenous fertilizer to the soil, and it has the advantage over commercial fertilizers that ordinary banrnyard manure has in that it is quite lasting in its effects. The benefit due to a leguminous crop is far beyond the actual composition of the plant, for the effect of the decomposition is to materially change the climate and physical condition of the soil. On a farm well provided with barnyard manure, due to the feeding of much stock, it is doubtful if the benefits derived from the turning under of a leguminous crop are sufficient to counterbalance the value of the crop for feeding purposes. The application of the manure in large quantities would undoubtedly serve as well or at least nearly as well as the green manure, and at the same time the crop of clover will have contributed to the food of the stock. On farms or in orchards where no stock are kept and where the supply of barnyard manure is very limited the green manuring with a leguminous crop will be found a valuable contribution to the fertility of the soil.

In the Southern states cotton seed meal is much used as a nitrogenous fertilizer, being applied directly to the land. It serves the purpose admirably and has an influence similar to that of barnyard manure and clover. Its great value for feeding purposes will prevent the use of this material on stock and dairy farms in Michigan, for in this case, as with clover, its value after feeding will be nearly as great as before, and the intermediate product—milk or beef—will be an added source of wealth.

"On small farms, gardens and orchards where no barnyard manure is available, cotton seed meal should prove a valuable manure. It contains a much higher content of nitrogen than do most commercial fertilizers, and besides contributes much to the humus supply of the soil.

"Much has been said regarding the value of unleached wood ashes—too much it would seem in some instances, for in many cases wood ashes have been used with quite detrimental effects. On some soils, not already light and sandy, wood ashes are valuable, for, besides supplying about 5 per cent of water-soluble potash, the lime present in the ashes aids materially in producing a better physical condition of the soil. However, it is doubtful if in most cases ashes can be considered to have any commercial value above that of the potash they contain. In general it may be said that wherever lime is desirable on a soil, there ashes will also be beneficial."

REQUEST OF EDITOR.

We would like every reader of this paper to write and say if he or she could make use of any of the following named articles: A Buggy, Sewing Machine, Organ, Piano, Stove, Carpet, Cream Separator, Furniture, Set of Dishes, Gun or Watch. On a postal card or in a letter say which one of the above named articles you could make use of and you will receive by return mail the most astonishingly liberal offer ever heard of. You will get a special new catalogue describing the goods you mention, you will get a Free Trial Offer and a most surprisingly new and fair proposition, will all go to you by return mail, free, postpaid. Say which one of these articles you might possibly find use for, **mention this request,** and address your postal card or letter to

SEARS, ROEBUCK & CO., Chicago, Ill.

The Chicago, Milwaukee & St. Paul Railway.

There have appeared recently, in the Saturday Evening Post, a series of articles by Frank H. Spearman, concerning some of the railway systems of the country. In the issue for September 3, there appeared an article telling of the development of the Chicago, Milwaukee & St. Paul Railway, which is most interesting. This road has come to be one of the great systems of the country, with lines tapping the richest sections of the American continent. It has been built up by hard work, on proper lines, and has a great future before it. Those persons who have imagined there is no sentiment in the railway business should read Mr. Spearman's story of the loyalty and "family feeling" of the employes and officials of the St. Paul system, as this system is called. "Once a St. Paul man, always a St. Paul man" has come to be an accepted saying, and from the highest to the lowest employee there is a feeling of personal interest, according to Mr. Spearman, which is all too rare among railroads—and among other business firms, for that matter. This loyalty means much to the railroad and to the patrons of the same, and the St. Paul system is to be congratulated upon its position.

Fruit Farms and Lands for Sale

FRUIT FARM FOR SALE.

160 acres, of which 40 acres are commercial varieties of apples—2,000 Ben Davis, 1,000 Gano and 1,000 Mammoth Black Twig; orchard seven years old and perfectly healthy. For particulars write **T. J. Clendenin, Jr., Mexico, Mo.**

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FOR SALE—I desire to sell the following farms, and will sell them at bargain prices: 640 acres, 280 acres, 240 acres, 160 acres and 80 acres. These farms are all well improved, in Newton Co., Mo.; the finest country on the map in southwest Missouri. Write for particulars. **Isaac Landers, Neosho, Mo.**

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If you wish to buy, sell or exchange property, write Smith-Myers Realty Co., Springdale, Ark.

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Fruit Growers send 25 cents for 6 months trial subscription to THE PEACH GROWER, Savannah, Ga. It is a practical paper for growers of all kinds of fruit, of peculiar interest to peach growers. Published in the greatest peach state in the world, it publishes much matter of interest to peach growers everywhere. During the World's Fair, the editor, Mr. R. M. Martin, may be found in section 74 of the Palace of Agriculture, where he is in charge of the Georgia exhibits. Detailed information of the publication may be had from him.

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(Continued from Page 7.)

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Oklahoma—Winesap and Ben Davis.

Texas—Black Twig, Winesap and Jonathan.

Tennessee—Paragon, Rome Beauty and Ben Davis.

Virginia—Winesap.

Wisconsin—Wealthy.

Washington—Arkansas Black, Wolf River, Winesap, Ben Davis and Summer Strawberry.

It is, perhaps, due to some other states that took no part in the distribution to say that it was not for a lack of interest and willingness on the part of those in charge here, as they are without exception live, wideawake, progressive horticulturalists, but rather, in some instances to unexpected delays in transit, remoteness from St. Louis, and consequently excessive express rates (in many instances the transportation charges being far in excess of the value of the fruit.)

In a few states where no adequate provision had been made by the legislature for horticultural exhibits, a handful of patriotic, public-spirited gentlemen, having charge of the fruit exhibits, went down into their own pockets, and contributed their money freely, to save the honor of their states. Much credit for the success of Apple Day is due Superintendent of Pomology John T. Stinson for his untiring efforts.

Very appropriate and artistic floral effects were prepared for the occasion, the excellence of the arrangement being due to Mr. Joseph Hadkinson, superintendent of floriculture. A beautiful American flag of large proportions made of red and white gladiolis, with a field of blue composed of wild flowers, also a large horseshoe, made entirely of Gladiolus, were presented by Mr. Arthur Cowee, of Berlin, N. Y., teh largest Gladiolus grower in the world. In the large open space, in the center of the spacious Horticultural Building, were erected fourteen columns, representing the fourteen states and territories of the Louisiana Purchase. At the base of each column was a mass of calla lilies, palmetto, rubber plant, California palm, golden rod and other beautiful plants, intermingled with sumach, oak and silver poplar boughs, with festoonings of green oak leaves suspended from above. Within this circle of columns, Weils Band of St. Louis took its station and furnished most excellent music at 'ntervals during the day.

All in all it was a great day on the calendar of horticultural events and will, no doubt, be productive of good results. Many will remember and put into practice the litttle rhyme—

"Eat an apple before you go to bed,
And knock the doctor on the head."

G. R. M.

To Destroy San Jose Scale.

Fruit-growers everywhere will be interested in the announcement elsewhere in this issue of the perfection of a concentrated lime-salt-sulphur mixture, for use in spraying against San Jose scale. As is well known, the lime-salt-sulphur mixture has been found to be the most effective insecticide for fighting San Jose scale. The only trouble has been that many persons have found it rather difficult to make. Now, however, there will be no trouble on this score, for the American Horticulture Distributing Co., of Martinsburg, W. Va., after much experimenting, has perfected a concentrated solution, called "Con-Sol," which has been well tested and found to be effective. In using Con-Sol, no cooking is required—simply mix the preparation with water, and spray the trees. Special attention is called to the advertisement of this firm, and all who are interested should write for full particulars concerning this new preparation.

American Apple Growers' Congress.

The third annual meeting of this body will be held in the Administration building at the World's Fair, November 9, 10 and 11. Only one session will be held each day, allowing members to attend the fair the remainder of the day. Topics selected for discussion at the meeting include the following: Picking and handling apples for market, and the best method of disposing of the crop; foreign markets and what can be done to extend them; Southern markets and how to reach them; commercial packages and packing; quality versus quantity; state or government inspection of apples for home and foreign markets.

Some of the best men in the country have been secured to discuess these subjects, and a good meeting is anticipated. Complete program will soon be ready and can be secured by addressing T. C. Wilson, secretary, Hannibal, Mo.

We would call the attention of nurserymen to the advertisement of M. Brunswick & Co. of Rochester, N. Y., on page ten of this issue.

For nearly twenty years they have been supplying the leading Nurserymen throughout the country with Plate Books for canvassing and previous to that time were connected with the late D. M. Dewey, the originator of Fruit Plates, having had charge of his manufacturing department for over fifteen years.

The unprecedented demand for their Fruit Plates in all parts of the country and the numerous testimonials that they are constantly receiving, is evidence that their efforts along these lines are appreciated and that the position their plates occupy today, is the crowning achievement of many years of persistent effort.

During all this time a steady growth has stimulated their ambitions, until today, they are able to point with pride to the pre-eminence that their plates enjoy throughout the United States and Canada.

The quality of their plates is apparent to all who have tried them and every detail in their manufacture has the personal attention of a member of the firm, who has made the study of Fruit Plates a life work, while none but the best of artists are employed.

They cordially invite correspondence on the subject of Fruit and Ornamental Plates and are always glad to send samples and catalogue free to all parts of the country, and we can truthfully recommend their books to Nurserymen and their agents.

The Big Mail Order House of Sears, Roebuck & Co., Chicago, is now offering their enormous and wonderful General Catalogue, No. 114, absolutely free of charge. Any one can get this Big Catalogue absolutely free by simply writing a letter or a postal card and asking for it. It is wonderful what a great business the house of Sears, Roebuck & Co. has built up throughout the country, and the prices they name on the highest quality of merchandise in every line are really astonishing, they are so cheap. Sears, Roebuck & Co. have established a most enviable reputation for honest and fair dealing with the people, and their word is as good as a Government bond. They are among our largest advertisers, and we take pleasure in adding this word of indorsement to their various announcements that appear in our paper from time to time. We know that not one of our readers can ever lose a single penny by dealing with this big house and we feel that it is only justice to our subscribers to call attention to this fact, and say to them frankly that it will surely pay them to find out Sears, Roebuck & Co.'s price on any article before they buy elsewhere.

"DO THIS NOW"

is the headline of an advertisement appearing in this issue, and should be read by all spectacle wearers, spectacle dealers and agents. By straightforward and strictly square business methods the Dr. Haux Spectacle Co., of St. Louis, Mo. whose announcement this is, has become one of the largest mail order spectacle houses in the country, and we do not hesitate to recommend them to any of our readers who may be interested in their superior line of spectacles, which have become known the world over as the "Dr. Haux Famous Perfect Vision Spectacles" and are highly recommended by their thousands of customers all over the world.

Superior, Colo., Aug. 11, 1904. Messrs. Maher & Grosh, Toledo, O.—Sirs: Please mail me a copy of your catalogue. I bought knives of you fifteen years ago when I was a "kid" back in Alabama, and I've never had a good knife since I bought my last one from you. Yours truly, J. A. Driver.

SHOWING COON SKINS.

An old Arkansas hunter, who was in the habit of taking his dogs and gun out for a solitary coon hunt almost every evening, weather permitting, also took himself to the cross-roads store each following morning, and to the neighbors assembled there, related miraculous stories of the still more miraculous numbers of coons he had annihilated the night before. These honest friends, with true Southern good nature, passively submitted to these wild tales from day to day, until the number grew to such magnitude as to surpass all belief, and then, rising in their righteous indignation, as one body, gave vent to their feelings in the following:

"Look here, neighbor, this talk of killing coons is all well and good. There are coons in the woods, and powder and shot can kill them, but if you want us to believe that you are such a mighty hunter, you have just got to show us those coon skins."

And that is just what Vitae-Ore, the natural mineral remedy which is being advertised so extensively in these columns, has been doing right along. For every claim of a cure made it has produced the "coon skin," the actual living, breathing, walking, talking witness in the cured one. It does not ask belief, it asks no credence, it wants only an opportunity to show "coon skins" in each individual case, to produce before each and every sick and ailing reader of this paper a "coon skin" in the form of his or her own improvement and benefit, before he or she need believe one jot or pay one cent.

Medicines have come and gone, have sprung up in the night like mushrooms, have made broad claims and told of remarkable hunts and the capture of remarkable numbers of "coons," but when the time came they could not show the "coon skins," and passed out into the night, to be be heard of no more.

Not so with Vitae-Ore! It has stood the test of over a generation of time and peoples, and has fully proven and substantiated its right to the title of being the "Best thing in, on, or out of the earth for the afflicted," Read the 30-day trial offer in this issue.

Missouri Horticultural Society Meeting

The annual meeting of the Missouri State Horticultural Society will be held at Neosho, December 20 to 22, 1904. The dates were decided at a meeting of the executive committee held in St. Louis recently.

I see the Sudduth pear is up for discussion again. I have three trees of this variety, which have shown little or no blight as yet, though I have lost several Duchess, Garber and Kieffer from blight. Sudduth trees have been planted three or four years, but have borne no fruit, nor have they shown any remarkable growth in size, but they have a very decided different habit of growth, with no forks.—E. C. Allen, Lone Jack, Mo.

Others Get $20 to $50 Every Week.

Elsewhere in this issue the Spaulding Nursery & Orchard Co. have an announcement for the benefit of our readers, which will interest everyone who has time for a little extra work during the coming winter season. This firm desires good salesmen from among our readers, and in order to secure them has a very interesting proposition to offer. Besides giving highest cash pay every week, salesmen are encouraged by the distribution of valuable premiums in addition. No previous experience is necessary, the company simply asking that its agents be honest men and women. See the announcement, and write today for full particulars, mentioning The Fruit-Grower when you write.

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Cut this ad. out and send to us, or on a postal card say, "Send me your Free Carpet Catalogue," and you will receive free by return mail, postpaid, full particulars how we furnish anyone, free, a big variety of large samples of Ingrain, Brussels and Velvet Carpets, you will get our Big Book of Carpets, beautifully illustrated and fully described, over 100 beautiful color plate samples of carpets reduced from 1¼-yard lengths.

THE BIG FREE BOOK shows an almost endless variety of Carpets, Art Squares, Rugs, Matting, Oilcloth, Linoleum, Shades, Curtains, Draperies, Upholstery, etc. Yard width carpet, 11c per yard and upwards; big rugs with fancy border and fringe to cover big parlors, $1.92 and up. We will explain why we can sell carpets at about one-half the prices others charge.

OUR FREE TRIAL PLAN will be fully explained. How we cut and make carpet in any shape to fit any room, our binding quality guarantee, our pay after received terms, quick delivery, color scheme, very little freight charges, all will be explained to you. Cut this ad. out and send to us or on a postal card say, "Send me your Free Carpet Catalogue," and you will get all this free, and you will get our very latest and most astonishingly liberal carpet offer, a carpet proposition never known of before. **WRITE TODAY and see what you get FREE by return mail, postpaid.** Address,

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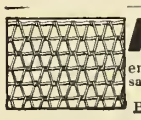

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MODELL LAW,
Trav. Pass. Agt., Kansas City, Mo.
C. H. SPEERS, Gen. Pass. Agt., Denver, Colo.

A Big Creamery Business.

In the October number of The Fruit-Grower appeared the advertisement of the Blue Valley Creamery, St. Joseph, Mo., which is deserving of special mention. This firm has been built up to enormous proportions—until it is, in fact, one of the largest, if not the very largest, butter-making concern in the United States. Its business extends for as far as 300 miles from St. Joseph. Its plan, in short, is simply this:

Farmers send their cream to the Blue Valley Company, instead of sending their unskimmed milk. Instead of sending a large can of milk, a separator is used, the cream secured and forwarded by express to St. Joseph. The skim milk is left on the farm, to be used as seems best. Express rates have been secured which will permit the shipping of cream for long distances, and the business has proven profitable to farmers, as is shown by the wonderful success of the company.

Not content with what it has been doing for the farmers, the Blue Valley Company has inaugurated a still better policy: That of paying cash for cream. Of course it is all right for a reliable firm to pay once a month, but there is nothing like the cold cash as soon as the cream is delivered.

Fruit-Grower readers can well afford to write to the Blue Valley Creamery Company for a full explanation as to its methods. The dairy business is a valuable adjunct to fruit-growing where the business can be carried on as is possible under the plan of this company. Address Blue Valley Creamery Company, St. Joseph, Mo., and ask for detailed information concerning this business. Mention The Fruit-Grower when you write.

Grape Crop of Central Iowa.

The grape crop of this and adjoining counties has been rather a record breaking crop, both in quantity and quality. Here, as well as many other localities in the East, two-thirds of the United States, 85 per cent of all the grapes planted are Concord, and soon as the grape shows color the growers make a rush to get the crop on the market as fast as they can, which is a great mistake, both to the grower and consumer, as the Concord is very deficient in flavor before it is ripe, and must be thoroughly ripe to attain its highest quality in richness; and, in fact, the same is true of all commercial grapes. With like care and cultivation of the grape in this vicinity as is given in Western New York, Northern Ohio and Canada this country could produce as fine a product as earth could produce any place. But it seems the greatest effort is exhausted in planting the plants, as the vines are left to care for themselves after once planted. The better than three years that the writer has lived in this vicinity, grapes have produced a liberal crop each year, and some growers claim the grape to be the best fruit to grow for money, and the profits could be largely increased in grape growing by planting more of the extreme early and late varieties, such as will ripen before and after the Concord. S. H. LINTON.

Des Moines, Iowa.

F. W. Sheffield, Ashland, Ore., writes that they have a full crop of peaches there; all have been marketed except Salway and Smocks. Apples about two-thirds of a crop, of very fine quality.

When you renew your subscription to The Fruit-Grower, do not forget that you can send four new subscriptions and your own renewal, all for $1. Why not get up a club and take advantage of this offer?

We are just starting out in the fruit business and cannot get along without The Fruit-Grower. I am taking four fruit papers, and yours is the best of all.—John W. Reed, Georges Creek, Ark.

Heavy Yield of Onions.

Mr. G. L. Noble, assistant general manager of the International & Great Northern Railway, Palestine, Tex., sends us a letter from Mr. R. B. Alexander, Jacksonville, Texas, giving report concerning a large crop of onions. Mr. Alexander and his brother planted forty acres of onions, and the yield was forty-five carloads, averaging 24,000 pounds to the car. At the time Mr. Alexander wrote, returns had been received from forty-one carloads, and he said the entire crop would bring from $26,000 to $28,000. Continuing, he says:

"Our expenses of growing the forty acres, including the crates, is about $6,500, which, you will see, leaves us the neat sum of $21,000 for our crop."

Mr. Noble says that the country through which the line passes is well adapted to the growing of fruit and vegetables, and he will be pleased to answer any questions concerning the country and its possibilities.

The apple crop of Colorado is reported the largest ever grown in that state.

Ralph S. Niebel, Fort Wood, N. Y., writes that he is in the army now, but expects to leave the service and engage in fruit-growing. Accordingly he sends $1 for three years' subscription, saying he cannot do without The Fruit-Grower.

"After having read a copy of the Western Fruit-Grower from cover to cover, I find it the best fruit paper I ever read. Being a fruit-grower of much experience, I find your paper is one that no practical fruit-grower can afford to do without. Inclosed find $1, for which send me the paper for three years."—Peter S. Trabert, Martinsville, N. Y.

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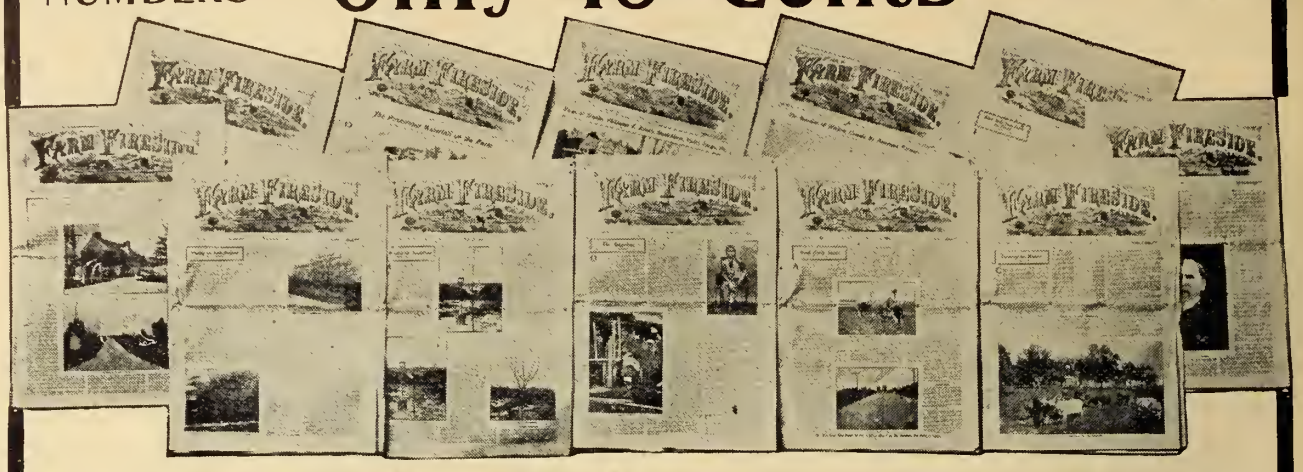

FARM AND FIRESIDE

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If you are thinking of buying land, you take a trial trip and go to see it. The cost is trifling compared with the information you gain. So if you want to see how much real, solid, valuable help, information and enjoyment you can gain in six months from FARM AND FIRESIDE, just take a trial trip. It will cost you almost nothing—only ten cents, twelve numbers. There is only one stipulation—the name must be one not now on our list.

More than that—did you ever hear the like!—if at the end of six months you are dissatisfied in any way—haven't had the worth of your money—we will refund the dime. Isn't that fair and square?

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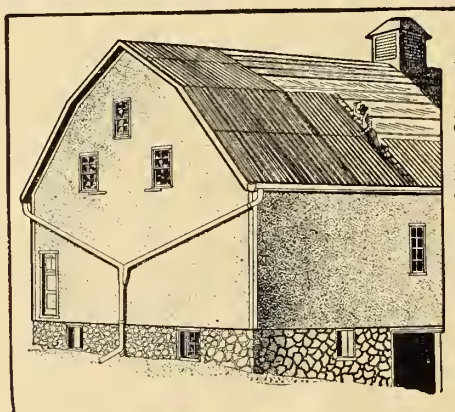

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$2.00 PER 100 SQUARE FEET

for our No. 10 grade, flat, semi-hardened. $2.10 per 100 square feet for corrugated steel roofing as shown in cut, V crimped or standing seam. $2.25 for brick siding and beaded ceiling or siding. Our catalogue contains full particulars of these materials. Thousands of buildings throughout the world are covered with this steel roofing, making their roofs

FIRE, WATER AND LIGHTNING PROOF.

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to all points east of Colorado, except Indian Territory, Oklahoma and Texas. Write today for further particulars. **Immediate shipment if you mail us your order at once.** Satisfaction guaranteed or money refunded.

Down Spouting, Eave Trough and Fittings, all kinds at low prices.

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Farming in Colorado, Utah AND New Mexico

The farmer who contemplates changing his location should look well into the subject of irrigation. Before making a trip of investigation there is no better way to secure advance information than by writing to those most interested in the settlement of unoccupied lands. Several publications, giving valuable information in regard to the agricultural, horticultural and live stock interests of this great western section have been prepared by the Denver & Rio Grande Railroad, which should be in the hands of all who desire to become acquainted with the merits of the various localities. Write

S. K. HOOPER

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From 1 to 40 H. P. Send for catalogue.
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Loosens rubber from jar and cap unscrews easily, no breakage. Postpaid 25cts. Agents wanted. Rhodes Mfg. Co., Grand Rapids, Mich.

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is as necessary to the healthy growth of grain as grain is to the health of man.

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GERMAN KALI WORKS
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Improved Seed Wheat

The Finest and Largest Yielding Varieties from Crops of 35 to 40 Bushels Per Acre.

Our stocks are complete in both standard sorts, besides new varieties of superior merit, all carefully recleaned and of finest quality.

Our Fall Catalogue

gives information of Seed Wheat, Winter Turf Oats, Rape, 1,000 Headed Kale, Barley, Rye, Alfalfa, Grass and Clover Seeds, Vegetable Seeds, etc. Mailed Free.

Write today for Catalog No. 42.

WOOD, STUBBS & CO., Seedsmen,
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50 Different Bulbs all for 30c.

By mail with cultural directions, for garden or pots.

1 Japan Lily.	3 Alliums, 3 sorts.
1 Golden Sacred Lily.	3 Tritelcia, white star.
2 Tulips, 1 d'ble, 1 single.	3 Ixias, 3 sorts.
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3 Cardinal Freesia.	3 Grape Hyacinths.
3 Belgian Hyacinths.	3 Giant Ranunculus.
3 Giant Crocus.	3 Spanish Iris.
3 Star of Bethlehem.	3 Oxalls, 5 sorts, mixed.
3 Giant Anemones.	5 Freesias, mixed.

All different colors, and fine flowering hardy bulbs.
Also **Free** to all who apply, our elegant **Fall Catalogue** of Bulbs, plants and seeds, for Fall planting and Winter blooming. Choicest Hyacinths, Tulips, Narcissus, Crocus, Lilies, Shrubs, Fruits and Rare Plants.
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Chilian Remedy Co., 61 G Street, Bushnell, Illinois

Strawberry Questions.

A long list of strawberry questions comes from the editor of The Fruit-Grower. Most of these I cannot answer. In some cases there are principles involved which may help us to reason out results, though what appears to be careful reasoning may sometimes lead us astray. In other cases I can only report the question, in the hope that some reader may be able to answer it from practical experience. We shall take the questions as they came.

1. Does early fall topping make strawberies earlier or later?

2. Does late fall topping make strawberies earlier or later?

This expression "topping" is a new one to me in this connection, and I am not sure that I understand what is meant by it. I take it to mean the fall covering or mulching. If that is the meaning, there is some theoretical reason for a slightly earlier crop from early fall mulching than from late mulching, provided the latter is delayed until after the ground is deeply frozen. The reason for this is that bare ground freezes more deeply than covered ground. If we wait until it is frozen deeply, then cover with a mulch, the mulch will prevent this from thawing out so rapidly as it would without the mulch, and since there will be a greater depth of frozen ground to be thawed it will be later in warming, and the plants will be later in starting. I am frank to say that I do not know from actual observation how important these factors are in influencing the actual date of ripening of the fruit. I doubt if it will make enough difference to be of practical value in marketing the crop.

3. Does early fall topping make the yield heavier or lighter?

4. Does late fall topping make the yield heavier or lighter?

On this question the reasoning is not so clear. First we should recall the function of the leaves. So long as the plant is active the leaves are manufacturing starch or plant-food. This plant-food, in the fall, is being stored up in the crowns for next season's growth. This process can go on only in sunlight. If, then, we cover the plant with a layer of mulch before its growth stops naturally, we put an end to this work of preparing and storing up plant-food sooner than it otherwise would cease. In so far, therefore, we have weakened the plant and reduced its chances for a heavy crop the succeeding year.

On the other hand, if conditions are unfavorable when winter sets in and the plant is subjected to severe freezing at the outset, or an alternation of freezing and thawing, its vigor may thereby be more seriously reduced than it would be by cutting short its period of growth somewhat. I suspect that experience would show the answer to this question to be a variable one, that under some conditions and in some seasons early covering may give the better yield, while under other condition the reverse may be true. We would like the results of observation from practical strawberry growers on this question. The men who have followed the business carefully for a series of years should be able to give us some observations of value, on all four of these questions.

5. How close to rows should cultivator run in the fall?

6. How close to rows should cultivator be run in the spring?

This will depend much upon the style of cultivator used. Our own practice is to use a fine spike-tooth cultivator or a hand wheel-hoe with cultivator teeth, and to define the edge of the row with the cultivator teeth. In other words, the runners are swung into the row by the teeth.

Plants may grow anywhere in the space not reached by the teeth and many of them are therefore just as close to where the teeth run as it is possible for them to be and not be torn out. This may not be the best for the plants, but it is the most convenient way to manage the bed. I have observed, too, that very often the strongest and most thrifty plants are just at the edge of the row, where their roots must be more or less disturbed from time to time by the cultivator teeth. Theoretically, the roots of a plant should be disturbed as little as possible, for the ultimate effect is the same as in coverlng the leaves, in that it stops or reduces the manufacture of plant-food. The strawberry plant, however, is a compact rooting plant, and will suffer less by close tillage than would many other plants.

7. How deep should cultivator be run in the fall?

8. How deep should cultivator be run in the spring?

In answering these I should like to ask another, namely, why should the cultivator be run at all? The principal objects of cultivation are to destroy weeds, to conserve moisture, and to hasten the activities which liberate and render plant-food available. Cultivation should be no deeper than is necessary to accomplish these objects. The best root-pasturage is that turned and mellowed by the plow. This is limited in depth. Each inch that is used in maintaining the earth-mulch which tillage provides, and which is necessary to prevent the escape of moisture, is an inch taken away from the roots. Roots can do little in the surface mulch. This must be sacrificed for the benefit of that which lies beneath. To liberate plant-food, or rather to favor its liberation, it is probable that this mulch need be only deep enough to prevent a crust from forming on the surface, since free access of air is all that is necessary. To conserve moisture the mulch need not be over one or two inches deep, especially in fall after the heat of summer is past and the rains of fall have begun. In spring, when moisture conservation is likely to be of the utmost importance, there is reason for a deeper soil mulch if no other mulch is to be provided. Even then a shallow mulch in good repair is much better than a deep one less well maintained. In garden culture I have observed that a shallow mulch kept fine with frequent passing of the wheel-hoe serves to hold moisture with perfect satisfaction.

The list of questions is too long to be taken up at a single sitting. We will endeavor to continue them at our next.

FRED W. CARD.

Kingston, R. I.

A Manual on the Peony.

The Fruit-Grower has received from Mr. C. S. Harrison, York, Neb., "A Manual on the Propogation and Cultivation of the Peony." This is a very timely book on a flower which is growing in favor very rapidly just now. Mr. Harrison has been an enthusiast on the subject of peony culture for many years, and is one of the charter members of the American Peony Society. His writings and his addresses at horticultural meetings have done much to popularize this flower, and his booklet will be well received. The manual tells how to grow the peony, for, while it will succeed and produce good blooms under neglect, it will repay one many fold for any extra attention given the plants; varieties are described and classified; directions are given for the multiplication of plants, for the preparation of cut blossoms, etc. In short, the manual supplies a want which has been felt for a long time, for it is the first complete manual which has been published since the return of the peony to popular favor. Being fully illustrated, it will help beginners to make a choice of varieties, especially as the recommended lists of a number of experienced growers are given.

The manual sells for 30 cents a copy, and will be sent postpaid to those who send this amount to C. S. Harrison, York, Neb. The Fruit-Grower hopes that many of its readers will send for this manual, and will make a start this fall with this most excellent flower—the flower for the masses as well as for the expert.

If your lamp-chimneys break, say MACBETH to your grocer—loud!

He knows.

You need to know how to manage your lamps to have comfort with them at small cost. Better read my Index; I send it free.

MACBETH, Pittsburgh.

DO THIS NOW

And I Will Give You a Pair of my Handsome

Gold Spectacles

Just send me five names of spectacle wearers and I will do this:—First, I will mail you my Perfect Home Eye Tester, free. Then (after you have sent me your test), I will mail you a

perfect-fitting five dollar family set of Spectacles for only $1, which will include a pair of my handsome Rolled Gold Spectacles, absolutely free of charge. This set will last a family a lifetime. I have never sold this family set for less than $5 and you could not buy spectacles anywhere near as good as these, even for $10 a *pair.* I am really charging you nothing for them now, as the dollar I will ask you to send with your test is only to help pay for this anuouncement. This very remarkable but honest offer (to send a five dollar set of spectacles for only $1) is open to everyone (my old customers also), but only for a short time, as I am just doing this to prove to every spectacle wearer in the world the following two very important facts: *First,* that my Perfect Home Eye Tester is positively accurate and reliable and with it you will be able to give your own eyes a perfect test in your own home and thereby I fit you with absolutely perfect fitting spectacles *by mail,* which could not be improved on even if you had undergone a persoual examination in any occulist's office, at a cost of $10 or more. *Second,* and most important of all, that on account of my latest improvements, my spectacles have become known the world over as the "Dr. Haux Famous Perfect Vision Reading and Sewing Spectacles" and they are now greatly superior to all others on the market. With them you will be able to thread the finest needle and read the smallest print, day and night, with perfect ease and comfort, just as you did in your younger days, and this, even if your eyes are so very weak now that you cannot read the largest print in this paper. In fact the large number of physicians who have for years and years used and recommended my spectacles to their weak-eyed patients will tell you that they are the most perfect fitting, clearest and best in the world today, and I will give you your dollar back and let you keep the five dollar set of spectacles also, if *you yourself* don't find them to be the finest, clearest and best you have ever bought anywhere at any price. I can only send one set to a family at this price, and this only for a short time, so write me *right now* for my free Perfect Home Eye Tester, and address my company as follows:—

DR. HAUX SPECTACLE CO.,
Haux Building, *ST. LOUIS, MO.*

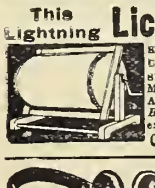
I WANT AGENTS ALSO And any man or woman (also storekeepers), without any previous experience whatever, can fit the weakest eyes with my Perfect Home Eye Tester, which is so simple that any one can work it and easily earn from $25 to $100 weekly selling my famous spectacles, either in their own homes, travelling or in stores. My agents need no license anywhere as I furnish the necessary documents with the Agent's Outfit

NOTE:—The above is the largest mail spectacle house in the United States and perfectly reliable

GET BIGGER PRICES

for your apples and fruit. Send them to market in our **Ventilated Shipping Boxes.** Customers can see how sound and fair they are. 9c each per hundred Ask for free booklet No. 18
Geneva Cooperage Company. Geneva, O.

This Lightning Lice Killing Machine



kills all lice and mites. No injury to birds or feathers. Handles any fowl, smallest chick to largest gobbler. Made in three sizes Pays for itself first season. Also *Lightning Lice Killing Powder, Poultry Bits, Lice Murder, etc.* We secure special low express rates. Catalog mailed free. Write for it
Chas. Schild, 40 Prospect, Cleveland, O.

Ruptured

Send for our RADICAL CURE TRUSS *On Free Trial*

"THE ONLY PERFECT TRUSS." Totally unlike anything made. You Pay When Satisfied. WE TAKE ALL RISK.
C. BUCHSTEIN CO., 608 R 1st Ave. S., Minneapolis.

RUPTURE CURED IN 10 DAYS
By a Scientific and Never-failing Process. No knife, no pain, absolutely no danger. IN TEN DAYS THE PATIENT IS SOUND AND WELL—cured to stay cured. Write for proofs, booklet, etc., FREE.
DR. C. H. RIGGS, 205-L, Altman Bldg., Kansas City, Mo.

Poultry Department

Special Articles on Poultry Raising.

The Fruit-Grower has arranged with Mr. T. E. Orr, secretary of the American Poultry Association, for a series of articles on the subject of poultry raising as an adjunct to fruit growing. Mr. Orr follows this plan in his work, and his articles will be read with great interest by every member of The Fruit-Grower family. These articles will be published in the January, February and March issues for next year, and will be followed by other articles on phases of poultry raising which will be particularly interesting to our readers.

This is only one of the features we are preparing for the numbers of The Fruit-Grower to be issued during the winter season—but we want special attention called to this series of poultry articles, which ought to be among the most popular we have ever published.

Value of Skim Milk for Poultry.

Skim milk at 15 cents per hundred weight may be fed to hogs with profit, provided it be fed in about the proportion of one pound of grain to from three to five pounds of milk. As a rule, when the proportion of skim milk is increased above the amount mentioned, gains are not made so economically. That skim milk is also an excellent food for poultry is generally known, but it is doubtful if its full value for this purpose is fully realized. To bring this matter before our readers in a tangible form it may be interesting to read of experiments that have been carried on at the Indiana Experiment Station; these tests show the value of skim milk and how it affects poultry in other ways aside from its direct effect in cheapening production. The test was carried on for the purpose of ascertaining the cost of producing a pound of gain when fed in connection with grain and other products as compared with grain alone. The prices of the foods were considerably below values of today, but this fact does not detract from the experiment, as anyone can make allowance for such differences. Oats were valued at 80 cents per hundred weight, corn meal at 80 cents per hundred weight, and shorts at 60 cents per hundred weight. Skim milk was valued at 20 cents per hundred weight, which is a higher valuation than is usually assigned to this product. Twenty chickens, ten of which were Plymouth Rocks and ten Houdans, were used in this feeding test. They were divided in such a manner that each breed was equally represented in the two lots and were so assorted that the lots were as nearly alike as possible at the beginning of the test. Lot 1 received no milk and lot 2 was fed all the skim milk they would drink. The experiment continued through a period of six weeks, with the following weekly gain per chicken:

Week.	Gain per chicken. Lot 1. Ounces.	Gain per chicken. Lot 2. Ounces.
First	2.0	4.0
Second	1.6	3.2
Third	2.3	3.1
Fourth	2.8	4.5
Fifth	1.3	3.7
Sixth	2.4	4.9
Average	2.7	3.9

From the above table it will be seen that the skim milk lot gained much more rapidly in weight than did the lot that was fed grain alone. This was partly due to the fact that those that were fed skim milk ate more grain than did those that had no milk. At the same time the skim mily lot made cheaper gains when taking into consideration the cost of the foods. In the lot that received no milk it cost 4½ cents to produce one pound of gain while in the other lot the cost was 3½ cents, or 1 cent less per pound. This, it will be seen at a glance, is a very important point; it brings out strongly the value of skim milk, and also shows that it will often pay to feed the chickens even if it has to be taken away from the hogs, especially so, if the latter are well started. Another point that should be noted in this connection is that the skim milk chickens were much healthier than were those that were fed on grain alone. It also appears from this experiment that a much narrower ration may be fed to chickens that to other farm animals.

Forcing Quick Moulting.

I had a number of hens this year that I was desirous of getting into condition for the show room, two in particular, but they were the most persistent layers I ever saw, and of course while laying they refused to molt, writes Chas. H. Rose. I watched them and wished they would quit, but they kept at it steadily. I should like to have kept a record of the eggs those two birds laid, but was not in a position to do so. They were both laying last December and January as pullets, and I have been unable to note a time when they were not laying since, although they must have taken a short vacation. I finally became convinced I would have to devise some plan to get them moulting. I took the two hens and put them in a dark place and fed them very little for a week—starved them, so to speak. They quit laying, of course, and I then began to feed all they could eat. Result, gain in flesh and loss of feathers, and now in less than two weeks they are nearly all feathered out and as white as snow.

Such a transformation in three weeks I have never seen. I will be able to show them in a short time and I certainly shall remember the experience and give it for what it is worth to the fraternity.—O. J. Farmer.

Feeding Turkeys in Early Fall.

As soon as the weather begins to turn cold and insect food becomes scarce an increased ration must be provided for the growing turkeys. In a recent government bulletin, T. F. McGrew advises a ration of wheat and corn. Do not feed too much at first, but gradually increase the supply until they have all they will eat. They should have freedom and all they will eat of wholesome, fattening grain to put them in fine condition for early market.

When finishing them it is not well to confine them. If they are fed each day at regular hours and in the same place it will be an easy matter to have them come three times a day to this place to be fed. Their longing for food being supplied they will take less violent exercise and instead of wandering over large areas will put on flesh rapidly. Turkeys that are poorly fed during the fall expend in searching for food considerable of the flesh they have gained.

In feeding turkeys for market it should be remembered that they sell for much more per pound than hogs or cattle, while the actual food cost per pound is but little, if any, more. It will always pay well to give growing turkeys all the grain they can eat. The Thanksgiving market is usually the best. It is only the early birds that are properly and liberally fed and kept growing from start to finish that are suitable at this time.

Old corn is better than new for heavy feeding, as the latter is apt to cause looseness of the bowels. If necessary to use new corn it should be introduced into the ration gradually. If the poults have gained a strong, well developed body by early fall they will be in fine condition for heavy feeding. As soon as they have become accustomed to grain they may be fed once or twice a day on ground oats and corn meal mixed with milk. This should be given in addition to plenty of wheat and corn. Feed each night and morning what they will clean up with a relish. Plenty of sharp grit and fresh water is also necessary.

Some people grow turkeys for a fancy market, feeding them chestnuts and celery seed during the last few weeks of fattening. This adds considerably to the expense and can only be used by those who sell their poultry for almost double the market price. Such feeding gives a pleasant flavor that adds value to the turkeys which are finished in this way and they find a market with customers with whom cost is a minor consideration.

RHEUMATISM

We have cured 100,000 sufferers and we believe

WE CAN CURE YOU

(Names from your locality upon request.)

We therefore guarantee to send first treatment *Free* on approval. If it helps you, pay us; otherwise keep your money. We take all risk, trusting simply to your honesty to pay if helped.

Money Refunded

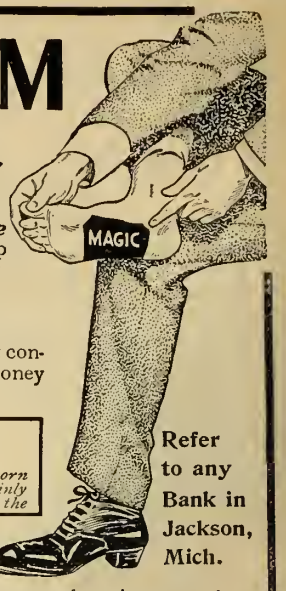
Read this guarantee. It must convince you of our great confidence in Magic Foot Drafts; also that we want no money we cannot honestly earn.

GUARANTEE

The Magic Foot Draft Co., Jackson, Mich., U. S. A.

Hereby positively agrees that **Magic Foot Drafts** *applied and worn in accordance with our simple instructions and directions, plainly printed on each pair, will cure* **any case of Rheumatism**, *and in the event of the failure to effect a* **cure, AGREES TO REFUND** *the entire amount paid immediately upon your statement that benefit has not been received.*

The Magic Foot Draft Co., Jackson, Mich., U. S. A.



Refer to any Bank in Jackson, Mich.

This should convince you that we refuse to take the slightest advantage of you in any way, because we send the first treatment without a cent of deposit. We ask no money unless we help you, and after continuing the treatment if we **DO NOT cure you we refund every dollar at once.** Can any fair minded person ask for more?

Every Sufferer of Rheumatism deserves the greatest sympathy and every help possible, and it is our earnest belief that we can cure nine out of ten cases. Those whom we cannot help we will not rob; we therefore make you the above guarantee which is backed by all of the banks in the city.

Your Foot drafts are a wonderful remedy. They cured me of my rheumatism. I feel no effects from the disease any more. I thought all these advertisements were no good, but my wife induced me to try your Drafts and I am so glad I did. I wish all my friends who suffer from rheumatism would just try the Foot Drafts.

G. W. HURSH, Chadwick, Mo.

Write us to-day and we will send you first treatment and a handsome booklet in colors which will tell you all about rheumatism. **Remember, you do not pay one cent unless we cure you** and then we trust to your honesty to judge whether we deserve the money or not.

The Magic Foot Draft Co.

04 Foot Draft Bldg., Jackson, Mich.

We Pay Cash

WEEKLY and want more salesmen EVERYWHERE. We furnish a better outfit (FREE) than any other nursery, **superior stock, lowest prices.** Our men succeed where others fail. Write for terms.

STARK BROS, LOUISIANA, MO., Fayetteville, Ark., Atlantic, Iowa, Dansville, N. Y.

One Million Dollars

Have Been Spent to Give Liquozone Free to the Sick.

When we purchased the rights to Liquozone, we decided to buy the first bottle and give it free to each sick one we learned of. We published the offer in nearly every newspaper in America, and 1,800,000 people have accepted it. In one year it has cost us over one million dollars to announce and fulfill the offer.

Don't you realize that a product must have wonderful merit to make such an offer possible? We have never asked a soul to buy Liquozone. We have published no testimonials, no physician's endorsement. We have simply asked the sick to try it—try it at our expense. And that is all we ask you, if you need it.

Kills Inside Germs.

Liquozone is not made by compounding drugs, nor is there alcohol in it. Its virtues are derived solely from gas—largely oxygen gas—by a process requiring immense apparatus and 14 days' time. This process has, for more than 20 years, been the constant subject of scientific and chemical research.

The result is a liquid that does what oxygen does. It is a nerve food and blood food—the most helpful thing in the world to you. Its effects are exhilarating, vitalizing, purifying. Yet it is a germicide so certain that we publish on every bottle an offer of $1,000 for a disease germ that it cannot kill. The reason is that germs are vegetables; and Liquozone—like an excess of oxygen—is deadly to vegetal matter.

There lies the great value of Liquozone. It is the only way known to kill germs in the body without killing the tissues, too. Any drug that kills germs is a poison, and it cannot be taken internally. Medicine is almost helpless in any germ disease. It is this fact that gives Liquozone its worth to humanity. And that worth is so great that, after testing the product for two years, through physicians and hospitals, we paid $100,000 for the American rights.

Germ Diseases.

These are the known germ diseases. All that medicine can do for these troubles is to help Nature overcome the germs, and such results are indirect and uncertain. Liquizone attacks the germs, wherever they are. And when the germs which cause a disease are destroyed, the disease must end, and forever. That is inevitable.

Asthma
Abscess—Anaemia
Bronchitis
Blood Poison
Bright's Disease
Bowel Troubles
Coughs—Colds
Consumption
Colic—Croup
Constipation
Catarrh—Cancer
Dysentery—Diarrhea
Hay Fever—Influenza
Kidney Diseases
La Grippe
Leucorrhea
Liver Troubles
Malaria—Neuralgia
Many Heart Troubles
Piles—Pneumonia
Pleurisy—Quinsy
Rheumatism
Scrofula—Syphilis
Skin Diseases
Dandruff—Dropsy
Dyspepsia
Eczema—Erysipelas
Fevers—Gall Stones
Goitre—Gout
Gonorrhea—Gleet
Stomach Troubles
Throat Troubles
Tuberculosis
Tumors—Ulcers
Varicocele
Women's Diseases

All diseases that begin with fever—all inflammation—all catarrh—all contagious diseases—all the results of impure or poisoned blood.

In nervous debility Liquozone acts as a vitalizer, accomplishing what no drugs can do.

50c Bottle Free.

If you need Liquozone, and have never tried it, please send us this coupon. We will then mail you an order on a local druggist for a full-size bottle, and we will pay the druggist ourselves for it. This is our free gift, made to convince you; to show you what Liquizone is, and what it can do. In justice to yourself, please, accept it today, for it places you under no obligation whatever.

Liquizone costs 50c, and $1.00.

CUT OUT THIS COUPON

for this offer may not appear again. Fill out the blanks and mail it to the Liquid Ozone Co., 458-464 Wabash Ave., Chicago.

My disease is.....

I have never tried Liquozone, but if you will supply me a 50c bottle free I will take it.

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M110 Give full address—write plainly.

Any physician or hospital not yet using Liquozone will be gladly supplied for a test.

300,000 ACRES
of Wild Land for Sale

In the Lower Peninsula
of Michigan

Michigan Lands are now CHEAP. The demand is rapidly increasing and they will soon double and treble in value.

Write for Circulars and Particulars.

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Grand Island Route

SHORT LINE BETWEEN

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Direct line to Hiawatha, Seneca, Marysville, Kan.; Fairbury, Hastings and Grand Island, Nebraska.

Quick Time to California and the Pacific Northwest

C. T. HUMMER, C. P. & T. A.
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Board of Trade, St. Joseph, Mo.

HOMESEEKERS' EXCURSIONS

If you want to visit Oklahoma, New Mexico, Arizona, Texas or any of the other sections of the Southwest in which fruit-growing is becoming such an important industry, investigate the low rate made by the

Santa Fe Route

ON FIRST AND THIRD TUESDAYS OF EACH MONTH.

The Santa Fe reaches every part of the Southwest, and with its frequent and well equipped trains and splendid roadbed, is best prepared to serve the public. For circulars or any desired information, address

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FIVE TRAINS

EACH WAY DAILY

The Missouri Pacific lines traverse a vast section of rich, undeveloped country, presenting varied conditions of soil and climate adapted to every character of product. Booklet on Missouri, Arkansas, Louisiana, Texas, Indian Territory, Kansas and Nebraska will be furnished free on application.

H. C. TOWNSEND

Gen. Pass. & Tkt. Agt. St. Louis, Mo.

OUR SPECIALTIES

APPLE, PEAR and FOREST TREE SEEDLINGS, APPLE AND PEAR GRAFTS for the planter as well as the nursery trade, also a FINE GENERAL STOCK OF TREES AND PLANTS at very favorable prices. Get our prices. General catalogue on application.

J. A. GAGE, Beatrice, Neb.

No More Blind Horses

For Specific Ophthalmia, Moon Blindness and other sore eyes, **BARRY CO., Iowa City, Iowa,** have a sure cure.

The Influence of Fertilizers on the Color of Fruits.

Among the essential points in the make-up of a fruit, when grown for market, one of the most important is good, high color. That color is largely influenced by certain elements of fertility in fertilizers that are applied to the soil, is well understood by practical fruit-growers. In rare instances, the soil is naturally well supplied with these elements, and the fruit grown on these soils is always large and highly colored, provided the matter of culture and pruning is attended to as it should be.

When a person sets out an orchard or berry patch, and after giving right culture and attending to the pruning in a scientific manner, the yield of fruit is unsatisfactory, and the color poor, he can make up his mind that the soil is either deficient in potash or phosphoric acid, or both. There are some very strong clay soils that are naturally rich in potash, but these are generally so low in altitude as not to be safe localities for fruits. The uplands and well drained lands are generally deficient in potash. Some of the grain and grape sections of the United States are already well provided with natural phosphates, but these localities are limited, and there are few lands that will not be benefited by a judicious application of potash and phosphoric acid.

I have made a careful study of the subject of fertilizers, and have made extensive observations in regard to the effect on the color of fruits of the different elements in commercial fertilizers.

On most well cultivated soils that have been in use for growing farm crops for years, a well-balanced fertilizer, made up of the different elements—nitrogen, potash and phosphoric acid—will generally give better results than a fertilizer that lacks one or more of these elements. The explanation is, that right farming, by regular rotation of crops, removes quantities of each of these elements. When barn manures alone are applied to the soil, the crop of fruit will be lacking in color in proportion to the amount and "richness" of the manure. It is well known that barn manure loses more potash and phosphoric acid in handling than of nitrogen. Nitrogen, when used to excess, causes an excess of growth of leaves and fruit, at the expense of color. If the proportion of nitrogen is too great to that of potash and phosphoric acid, the fruit will be colorless in proportion to the excess of nitrogen.

Sandy soils are especially deficient in potash, yet this class of soils are more generally used for small fruit-growing than any other, on account of the ease of cultivation. Sandy soils will generally respond to a liberal use of fertilizers rich in all the elements.

The office of phosphoric acid in a fertilizer is largely to perfect the seeds. An excess will generally cause earliness of maturity in the fruit. Potash has the effect of painting the cheeks red, or of whatever the color the fruit is of, in addition to making the framework of the fruit, and strengthening it. The writer has often observed that fruits grown on soils known to be rich in potash, are especially highly colored. Potash and phosphoric acid work hand in hand. The one perfects the seeds, the other the fruit or pulp.

In buying commercial fertilizers for fruits, the proportions of the different elements should run about this way: Nitrogen, 3 to 4%; potash, 10%; phosphoric acid, 10%.

Pulaski, N. Y. L. J. FARMER.

Notes.

It is claimed 300 to 400 carloads of apples will beshipped from Hutchinson, Kan., this season. Reno County, Kan., has a good crop of apples, therefore.

"I have learned much from The Fruit-Grower. I bought a forty-acre farm about a year ago, with no experience, and if it had not been for The Fruit-Grower I would have been at a loss.—Julius C. Schmidt, Mokane, Mo.

"The Western Fruit-Grower improves continually, and the 100 more subscribers I have secured for it, so far as I have heard expression—and I have heard most of them—speak only in its praise. I regard it as the most valuable journal for fruit-growers published in this section of the country." It makes us feel good to get letters like that from readers who not only appreciate The Fruit-Grower, but who show their appreciation by getting these good lists of new subscribers.

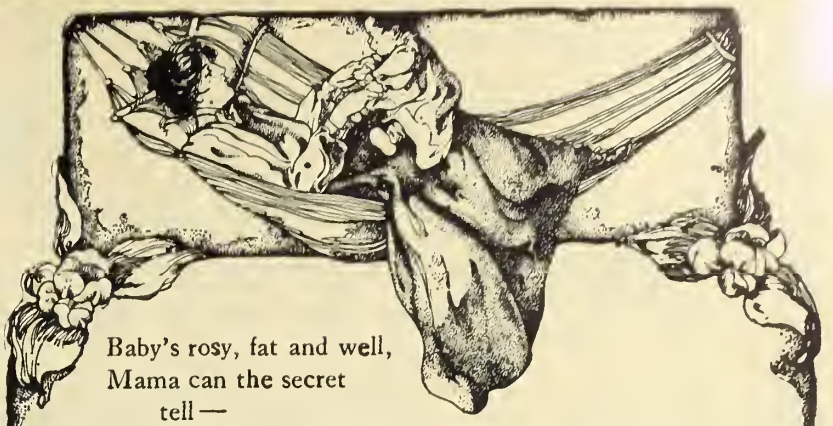
"The Western Fruit-Grower is the best paper ever printed for one who grows fruit. Please send me some extra copies."—John Dickens, Harrs, Ark.

The fruit exports of the United States for 1904 are expected to exceed $20,000,000. Ten years ago the exportations were less than $3,00,000 and twenty years ago they were less than $2,000,000. This indicates the growth of the fruit industry in this country.

"I wish I could influence every man in Southern Indiana to take The Fruit-Grower for I know they would learn many things they will never learn from any other literature."—W. C. Montgomery, Owensville, Ind.

"I enclose herewith $1 and also five names. I have donated a year's subscription to your most excellent paper to these five friends of mine for this reason: Your fruit paper is by far the most practical, and, what's more, one article alone is often worth $50."—John M. Sontag, St. Charles, Ill.

L. E. Beaudry, Anaconda, Mont., says: "I shall always take pleasure in recommending The Fruit-Grower as the best paper for fruit farmers to have in their homes. Everyone should have it to be successful with fruit."



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Mama can the secret
tell—
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Sun and lake and forest trees,
Boating, bathing, without measure,
Give each day the greatest pleasure.

Only $15 For the round trip to St. Paul and Minneapolis.

CHICAGO GREAT WESTERN RAILWAY

For complete information apply to
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414 Felix St., St. Joseph, Mo.

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No trouble. No crowding.
No confusion.

All Wabash Trains stop at the main entrance.

Uniformed employes to name reasonable private boarding houses.

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BETWEEN

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Thoroughly Equipped trains leave St. Louis and Chicago nightly (after arrival of incoming trains), arriving either city the following morning.
Equipment entirely new; lavish in design, elaborate in furnishings.
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DRS. THORNTON & MINOR, 1033 Oak St., Kansas City, Mo. and 3969 Olive Street, St. Louis, Mo.

STARK TREES BEAR FRUIT

A Record of 80 Years

Is Behind the Reputation of

STARK BRO'S NURSERIES & ORCHARDS CO

Capital Stock 1,000,000--all paid up

GENERAL OFFICES, NURSERIES and PACKING HOUSES, LOUISIANA, MO.

BRANCH NURSERIES: Starkdale, Mo. Fayetteville, Ark.
Portland, N. Y. Dansville, N. Y. Atlantic, Iowa

APPLE: An immense stock, perfect trees, both 1-yr. and 2-yrs. old. We are sole owners of BLACK BEN (Trade Mark) now acknowledged and recognized to be not only **distinct from Gano** but **superior**—the best apple of the Ben Davis family; and KING DAVID (Trade Mark) which **surpasses** Jonathan and Grimes Gol. in beauty and quality. Also CHAMPION (Trade Mark), DELICIOUS (Trade Mark), SENATOR (Trade Mark), L. RASPBERRY and all leading commercial sorts.

PEAR, STANDARD: Our stock includes such sorts as FAME, ALAMO, OZARK, LINCOLN (true Lincoln of Illinois,) etc., all valuable additions to the pear list. Also all the best old sorts such as BARTLETT, KIEFFER, GARBER, SECKEL and others.

PEAR, DWARF: DUCHESS, ANJOU, HOWELL, FAME, BARTLETT, etc.

CHERRY: One of the surest crops that can be grown and one that always brings good returns. We have a splendid stock of DYHOUSE, EARLY RICHMOND, **true** MONTMORENCY (the best of all), SUDA, WRAGG, GER. OSTHEIMER, etc.

PLUM: A full assortment. **GOLD** (Trade Mark) which has proved of wider adaptability than any other plum; GONZALES (scored 98 points in competition at World's Fair); Burbank's latest products—COMBINATION, LAST, FIRST; and such well known sorts as ABUNDANCE, BURBANK, WILD GOOSE, LOMBARD, RED JUNE, WICKSON, SHIRO, CLIMAX, SULTAN, DAMSON, POOLE PRIDE, etc.

PEACH: The largest and finest stock in the U. S. Our leaders are ELBERTA, BELLE OF GA., GREENSBORO, CARMAN, ALTON, ELBERTA CLING, KRUMMEL OCT. We offer all the new introductions of value such as EARLY BELLE (Hiley), ARP B'TY, EDGEMONT B'TY, FRANCES, LATE ELBERTA, OCT. ELBERTA, WADDELL, KLONDIKE, MAY LEE Cl'g, CHILOW Cl'g, RED BIRD Cl'g, and the **hardy Neb. productions,** RUSSELL, WOOLSEY and WRIGHT.

MULBERRY: If for no other reason, plant a few to attract birds from other fruits. We offer the splendid new sorts, ABUNDANCE EVERB'G, MONARCH WHITE, as well as BLACK ENGLISH, DOWNING, HICKS, NEW AMERICAN.

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APRICOT: SUNRISE, SUPERB, E'Y MAY, MOORPARK, ROYAL, ALEXANDER.

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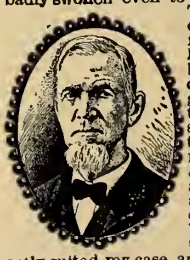

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The Western Fruit-Grower

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An Object Lesson in Spraying

Exhibits Made at Nebraska State Fair Worthy of the Most Careful Study

At the late Nebraska State Fair the apple exhibits presented some very striking lessons as to the necessity for spraying fruits. Prof. R. A. Emerson, horticulturist of the Nebraska Experiment Station, was so impressed with the exhibits that he made photographs of some of them, and sends them to The Fruit-Grower, with a statement concerning the same. The accompanying illustrations are made from the photographs, and Prof. Emerson's comment follows:

"The past three wet seasons have brought many Nebraska growers to see the importance of spraying. Many others still have the lesson to learn if we may judge from some of the exhibits made at the recent State Fair. When we see exposed for sale in the city markets, little, deformed, wormy, scabby apples, we are likely to assume that some orchardist or farmer has been working off his windfalls on the local trade, reserving his good apples for shipment. But what shall we say when we see such apples at a great State Fair entered for premiums and exposed to the public as an advertisement of the pomological possibilitites of a great state like Nebraska? Men do not bring their poorest things to the State Fair. The plate of apples entered for premium at the Fair is supposed to be the five best fruits of that variety that could be found in the orchard of the exhibitor. When, therefore, a plate of fruit as bad as the five Dyer apples shown in the accompanying illustration (Fig. 1) is seen at the State Fair, we begin to realize how prevalent the scab disease of apples has become in parts of Nebraska. The apple exhibit at the Nebraska State Fair not only showed how prevalent scab has become but it also illustrated well the value of spraying as a preventive measure. After seeing a few plates of apples from each of the several exhibitors, one could often guess the name of the exhibitor of a sample of fruit without reading the entry card. The apples from some orchards were invariably scabby except in case of varieties that are practically immune to the disease, while apples from other orchards were nearly free from scab, no matter what the variety might be. The main, if not the only, cause of the difference between the various exhibits, was the fact that some men spray their fruit while others do not. The difference between the sprayed and the unsprayed apples in the regular exhibits was but slightly less striking than in the case of the special spraying exhibit made by the experiment station. Had the general exhibits been labeled to show plainly whether the fruit had or had not been sprayed, there would have been little need for the special spraying exhibit.

"The exhibit made by the Agricultural Experiment Station showed very plainly the effects of spraying.

Sprayed and unsprayed apples shown side by side and plainly labeled attracted much attention. The difference between the two lots of fruit was so striking indeed (see Figs. 3 and 4) that some people were skeptical enough to suggest that the best apples from the sprayed trees and the poorest ones from the unsprayed trees had been selected. As a matter of fact, the fruits shown were perfectly fair avcrage samples from the sprayed and unsprayed trees. The only selection allowed was the throwing out of the very smallest fruits from both lots.

"Leaflets giving a summary of the results of the summer's spraying tests at the Agricultural Experiment Station, together with directions for preparing the necessary spray mixtures and recommendations as to when to spray and what to use, were distributed at the fair by an attendant in charge of the spraying exhibit."

In this leaflet particular attention was given to apple scab and cedar rust the latter fungus being very bad in parts of Nebraska where red cedar trees are very numerous. Concerning apple scab, the leaflet said:

"Two sprayings with Bordeaux mixture, the first just before the flowers opened and the second soon after the blossoms fell, prevented practically all injury from apple scab, both to the foliage and fruit. One spraying after the blossoms fell gave nearly as good results. The results in detail are as follows:

	Per cent of fruits free from apple scab	
	Sprayed	Unsprayed
Winesap (1 spraying)..	82	20
Maiden Blush (1 spraying)	96	35
Sweet June (1 spraying)	80	11
Sweet June 2 "	96	11
Ralls Genet " "	95	27
Jonathan .... " "	99	49
Average	91.	26

Concerning cedar rust the following is said:

"Two sprayings with Bordeaux mixture, the first at the time the 'apples' on cedar trees were becoming orange colored and gelatinous, and the second two weeks later, kept apple foliage practically free from cedar rust. The average number of rust spots per hundred leaves from sprayed an unsprayed trees were as follows: Sprayed—Wealthy 19, Jonathan, 13. Unsprayed—Wealthy 260, Jonathan 112."

The leaflet concludes with the following recommendation for thorough work in spraying: 'Spray thoroughly or not at all! If less than two or three gallons of spraying mixture is used for a large apple tree, the job has not been thoroughly done. It costs less than five cents to spray an apple tree once. Apple scab, cedar rust and codling moth are kept in check by the same sprayings. Bordeaux mixture adheres to apple foliage for months. Ra'n does not wash it off quickly when it has once become dry. We can afford to spray and spray thoroughly. Spray your trees next year and bring clean fruit to the fair!"

This experience at the Nebraska State Fair has likely been duplicated at every other fair held in this country this year. It is certain that fruit was placed on some of the exhibit tables at the World's Fair which were infected with apple scab. It would seem, therefore, that there is great need for just such exhibits as the Nebraska Experiment Station made at Lincoln.

Fig. 1.—Dyer apples, shown at the Nebraska State Fair. The fact that such scabby fruits as these are shown at a state fair indicates something of the prevalence of apple scab in some parts of Nebraska.

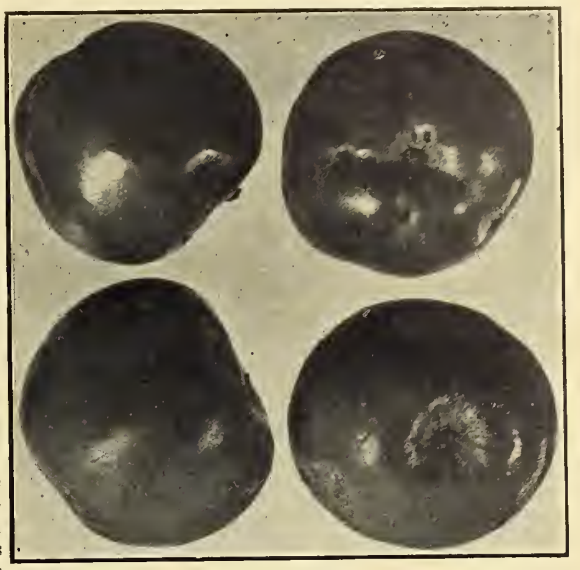

Fig. 2.—Northern Spy apples shown at the Nebraska State Fair from sprayed and unsprayed orchards.

❦ ❦ ❦

The annual meeting of the Central Illinois Horticultural Society will be held at Champaign, Ill., Nov. 29 and 30, 1904. The meeting will be held in the Agricultural building at the University of Illinois, and is expected to be one of the best the society has ever held.

❦ ❦ ❦

Yes, sir, I want The Fruit-Grower continued. It is neat; it is attractive; it is good. Send a few samples for distribution. I save every copy of my own.—B. J. Ellmore, Covington,

❦ ❦ ❦

Great credit is due your people for the enterprise, as well as the ability, displayed in the production of the best paper of its kind in the country. —M. Garrahan, Kingston, Pa.

Fig. 3.—Winesap and Maiden Blush apples sprayed once with Bordeaux mixture. These apples were practically free from scab. Nebraska Agricultural Experiment exhibit at Nebraska State Fair.

Fig. 4.—Winesap and Maiden Blush apples not sprayed. Note the scabby appearance. Nebraska Agricultural Experiment Station exhibit at the Nebraska State Fair.

Individuality of Trees.

In the report of W. T. McCoun, horticulturist of the Central Experiment Farm of the Canada Department of Agriculture, he gives the yield of a number of apple trees of different varieties, wh'ch goes to show that there is a great difference in the bearing qualities of individual trees. This is a matter which has interested fruit-growers everywhere within the last few years, and Mr. McCoun's report of observations will be read with interest. He says:

The stock breeder has for a great many years paid especial attention to the individual animal in breeding for size, shape and markings, and for flesh and milk. In the writer's judgment, just as satisfactory results should be obtained in improving the strain of a variety of fruit, and although comparatively little has yet been done by horticulturists in this respect with fruits, much has been accomplished with flowers and vegetables. It is now recognized by the best authorities that each bud of a tree has individual characteristics which separate it from all other buds, and although the differences in buds are in most cases so slight that it is impossible to detect them, yet in some instances they may be quite marked.

Fruit growers have often noticed that one tree or bush is more productive than another, or bears larger, more highly colored or better flavored fruit. Take as an example the Fameuse apple. When this excellent old variety first bore fruit several hundred years ago one tree produced all the Fameuse apples there were at that time. Some apples on that original tree were probably not as highly colored as others, although exposed to the same amount of light. Some branches, probably, were more heavily laden than others, although there was no apparent reason why they should be. On some branches the fruit was larger though as well loaded as others. In time scions were cut from that tree and grafted, and a new generation of Fameuse trees was the result. Were the trees produced identical in vigor and productiveness, and was the fruit borne on each of them exactly similar in every respect? We believe that they were not. Every bud on every tree of every generation of Fameuse apple trees had individual characteristics, and although the differences were rarely enough marked to see, there were doubtless always fine shades of variation. It does not need a great stretch of imagination to see that if such changes can be made, as have been made in live stock, flowers, vegetables, and other economic plants, by careful selection, that if, when that first generation of Fameuse apple trees began to bear, scions had been taken from the most productive tree bearing the finest colored apples of the best size, that in the next generation of trees there would be at least a slight improvement, and if this selection had been carried on down to the present time we should have a better Fameuse than we have today. This selection, however, has not been carried out, and about all that has been done, in a few cases, is to graft from trees bearing highly colored fruit, but as yet we have practically no reliable information in Canada as to whether the results have been satisfactory. In small orchards, where the fruit is intended for home consumption, the individuality of different trees is more noticed than in large orchards, where the record of each tree is not so prominently before the grower. The effect of the stock on the productiveness of the tree and characteristics of the fruit is not yet well understood. Whatever may be the influence of the stock there is no doubt that each variety maintains most of its individual qualities.

At the Central Experimental Farm the yields are kept from each individual tree in the orchard, making it possible to tell at the end of a certain period just what each tree has borne. It has been found that trees planted at the same time, and growing under practically the same conditions as other trees of the same variety, vary widely in productiveness. Some trees also bear a medium crop every year, while others bear a heavy crop every other year.

In the following table will be found the yields of trees of four varieties of apples for the past six years, with the total yield per tree for that time. It will be seen that some trees have yielded two to four times as much as others. The yield is given in gallons rather than in barrels, to avoid large fractions.

It is worth mentioning that of the seventeen Wealthy trees in the table only seven bore fruit last year, and of those that fruited, the tree which had borne regularly during the past four years, again bore a good crop in 1903.

APPLES—WEALTHY.
(Planted 1896.) Yield in Gallons.

Tree	1899	1900	1901	1902	1903	Total
1	1.0	2.25	2.75	15.0	....	21.00
2	2.0	.5	2.5	12.0	....	17.0
3	1.75	12.0	2.25	8.0	....	24.0
4	9.0	2.25	15.5	20.5	27.0	74.25
5	7.5	6.5	7.75	23.0	7.5	52.25
6	3.25	6.5	3.5	24.0	....	37.25
7	7.5	1.0	10.0	19.0	16.0	53.5
8	...	8.5	.5	21.5	....	30.5
9	...	11.25	.25	27.5	....	39.0
10	1.0	12.25	....	30.0	....	43.25
11	1.25	11.25	....	21.5	....	34.0
12	...	7.5	....	18.5	2.0	28.0
13	4.25	6.25	4.5	20.0	.5	35.5
15	...	2.25	3.5	21.5	8.5	35.75
16	3.0	2.25	4.0	22.5	4.5	36.25
17	...	2.0	1.0	22.5	....	25.5

APPLES—McMAHON WHITE.
(Planted 1888.) Yield in Gallons.

Tree	1898	1899	1900	1901	1902	1903	To'l
1	62.0	....	83.0	2.0	147.0	1.5	295.5
2	42.0	1.0	6.0	12.5	98.0	23.0	182.5
3	32.0	29.0	49.0	18.0	55.0	63.5	246.5
4	35.0	....	34.5	4.0	63.0	34.0	170.5
5	...	37.5	55.0	49.0	....	61.0	210.5
6	29.0	4.5	46.0	.5	69.5	43.0	192.5
7	.5	9.5	19.5	4.0	19.0	39.5	92.0
8	7.0	9.0	27.0	9.0	53.0	15.5	120.5

APPLES—McINTOSH RED.
(Planted 1890.) Yield in Gallons.

Tree	1898	1899	1900	1901	1902	1903	To'l
1	17.5	26.0	37.0	6.5	71.5	94.0	252.5
2	1.0	9.5	10.5	1.0	37.5	31.0	90.5

APPLES—PATTEN'S GREENING.
(Planted 1892.) Yield in Gallons.

Tree	1898	1899	1900	1901	1902	1903	To'l
1	27.0	2.0	35.0	1.5	71.0	15.0	151.5
2	2.0	6.0	14.0	19.0	24.0	55.5	120.5
3	2.0	31.0	1.5	40.5	22.0	67.0	164.0
4	13.0	.0	6.5	.0	12.0	15.0	46.5
5	1.0	.0	19.0	.5	17.5	21.0	59.0

Experiments are now being conducted at the Experimental Farm by top grafting with scions from productive and unproductive trees, to determine how far the productiveness and unproductiveness of the trees is constant. Root grafted trees are also being grown for this purpose.

In order that fruit growers might learn, by personal experience, of the great variation in individual trees of the same variety, a co-operative experiment was begun this year. On application to the horticulturist, six pieces of zinc, bearing six consecutive numbers were sent to each person. These pieces of zinc when received were to be attached to six bearing trees of a single variety of apple, pear, plum, or peach, the trees to be the same age, and growing under the same conditions of soil and culture. A record of the yield of each tree was to be kept for at least five years. A number of fruit growers in different parts of Canada have already joined this co-operative test, and it is hoped that more persons will desire to take part in this experiment.

If scions from productive trees will produce productive trees when grafted, and if scions from unproductive trees will produce trees which are poor croppers, it is very important that scions should be taken from the best yielding trees. As grafting will, in all probability, become much more general among fruit growers in the near future, the importance of knowing that trees vary widely in productiveness is easily seen.

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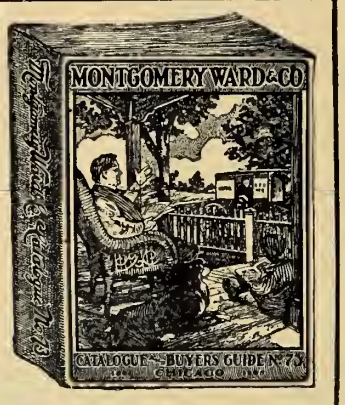

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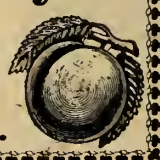
are now shipped to all parts of the country. Their popularity is growing year by year. It's because we produce superb stock, rooted to make rapid growth from the start; strong, vigorous bodies, bred for strong fruiting. All seasons' varieties, all ages of trees. We pack all fruits so we can guarantee delivery in A No. 1 condition everywhere.

The Peach our Specialty.

Due to a favored climate and natural peach tree soil. No region in the world can excel our peach tree stock. We urge the **Ray variety. Tested 16 years. A record bearer and very choice.** All leading varieties. Quality considered, our tree prices are nowhere duplicated. Grapes, strawberries, asparagus, etc. Send for new catalogue just issued. A great book for the fruit growers.



Harrison's Nurseries, Box 32, Berlin, Md.

Renew Your Subscription Today

While The Fruit-Grower's subscription list grows every month in the year, the greatest increase is made from December to May. This is when farmers have time to read, and this is when they make plans for next season's work. Remember this, when you renew your subscription, and get up a club of new subscribers to send with your renewal. Remember, you can send four new names and your own renewal, all for $1.

The Fruit-Grower is making great preparations for the coming season, and has been put to extra expense. Will you not renew your subscription at once? Look at the date on your wrapper, and if your time is out, *renew today.* Your renewal will help us greatly, and we count on your help.

THE FRUIT-GROWER CO., ST. JOSEPH, MO.

To Prevent Overloaded Trees from Breaking.

R. L. Keithly, New London, Mo., writes:

"In compliance with the request that The Fruit-Grower readers send report of what they have learned recently, from actual experience, I want to tell you of my plan to prevent trees which are overloaded with fruit from breaking down. In previous years I have used props of various kinds which were failures. They were such as forks, boards, rails, etc., and I found that the trees broke very badly, and often the props were knocked down. My plan is as follows, and from actual experience I know it to be a good one:

"When the fruit is about two-thirds grown, I take a strong twine (binder twine answers the purpose), fasten it to one of the limbs, close down to the body of the tree, and then wrap it round and round the limb, like threads on a screw, until I get near the top; then I come down with the twine in the same manner. If the tree is large, I make an inner wrapping to protect the inner limbs. By this plan you can protect each limb in different places, so the bearing will not come heavy at any one point."

A New Insecticide.

We have received a circular telling of a new preparation which will be placed on the market the coming season. It is called Con-Sol, and is intended for the destruction of the San Jose scale. Con-Sol is a concentrated solution of lime, salt, and sulphur, prepared by a process discovered by a German chemist. It is said to be in every way as effective as the ordinary lime, salt and sulphur mixture, but is prepared ready to mix with water and use, without the labor of cooking. This new preparation can be used in any spray pump, and is easily applied. It has been well tested and has proven its value. Among those who have tested it satisfactorily is Mr. Charles H. Miller, of Gerardstown, W. Va., one of the largest orchardists in that state.

Con-Sol will certainly prove a valuable thing for fruit-growers who want to spray for San Jose scale in large or small orchards, or on shrubbery, etc., in city yards. In fact, from past experience, it may become generally used by growers as a winter spray, to destroy the spores of fungi, since lime, salt and sulphur has proved of much value in this work.

The American Horticultural Distributing Company, Martinsburg, W. Va., manufacture this new preparation, and have an exhibit in the Horticultural building at the World's Fair, where samples of Con-Sol can be seen. Circulars describing this new insecticide will be sent free to those who address the manufacturers. Simply ask for the circular describing Con-Sol, as mentioned in The Western Fruit-Grower for November, 1904.

A Hustler for Subscriptions.

One of the best subscription hustlers among The Fruit-Grower Family is Mr. B. E. Moody, Excello, Mo., proprietor of the Excello Nursery and Fruit Farm. We have not kept a record of the subscriptions sent in by Mr. Moody, but the total is very large, for every week or so he sends from ten to twenty subscribers. We are sure that every member of The Family can get one or more new subscribers, if neighbors and friends are asked to subscribe. We are going to have some very fine issues of The Fruit-Grower during the coming winter months and we hope every reader will strive to get his clubs of new subscribers in early, so as to have the benefit of these special features. We believe the issues for January to April, 1905, will each be worth the price of a year's subscription, and that our readers are justified in saying to new subscribers that if they do not receive their money's worth in these four months, their subscription will be refunded them.

Now, will not everyone try to get at least one new subscriber? Or, better, five for a dollar? Now is the time to do this work.

Notes.

Berry box manufacturers are already squinting at higher prices for box material next spring. The question of fruit packages is becoming a very serious matter.

There was recently sold in London a very expensive apple, if the newspapers are to be believed. It was a very large fruit, and on one side bore a striking likeness of King Edward. It is supposed this likeness was "painted" by the sun through a covering which protected part of the fruit from the rays of the sun, while exposing other parts. The apple brought $12.50.

The prices at which apples are being sold at retail on the Missouri River markets do not indicate that very much of the heavy crop of apples grown in the East is coming West. Good Colorado Jonathans are retailing at 60 cents a peck, $2.25 per bushel box. Of course, when apples get this price the number of consumers is greatly lessened, but those who want good fruit have to pay this price or go without. Perhaps the Eastern fruit will arrive later, and ordinary mortals can have an apple occasionally.

Sick Ones and Suffering

I will gladly give you a full dollar's worth of my remedy to test.

There Are No Conditions

Nothing to deposit. Nothing to promise. The dollar bottle is free. Your Druggist, on my order, will hand you a full dollar's worth and send me the bill.

No one else has ever tried so hard to remove every possible excuse for doubt.

In eighty thousand communities—in more than a million homes—my remedy is known. There are those all around you—your friends and neighbors, perhaps—whose suffering it has relieved. There is not a physician anywhere who dares tell you I am wrong in the new medical principles which I apply. And for six solid years my remedy has stood the severest test a medicine was ever put to—I have said "If it fails it is free"—and it has never failed where there was a possible chance for it to succeed.

But this mountain of evidence is of no avail to those who shut their eyes and dose away in doubt. For doubt is harder to overcome than disease. I cannot cure those who lack the faith to try.

So now I have made this offer. I disregard the evidence. I lay aside the fact that mine is the largest medical practice in the world, and come to you as a stranger. I ask you to believe not one word that I say till you have proven it for yourself. I offer to give you outright a full dollar's worth of my remedy. It is the utmost my unbounded confidence can suggest. It is open and frank and fair. It is the supreme test of my limitless belief in

Dr. Shoop's Restorative

Only one out of every 98 has perfect health. Of the 97 sick ones, some are bed-ridden, some are half sick, and some are only dull and listless. But most of the sickness comes from a common cause. The nerves are weak. Not the nerves you ordinarily think about—not the nerves that govern your movements and your thoughts.

But the nerves that, unguided and unknown, night and day, keep your heart in motion—control your digestive apparatus—regulatee your liver—operate your kidneys.

These are the nerves that wear out and break down.

It does no good to treat the ailing organ—the irregular heart—the disordered liver—the rebellious stomach—the deranged kidneys. They are not to blame. But go back to the nerves that control them. There you will find the seat of the trouble.

There is nothing new about this—nothing any physician would dispute. But it remained for Dr. Shoop to apply this knowledge—to put it to practical use. Dr. Shoop's Restorative is the result of a quarter of century of endeavor along this very line. It does not dose the organ or deaden the pain—but it does go at once to the nerve—the inside nerve—the power nerve—and builds it up and strengthens it and makes it well.

Don't you see that THIS is NEW in medicine? That this is NOT the mere patchwork of a stimulant—the mere soothing of a narcotic? Don't you see that it goes right to the root of the trouble and eradicates the cause?

But I do not ask you to take a single statement of mine—I do not ask you to believe a word I say until you have tried my medicine in your own home at my expense absolutely. Could I offer you a full dollar's worth free if there were any misrepresentation? Could I let you go to your druggist—whom you know—and pick out any bottle he has on his shelves of my medicine were it not UNIFORMLY helpful? Would I do this if I were not straightforward in my every claim? Could I AFFORD to do it if I were not reasonably SURE that my medicine will help you?

Simply Write Me

But you must write ME for the free dollar bottle order. All druggists do not grant the test. I will then direct you to one that does. He will pass it down to you from his stock as freely as if your dollar laid before him. Write for the order today. The offer may not remain open. I will send you the hook you ask for beside. It is free. It will help you to understand your case. What more can I do to convince you of my interest—of my sincerity?

For the free dollar bottle order address Dr. Shoop, Box 3361, Racine, Wis. Any one of these six books will be sent free on request.

Book 1 on Dyspepsia.
Book 2 on the Heart.
Book 3 on the Kidneys
Book 4 for Women.
Book 5 for Men.
Book 6 on Rheumatism.

Mild cases, not chronic, are often cured with one or two bottles. For sale at forty thousand drug stores.

Free Trial
At Your Home

To actual readers of The Western Fruit-Grower, honest responsible farmers, we make the following special offer:

Order our Victor Royal Talking Machine and one dozen Victor Records. (Lowest net cash price everywhere, $20.00.)

If, after twenty-four hours trial *at your home,* you are satisfied, send us $5; balance of $15 payable in six monthly installments of

$2.50 a Month

Or, if not satisfactory, return machine at our expense, **we charge you nothing.**

What we are offering is the genuine Victor Royal Talking Machine, with one dozen Victor records, and you know that the Victor is the best there is.

You cannot buy this outfit anywhere spot cash for less than $20.00. Twenty Dollars is the price everywhere. **Buy direct from us** and you can get it on small monthly payments without one cent extra charge.

REMEMBER—No money in advance; no C. O. D. shipments; no guarantees required from third parties; no leases or chattel mortgages nor interest on payments. You own the instrument when you accept it, and we will trust any responsible farmer or trustworthy person to pay as he agrees.

Don't be misled into buying some toy machine offered at a ridiculous price. Get a genuine Victor and you have the best. There are imitation machines that have to be turned by hand and other cheap instruments that hardly give a sound.

Our Victor Royal Talking Machine has an oak cabinet, spring motor, and the **very best reproducer made;** will play any seven or ten-inch disc record and play it beautifully.

When you get the Victor, you get the instrument that you can always be proud of. You can entertain your friends or give a concert at any time, for anybody can play this machine.

Don't You Want to Hear the Machine Talk, Laugh, Sing and Play—all in Your Own Home?

You may select your own records from the best solos, duets, quartettes, choruses, band and orchestral pieces, comic recitations and latest popular songs.

WRITE TODAY FOR FREE COMPLETE CATALOGUE and tell us what records you want.

The Talking Machine Company

Department K, 107 Madison Street, CHICAGO, ILLINOIS

FREE to those who already own a Victor: A package of 25 of our new soft tone needles absolutely free, prepaid. These needles give a beautiful superior soft non-scratching sound. Try them! Write for free sample package.

We prepay charges on Victor and Edison Records. Get our free list of 2,000 latest Records—songs, operas, etc., etc.

The Best Trees and Plants Grown

are now labeled with a **Red Tag** which guarantees the quality of every tree shipped from the Phoenix Nursery Co.

Look for this Tag on every Phoenix Tree. It is your protection and our guarantee.

Genuine Phoenix Trees and Plants

bear this **Red Tag.** We caution our customers to reject any stock represented as "Phœnix grown" that does not bear this **Red Tag.** Any stock offered without it is spurious. Now is the time to order for Spring planting. Our immense stock includes the best of the new varieties, all the old standards, and is guaranteed strong, healthy and true to name. We have been in the nursery business for fifty-two years and have the largest trade in the United States. Write for the Phœnix Fall Catalogue. You can deal with us through the mails more satisfactorily than through agents and at half the cost. Our name and reputation guarantees the best. *Write us to-day.*

PHOENIX NURSERY CO., 370 Park St., Bloomington, Ill.

The MOUNT HOPE NURSERIES of LAWRENCE, KAN.

Solicit correspondence and list of wants from all prospective purchasers of nursery stock. Complete line of Fruits and Ornamentals. **Apple and Peach Orchards a Specialty.** Good local and traveling salesmen wanted. Liberal Pay. Address, **A. C. GRIESA, Prop.**

Kill the Wooly Aphis

This is the insect which works on the roots of apple trees, causing the death of thousands of trees yearly. Wooly Aphis can be readily destroyed by spreading tobacco dust about the roots of trees. In addition to killing the insects, tobacco dust is a valuable fertilizer—indeed, it is worth what it costs as a fertilizer alone.

We Sell Tobacco Dust in Any Quantity

Also Fertilizers of All Kinds—The Anchor Brand

WRITE FOR PRICES

MAYER FERTILIZER AND J. COMPANY

BULWER AND ADELAIDE AVENUES. ST. LOUIS, MISSOURI.

Apple-Raising in Reno County, Kansas

A representative of The Fruit-Grower, in company with E. H. Favor of the Missouri Experiment Station, recently visited some of the orchards near Hutchinson, Kan., where a very heavy crop of apples was being harvested. Leaving Topeka at noon on one of the magnificent trains on main line of the Santa Fe railway, we were in Hutchison for supper, and next morning we started for the orchards. Five miles out from Hutchinson, between a small creek and the Arkansas River, are the orchards of this section. Some of these orchards are young, just coming into bearing, but of the first to plant catalpa trees in quantities as a forestry enterprise.

At the time of our visit the Yaggy orchards were being shorn of their fruit. The apple crop was very large, but most of the trees on this farm are comparatively young. Grimes Golden and Jonathan apples had been picked and stored, and work had just begun upon the later varieties. We were surprised to find the fruit singularly free from scab, for in Eastern Kansas and Missouri this disease had been very destructive, and in places had almost entirely defoliated the trees. But the apples in the Arkansas valley were as smooth as could be, and the foliage on the trees was clear and healthy. Nor was the work of the codling moth so much in evidence, although but few of the or-

OLD TREES IN ORCHARD OF MR. COLE. THEY NOW STAND TOO CLOSE, BUT NOTE THE GREAT TRUNKS.

others have been planted for nearly twenty-five years. The orchards are planted on land which is sub-irrigated, and water can be found at a depth of five to six feet, and even when the Arkansas river is nearly dry, there is an abundance of water in the soil beneath these apple trees.

During our stay we were guests at the Yaggy plantation, which is the largest of the apple orchards. This farm, or "plantation," is owned by L. W. Yaggy and his sons, E. E. and A. F. Yaggy. The farm consists of about

APPLE PICKER, WITH STYLE OF BAG USED ON YAGGY PLANTATION.

1,500 acres of land, 800 acres being planted to apples and 500 to catalpa trees—for the elder Yaggy was one

chards had been sprayed. To show how smooth and sound the fruit was, it may be said that in packing 6,000 bushels of No. 1 Jonathan and Grimes Golden, the Messrs. Yaggy had found only 400 bushels of No. 2 fruit. And the cull pile was remarkably small, considering the quantity of fruit which had been packed. No use was made of the culls, the apples being dumped in a corner of the orchard, and at the time of our visit the comparatively small pile of culls represented the refuse apples from 10,500 bushels which had been packed at that time.

"In regard to our culls," said the elder Yaggy, "I will say that the disposition we have made of them is not the best possible use to which they could be put. But we are very busy at this time, and simply dump our culls here. We notice the effects of this plan in the apples picked from the part of the orchard near this cull pile. This season, for instance, we find decidedly more codling moth in apples grown near the place where we piled our culls last year than we have found in fruit grown in parts of the orchard more remote. The culls ought to be destroyed in some way, but when we are getting our apples into storage we have not the time to do the work."

All of the Yaggy fruit, or practically all of it, is packed in boxes. The standard bushel box is used, similar to the ones used by the growers in the Pacific Coast states, but the methods of packing are not the same. The Western growers pack their fruit in layers and rows, as was explained in The Fruit-Grower last month. The Yaggy fruit is faced at the top, the stem ends of the apples being placed uppermost, and the rest of the contents are placed in the box regardless of rows. By adopting this plan the packers are saved the labor of sorting the fruit into various sizes, and at the same time the boxes actually contain more fruit than where the apples are packed in rows and layers.

"I believe the box is the coming apple package," said Mr. Yaggy, "and we adopted it for our use at the very outset. This season a buyer told us he wanted some of our fruit, but his trade would not use the box as an apple package. We simply told him they would have to use the box if they bought our fruit—and they have used the box without a murmur. The box has many advantages over the barrel as a package, as has been explained in The Fruit-Grower many times. Among the ones which appeal particularly to us is the fact that the box is a cheaper package, and we put up better fruit. This season No. 1 barrels were quoted to us at 40 cents each. We buy the boxes for less money, for they cost us 11 cents each, made up, so that for three bushels of apples we get a package to contain them (three boxes) for 33 cents, whereas a barrel will cost 7 cents more. Still another point in favor of the box is the fact that our storage houses discriminate in favor of the box. Storage for boxed apples costs 10 cents a bushel for the season. Storage for apples in barrels costs at the rate of 15 cents per bushel for the season."

While at the packing shed we noticed that the pickers use a bottomless bag in which to place the apples as they are pulled from the tree. This is similar to those which have been described before, but Mr. Yaggy, who is a most ingenious man, has added several features which have improved the bag. We believe a Hutchinson firm now manufactures these bags and has placed them on the market. Still another feature here which attracted our attention was the arrangement of the wagon frames for the wagons used in hauling the fruit from the orchard to the packing shed. As the apples are picked from the trees they are placed in bushel boxes and hauled to the shed. No boxes are placed on others containing fruit, but a platform has been prepared which will carry almost as many boxes under the wagon frame as over it. The load is thus increased, without any bruising of the fruit, nor does any box have to be lifted to any considerable height.

Mr. Yaggy very kindly drove us through not only his own orchard, but through those of several of his neighbors. In driving out through the younger portions of the Yaggy orchards he called our attention to the windbreaks of cottonwood trees, which are planted through the orchard at intervals of forty rods. These trees have grown to a great height, and furnish effective windbreaks. These windbreaks are very essential in this section, for the orchards will need protection from the high winds from the south and southwest. The day of our visit a high wind was blowing, but behind these rows of trees there was little movement of the trees.

In passing through the orchard we noted what seemed to be galvanized iron casing in the ground at certain intervals. Mr. Yaggy explained that they were the "wells" from which water was obtained for spraying purposes. In spraying a large orchard the hauling of water through the large acreage is a considerable job. With only a few feet to water, the thought occurred to Mr. E. Yaggy to sink a number of wells, from which to obtain the water he needed. Ac-

STOVES AT FOUNDRY PRICES

85 CENTS buys this late model 1905 pattern SHEET STEEL HEATER, $4.48 10 inch. $5.48 12 inch.

the same stove exactly, built of the same material, and finished in the same manner as stoves sold by dealers at from $2.00 to $3.00.

Description This stove is made of heavy sheet steel, with plain name plate and removable front damper. Legs furnished are of heavy cast iron. Top is mounted with an ornamental bronze urn. Length of stove 16 in.; height 14 in.; width 11¼ in. Stove is well and substantially built and at this exceedingly low price, it is certainly a bargain. There is nothing cheap about it but the price we are making.

Send for Our FREE Stove Catalog

If this stove does not suit you, before placing your order elsewhere. This Free Catalog quotes lowest foundry prices on Steel Ranges, Steel Cooks, Cast Cooks, Base Burners, Round Oaks, Laundry Stoves, and in fact everything imaginable in the stove line. You can not afford to purchase a stove of any description without first securing our Stove Catalog, which we send on a postal card request. Right now is the time to send. We refer you to any bank or business house in Kansas City regarding our financial standing. Address as follows:

Kemper-Paxton Mercantile Co.
Successors to
O. L. CHASE MERCANTILE CO.
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Protect Your Trees

Don't let rabbits and mice girdle your trees this winter. A cheap and effectual way of protecting them is by using

Otwell's Tree Paint

This paint has been used for years, and its value demonstrated. Protects against rabbits, mice, borers, bark lice, sun scald, etc. Is not injurious to tree; in fact, it helps the tree, by keeping the trunk smooth and healthy.

Write for circulars, with testimonials of those who have used it.

W. B. OTWELL, Carlinville Illinois

I want 5,000 readers of The Fruit-Grower to act as my agents. Write for proposition.

For Commercial Planters and Others

OUR BLOCK OF

JUNE BUD PEACH

this season is looking unusually fine, and we now feel confident that we will make the finest June Buds that we ever grew.

We have all the standard commercial varieties in June Buds, also have a complete assortment of 1-year Peach, Pear and Cherry and 2-year Apple. Write for Catalogue and prices.

Chattanooga Nurseries, Chattanooga, Tenn.

THE O K NURSERY O K Prices = O K Trees Customers O K Pleased

We want more customers to please with our trees. Write today and learn how we will give you 3,000 Elberta Peach trees absolutely free for sending us names of fruit-growers.

ADDRESS, A. L. LUKE, WYNNEWOOD, INDIAN TERRITORY.

cordingly these were provided, and an inexhaustible supply obtained. The wells are from ten to eighteen feet deep, are cased so that they will not fill up, and at all times they contain plenty of water. A pump will soon fill a tank, and the work of spraying is simplified. Not many orchards have water so conveniently located.

"Then you believe in spraying?" Mr. Yaggy was asked.

"Yes, I think it does good. But I believe we have not the need of the spray pump here which orchardists in other sections have," was the reply.

But little spraying was done this season, it may be said. Mr. E. E. Yaggy, who had charge of the work, was in Chicago when the frost came which so seriously injured the fruit crops, and he telegraphed his men

DOUBLE-DECK WAGON USED ON YAGGY PLANTATION.

to stop spraying, for he believed the crop was killed anyway. Even up to late in the summer he believed their crop would be very short. Only a small quantity of boxes was purchased, but later several additional carloads had to be ordered.

In the Yaggy orchards there are few varieties. Jonathan and Grimes have proved very valuable varieties, and so has Winesap. Ben Davis has not done so well. Missouri Pippin trees were planted as fillers, and they have borne wonderful crops, and this year many are breaking with their loads. These trees will be cut out later. The Winesap trees were literally breaking down with their fruit. The apples were smooth and sound and well colored. Neither the Ben Davis nor the Missouri Pippin, however, seemed to have colored up as these varieties should have done. It was not apparent why Jonathan and Winesap should color up so well, and these other varieties show lack of color, in the same soil.

Before leaving the Yaggy plantation, perhaps we should refer to the catalpa planting. For it was catalpa growing which first interested Mr. Yaggy in this section. Being impressed a number of years ago with the importance of growing trees for posts, railroad ties, and other purposes, Mr. Yaggy loked about for a suitable location, and selected the Arkansas valley land, where he finally located. Catalpa trees were planted, for they are good growers and the timber is very durable. The trees grew off well, and the planting has been successful. So much so that the entire acreage is now about 500 acres. The first growth is somewhat crooked, unless the tree is cut off at the end of about the second year. As the posts are cut off a new growth will spring up, many shoots coming from the same stump, so that the plantation is perpetuated. We saw trees which had been grown from stumps cut off last winter, which are twelve feet high, and Mr. Yaggy assured us this is not unusual; that he had seen one season's growth from stumps which was seventeen feets high, as straight as an arrow.

"Have you sold any trees for railroad ties?" was asked Mr. Yaggy.

"No, the timber is too valuable for railroad ties. We sell posts of various kinds, at prices which would not justify us in holding the trees until they are large enough for railroad ties. We sell great quantities of what we call 'stays,' which are used to brace wire fences between larger posts which are farther apart than usual. These stays bring 4, 6, 8 and 10 cents each. For posts we get the following prices for different lengths: Six and a half feet, 10 and 12½ cents; 8 feet, 25 cents; 10 feet, 35 cents; 12 feet, 45 cents; 14 feet, 75 cents. And a telephone company which puts in farm telephone lines gives us $1.25 for all posts we can furnish them which are 16 feet long and 3 inches in diameter at the top. We have cut 200 of these posts from an acre, and had about 1,800 trees left standing. When we can bring trees to this size in eight or ten years—as we can do here—it will be seen that the post business is pretty good one, and we could not afford to keep the trees until they were large enough for railroad ties."

As evidence of the enduring qualities of catalpa wood, Mr. Yaggy showed us sections of posts which had been in the ground for eighteen years without a sign of decay. There is great demand for the posts, and the winter work on the plantation consists of getting posts out for market. Where an acre of trees twelve years planted was cut off clear, the returns were $400 per acre. By "cut off clear" we do not mean that the stumps were dug out, but simply the first growth was cut off, and the second growth came on from the stumps at once. Several shoots will come up from each stump, but all are destroyed except one.

After leaving the Yaggy farm, we were taken to the orchard of Mr. Morgan, in which some of the oldest trees in the neighborhood were found. These trees were planted about twenty-three years ago, and are wonderfully well preserved specimens. Great trunks, like those found in the older orchards of New York, with bark as smooth and vigorous as is usually found on a ten-year-old tree. These trees are very large, and all were loaded with fruit, some of them containing perhaps ten or twelve barrels of fruit. These trees, as well as some of the older trees in other orchards visited, are now crowding each other, and the fruit is not so large as would otherwise have been. York Imperial and Winesap trees were especially well loaded, and we were told the Grimes and Jonathan trees had been full of the most excellent fruit. The fruit from this orchard had been sold to Mr. Martin, and he was busy harvesting the crop. This is the gentleman we referred to last month as having sold 1,800 barrels of Jonathan and Grimes Golden apples to Fred Harvey, the eating house man, for $4 a barrel, f. o. b. Hutchinson.

Mr. Morgan, the owner of this orchard, told us that when he planted his first trees he was able to plant only a row at a time, among his garden vegetables, for he was extensively engaged in gardening. He increased his planting every year, and now has trees of all ages, from twenty-three years down. He has a beautiful home and a good orchard. At this place we saw some very large cherry trees. This tree does not do well on cold, wet soils, we are told, but on this sub-irrigated soil, where water is only a few inches below the tree-roots, these cherry trees do remarkably well, and grow to a large size.

The orchard of Mr. G. D. Cole was next visited. Some very old trees were found here, all in good condition. Here was found a young orchard planted to alfalfa, which was a beautiful sight. The rich color of the alfalfa looked like a green carpet for the darker foliage of the thrifty apple trees. Mr. Cole said he cuts the hay crop from this orchard, just as though there were no trees planted, and he cannot see that it has injured the trees in any way. However, this was the only orchard we saw which was planted to alfalfa, so that the custom is not general. None of the orchards, however, have been given clean cultivation. The soil is loose and in good physical condition, and the crab grass is allowed to grow, and is mowed and allowed to lie where it falls.

The illustrations accompanying this article are from photographs taken on this trip by Mr. E. H. Favor, and will give somewhat of an idea of the character of the trees, their crops, etc.

The prices received by the Hutchinson growers are very satisfactory—they "sound mighty good" to the growers, at any rate. Jonathan and Grimes sold for from $3 to $4 per barrel, $1 to $1.30 per box. When we returned to the Yaggy farm from our drive we found an apple buyer from Los Angeles, who wanted Winesap, or any good red apple, and who offered $1 per box. He wanted a lot from Mr. Yaggy, but the price was declined, unless other varieties, such as Missouri Pippin, were taken along with the Winesap.

The Fruit-Grower representatives were much pleased with the orchards near Hutchinson. Shipping facilities are good, a switch track on the Missouri Pacific and Santa Fe being at the disposal of the growers. Fruit which is picked and packed during the day is in storage at Hutchinson the same evening, and from here competing railway lines give good shipping service and freight rates.

We are under many obligations to the Messrs. Yaggy for the favors extended. They are most excellent gentlemen and deserve their success. The two sons are graduates of Yale University, and a younger son is now in school at that institution. They remain on the plantation the year 'round, while their father spends much of his time traveling. During the winter, Mr. Edward Yaggy said, there is great sport, with the rabbits and dogs, and we shall hope to visit the Yaggy plantation when everyone is not so busy with an apple crop.

Cancer of the Breast No Longer Incurable—How Mrs. Geo. Ampt, of Aurora, Ind. Was Cured.

Aurora. Ind.. June 29, 1904.

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Coat comes 34 to 42 chest; pants, 30 to 42 waist and 30 to 34 leg measurement. Shirt in sizes, 14 to 17; hat, 6¾ to 7⅞; socks, 8 to 11; shoes, 5 to 11. Give size of all and state color of suit preferred, and whether you wish a four-in-hand or made tie.

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(Patent Allowed Sept. 2d, 1904.)

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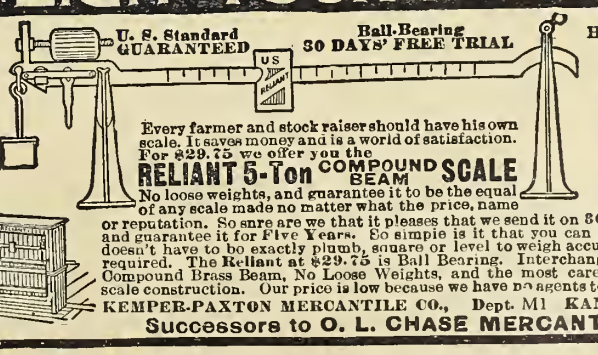

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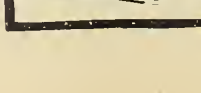

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W. G. Campbell, Jr., General Manager James M. Irvine, Managing Editor

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Entered as Second-Class Matter in the Postoffice at Saint Joseph, Missouri

Volume 15 ST. JOSEPH, MO. NOVEMBER 15, 1904. Number 11

It has been noted that in most of the agricultural colleges in the West there has been a marked increase in enrollment this season. Particularly is this true of the Missouri Agricultural College. This augurs well for the interests of agriculture in this state. As is generally known, the Missouri college is at Columbia, a part of the Missouri State University. It is one of the best colleges of the kind in the country, with a most excellent corps of teachers. We believe the school is especially fitted for the teaching of horticulture. And yet it is only within the last few years that this school has received the recognition to which it was entitled. One thing which worked against the agricultural college was said to be the fact that the scholars in other departments of the university did not treat the agricultural students with the respect which was due them—they seemed to be of the opinion that a law student or one in the medical department was better than an agricultural student As a consequence, agricultural students were at a disadvantage among other students, and the tendency was to make them dissatisfied with the agricultural course. But all this is changed. The agricultural course now stands at the top, and not only has the enrollment increased, but within the last year or two a great many students from other departments of the university have changed to the agricultural course—the latter, in other words, is not only holding all its own students and getting many new ones, but it is gaining from other departments. The Fruit-Grower wishes every farmer of Missouri could know of the work which is being done at the Missouri Agricultural College. If they did, the attendance of farmer boys would be greatly increased, and whatever means are needed for the improvement of the work would be provided by the legislature without any hesitancy. More men are needed in some of the departments of the college, and if as good ones can be secured as those who are there now, it would be an excellent investment for the state to employ them at once. Missouri is an agricultural state, and should encourage this institution, which means so much for the agricultural interests of the commonwealth.

Is there not an epidemic of overplanting of various crops in this country just now? We mean by this that one person or one company will have too great a planting? This is suggested to us by the fact that the Rocky Ford (Colo.) canteloupe growers are complaining of the season, and the cause assigned is that the acreage was more than twice what it should have been. Strawberry growers in various parts of the country suffered from the same cause, for with the larger acreage the attention could not be given the fruit which was necessary for best returns. And now the air is full of rumors of great orchard companies, particularly those which will plant great peach orchards in various parts of the South. There is danger that disaster will overtake many of these companies, for, as has been pointed out time and again, there are comparatively few men who are competent to look after 2,000 acres of peaches—and yet there are many orchards projected of even greater size than this. We feel safe in saying that comparatively few of these largest orchards have ever been found profitable by their owners. Some of them should serve as perpetual monuments against these great orchards, unless the persons in charge are rarely qualified for the work. There is much encouragement for the man who will plant an orchard and care for it properly, or who will engage in berry-growing in the right place, but the one who figures the profits from a 5,000-acre orchard on the basis of the receipts from an orchard of a few acres, is deceiving himself, for the returns will never be realized. There is great danger in some of these schemes, we believe, just now.

The investigation by the Interstate Commerce Commission into the workings of the deals between the railway companies and the private refrigerator car lines was full of startling developments. It was shown that the system is iniquitous in the extreme, and works a hardship on the shippers of fruit, the receivers and the railroads as well. It is said that under the existing laws the commission is powerless to remedy the evils, but that some way will likely be provided for the correcting of the abuses. As a result of the investigation, it is said that a number of the railway lines will cut loose from the private car monopolies and operate their own refrigerator lines. This should be good news to shippers, for it has been the experience of most of them that they are able to get better treatment from the railway companies themselves than from the refrigerator car companies.

In this issue of The Fruit-Grower Mr. Edwin Taylor of Edwardsville, Kan., pays tribute to the Ben Davis apple. Let us tell an actual incident which occurred last month at the World's Fair. The editor of The Fruit-Grower was talking with Mr. S. W. Moore, in charge of the West Virginia horticultural exhibit, when a gentleman approached the exhibit, and said: "There are some nice Ben Davis apples; fine lookers, but not worth anything as an eating apple." This aroused Mr. Moore, who is a friend of Ben Davis, and he asked the gentleman where he was from. The latter replied that he lived in the State of Washington, and then he repeated his charges against Ben Davis. Mr. Moore told the gentleman that perhaps he had never eaten a good Ben Davis apple; that he lived out of the Ben Davis belt, for this variety requires a long, warm season, with lots of sunshine, and these requirements are not met in Washington. Going over to one of the tables, Mr. Moore secured two Ben Davis apples of the crop of 1903, which had been kept in cold storage, and gave one to the Washington man. The latter at once began to eat it, and had taken only three or four bites until he said that Mr. Moore was right; he had never seen Ben Davis apples like the one he was eating. "I have been used to a much poorer quality apple, and my opinion of Ben Davis was formed from them," he said. "This is a good apple, and I wish you would give me several to take home to my neighbors, to show them we have never seen the Ben Davis at its best." Mr. Moore agreed to furnish the gentleman with a quantity of the apples, and it is likely this gentleman will convince some of the Northwestern growers that they, too, have been condemning Ben Davis because of their experience with inferior specimens. By the way, this is one of the lessons which ought to have been taught by the fruit exhibit at the World's Fair: That there are certain sections where certain varieties reach their highest development, but that in other localities these varieties may prove absolute failures. It rests with the growers in every section to grow the varieties which succeed best under their conditions.

Among the foreign exhibitors at the World's Fair, no country has an exhibit which compares with that of Germany for thoroughness. In every line the exhibits of the Germans are very fine, and the many awards they have received show that the judges have appreciated this effort on the part of Germany. It is likely true that the success of the Germans is due to their technical education. In some branches of agriculture, especially, the Germans are very strong. Those of our readers who examined the German educational exhibit must have seen the series of pictures showing scenes in the school life of the German children. Two things seemed to be taught every child; He is taught calisthenics, and he is taught to work. In every grade of the schools pictured the children are taught to work in some line. The school garden is used to teach them gardening, and a kitchen is employed to teach the girls to cook. This is in the very lowest grades. Some day we will likely have a garden for every school in America, and the principles of agriculture will be taught in at least the schools of the country. There is much we can learn from Germany, if we will but try to do so.

It is said that there will be a loss of some of the apples grown in New York this season, owing to the fact that buyers and growers could not get together, and some of the fruit could not be taken in out of the weather until it had been damaged. If Eastern papers are to be believed, the situation has been unfortunate. Buyers evidently had an agreement as to price, and this agreement was more binding this season than it has ever been before. They persistently held to the idea that good apples ought to be bought from farmers for $1 per barreled stock. Other offers were made of 25 cents per barrel for the fruit on the trees. Growers naturally refused these offers, for two reasons: First, because the condition of the apple crop generally justified higher prices; second, they cannot afford to pay high prices for barrels and high wages for pickers and then sell the barreled fruit for $1 per barrel. The apple market has been in bad condition with both growers and buyers suspecting the other of unfairness. There is something wrong with the system, when the fruit is allowed to be damaged, if not entirely lost, when in other sections of the country the consumers are anxious to pay good prices for the fruit, but the supply is so small that prices are actually prohibitive. If this year's crop cannot be handled under the present system to advantage, what will happen when this country has a really bumper apple crop?

Uncle Sam is now prepared to inspect all imports of food products at New York, and five expert chemists will sample every entry and ascertain whether it is properly labeled, whether it contains adulteration and if it is entitled to be placed on sale. This inspection has been carried on for some time, but only recently has the government been equipped to properly inspect the products. Since the pure food law became effective the percentage of imports entitled to entry has been increased from 78 per cent to 85 per cent of all the imports which were received. This shows that a better grade of goods is now being offered, and it is expected to still further improve them. Packages which are improperly labeled—which do not show just the contents, with the preservative used, if any—will not be allowed to pass. Products which are adulterated will also come under the ban of the inspectors, and if coloring matter is used this fact must be plainly stated. This is a good law, and if applied to all our local food products it would be still better. Perhaps Germany and some of the countries which have been trying to bar American meats and fruit products will now get a taste of their own medicine, for it has been found that in certain lines of food products from Germany and France only a very small percentage are up to the requirements of the law.

Every now and then the matter of disposing of farm products is discussed and various methods are recommended. Our readers will remember the articles of the late R. M. Kellogg on the subject of marketing strawberries direct to the consumer, where this market can be found near home. We want now to tell about two methods which have just come to our notice. One is that followed by some of the apple-growers of the Pecos Valley, in New Mexico. An association of growers, knowing that the state of Texas is a good market for their fruit, have carried advertisements in Texas papers, even in some of the farm papers, announcing that they would ship fancy apples, express prepaid, to any station in Texas, at so much per box. This brought the matter direct to the attention of the consumers, and doubtless has worked satisfactorily. Another method is that of "Jones' Dairy Farm, Fort Atkinson, Wis." Now, we never heard of this firm until one day we received a letter stating that the firm—for there are two of the "Joneses"—had made a specialty of furnishing home-made sausage and sugar-cured hams, bacon, etc., and pure buckwheat flour, together with home-made jams, jellies, preserves, maple syrup and maple sugar to people who wanted good food products; these products had been sold to Mr. So-and-So, of St. Joseph, who had recommended them, until now the goods are offered by one of the leading grocers, to whom fresh shipments will be made. Accompanying this letter came a little booklet telling just how the products were prepared—how the farm is located in a splendid dairy section, where there is lots of skim milk; this skim milk, fed to hogs, makes most excellent quality of meat, etc.; everything is clean and pure, and of the highest quality. This booklet was so well written that it really seemed a shame to have to kill the pigs, from which the "famous little-pig sausage" is made. After reading it, one's mouth fairly watered for some of the good things. And if perchance one forgot to order the goods, in a few days along came a postal card saying a fresh shipment had been made that day to the grocer in question. This is a vigorous, persistent campaign, and only indicates that some persons are working along original lines to get the most out of their products. Let us hope these plans will succeed.

During the past year The Fruit-Grower has received more specimens of fruit-tree twigs infested with San Jose scale than were received in the previous five years. We do not know whether this is an indication that the scale is becoming more widespread, or whether it indicates that fruit-growers are becoming more watchful and are now on the lookout for the same. At any rate, the scale has been pretty widely disseminated, and unless it is fought aggressively it will cause much loss. But where the proper remedies are intelligently applied, it would seem that this pest is no more serious than some other orchard pests. Indeed, it is likely true, as has been claimed, that this insect can be controlled much more easily than apple scab.

The Fruit-Grower is the Ne Plus Ultra of horticultural papers, and I do not see how any fruit-grower can get along without it.—L. J. Farmer, Pulaski, N. Y. (Mr. Farmer used to run a good fruit paper, and he knows all of them, so that his words of praise may be taken as expert testimony.—Editor.)

Notes by the Way

Out in the garden is a little Soupert rose bush, which seems not to have learned that the frosts of autumn are the signal for the retirement of flowers, and it blooms on, unmindful of the near approach of winter. This little rose is the last flower to go every autumn—in fact, it seems to do its best even after the asters, the dahlias, the cosmos and all the favorites of the fall season have been blackened by the frosts. Every year, we can depend upon this rose blooming until the very last, and when actual freezing weather comes, and the blossoms are frozen hard, it seems as though even then the plant is reluctant to give up the fight.

Have you ever considered what a wonderful thing is the procession of the flowers throughout the year? In early spring, when the daffodils, the tulips and the crocuses appear, how they are admired! It seems that flowers were never so beautiful, nor were we ever so glad to see them. But man is a fickle being. He has hardly ceased to extol the praises of these first flowers until another one appears, and his affections are transferred to the new-comer. Perhaps the late arrival is the dandelion, very humble flower, indeed. Yet how beautiful it is at the time of its appearance, and how we forget its evil effects later in the season.

But man is fickle. While admiring these early flowers, he is preparing for the coming of others later. The sweet pea seeds are planted, the pansies are pushed along, and a new lot of favorites are groomed for the contest. The lilacs blossom, hold our attention for awhile. But they do not last long, and are soon forgotten.

Then the peonies and the roses come on, and one's affections are divided between them. Truly, as one looks at them, it seems that flowers can be no prettier; that these are the finest of the year. These must surely be our favorites, of which we would never tire. Have you never felt this way? And even at that time the sweet peas were almost ready to blossom. We scarcely know ourselves, it would seem, for when the sweet peas blossom—so modest, so delicate, so sweet—one would be lacking in a sense of appreciation if he failed to pay tribute to them. How we prize those first blossoms of the sweet peas! We scarcely note that the June roses are fading, or that the peonies have almost completed their task, so engrossed are we with the sweet peas. How changeable we are.

But the sweet peas are not to last. We know that in order to secure the finest blossoms, they must be cut every day, and none of the blooms allowed to go to seed. And we are confident that we will visit the row every morning and cut the flowers as they appear. There is no doubt about our faithfulness to the sweet pea. Not at all. But soon we begin to neglect the sweet peas—cutting them every other day will do just as well, we say, as to cut them every morning. And then we fail to visit the flowers even every second day. Our admiration is on the wane. We think the blossoms are not so pretty as they were at first, and try to excuse ourselves on this ground. But the truth is that some other flower—perhaps the spicy nasturtium, the stately hollyhock, or some other more aggressive flower—has claimed our attention. And by and by the sweet peas are neglected and forgotten, the seed pods appear and ripen—and the sweet pea vines have gone the way of all the earth.

Later will come the other flowers, trooping past—the gaudy dahlia, swelling with pride at its many colors; the asters, cosmos, etc. All will receive their share of attention, yet we will scarcely note their departure, for our affections will have been transferred to a new claimant. There is no jealousy, however, among the flowers. Each comes on at the appointed time, plays its part and passes on. None comes too soon and none stays too long, and man is so changeable that he turns from one to the other without any sense of loss. Truly it is a wonderful procession! Let us listen to what a writer said in an old gardening book, printed early in the last century:

"We have arrived at the termination of the floral year and painfully perceive that the once noble and brilliant array of out-of-door flowers and shrubs is now reduced to a small and scattered remnant—'like the gleaning of grapes when the vintage is done.' And we are serious, or ought to be so, 'for we all do fad like a leaf.' We would have wished to the beautiful flowers we have seen a longer existence, an uninterrupted bloom, but in vain—'the wind passeth over them and they are gone.'

"Let us contemplate the distribution of flowers through the several periods of the year. Were they all to blossom together, there would be at once a promiscuous throng, and at once a total privation; we should scarce have an opportunity of adverting to the delightful qualities of half, and must soon lose the agreeable company of them all. But now, since every species has a separate post to occupy, and a distant interval for appearing, we can take a leisurely and minute survey of each succeeding set. We can view and review their forms, and enter into a more intimate acquaintance with their charming accomplishments. What goodness is this, to provide such a series of gratifications for mankind, and to take care that our paths should be, in a manner, incessantly strewed with flowers! And what wisdom to bid every one of these insensible beings know the precise juncture for their coming forth, so that no actor on a stage can be more exact in performing his part, can make a more regular entry, or a more punctual exit!

"Who emboldens the daffodil to venture abroad in early spring, and to trust her flowering gold with inclement and treacherous skies? Who informs the various tribes of fruit-bearing blossoms that vernal suns and a more genial warmth are fittest for their delicate texture? Who teaches the clove to stay till hotter beams are prepared to infuse a spicy richness into her odours, and tincture her complexion with the deepest crimson? Who disposes these beautiful troops into such orderly bodies, retarding some, and accelerating others? Who has instructed them to file off with such perfect regularity, as soon as the duty of their respective station is over? And when one detachment retires, who gives the signal for another immediately to advance? Who, but that unerring Providence, which, from the highest thrones of angels to the very lowest degrees of existence, orders all things in 'number, weight, and measure.'"

J. M. I.

The Family Circle

The Eastern edition of The Fruit-Grower seems to have awakened the members of The Family living in that section of the country, and they will strive to increase our list among Eastern farmers. David M. Ellis, an old member of The Family, living at Bridgeport, Pa., has always been a good friend of The Fruit-Grower, but his interest has been increased, now that we have an Eastern edition. He writes:

"The October number received. I am more than pleased with the first of the Eastern edition, and will do what I can to have it made known. Please send me a few sample copies. I have sent my copy to the Montgomery Transcrips, to have them give the paper a special notice. The paper will certainly increase in circulation in our state."

There can be no doubt about the circulation of The Fruit-Grower increasing everywhere if members of The Family will do as Mr. Ellis has done. It is significant that Pennsylvania has more members of The Family than any other Eastern state. Do you remember what our Pennsylvania subscription man said? That he wanted us to publish the standing of states again before spring? We hope that the members of The Family in every state will strive to have their state stand higher in the column at the time of the publication of the list the next time.

In conversation with a member of The Family recently he said he was trying to get every farmer within twenty-five miles of his farm to subscribe for The Fruit-Grower. Of course we thanked him, and told him it was very kind of him to help the paper in this way. Then he said he wanted to help the paper, but he was not altogether unselfish, for he realized that he would be helping himself if he could induce all his neighbors to read the paper regularly.

"If I can get all of them to understand how important it is that they keep their orchards clean and seek to control the pests in their orchards, it will help me to raise better fruit, with less work. If all of them will spray intelligently and persistently for apple scab and the insects which infest our orchards, there will be less loss in my own orchard. But if I am the only one in my neighborhood who sprays and keeps the orchard clean, there will be innumerable sources of infection, and much of my work will be fruitless. I realize that if anyone who grows fruit will read The Fruit-Grower regularly he will in time come to adopt better methods. So you see I am helping myself while helping my neighbors and The Fruit-Grower."

That's good reasoning, isn't it? Why not act on the suggestion, and try to secure the subscription of all your neighbors?

There is still another way in which you can help yourself by getting as many fruit-growers to join The Family as possible. This is brought out in a letter from Mr. A. F. Ward, Adams Basin, N. Y. He recently wrote as follows:

"I enclose check for $1 for three years' renewal. I think I can well afford to pay full price for The Fruit-Grower. It has certainly been quite a help to me, for last season, when I had a crop of apples, the reports concerning the apple crop everywhere, which the paper gave from time to time, gave me lots of confidence, and I held on to my apples until I got my price. I shall take your valuable paper as long as I raise apples."

Now, Mr. Ward was all right, for he read The Fruit-Grower's reports concerning the apple crop, and these reports induced him to hold his apples for what he believed they were worth. But is it not a fact that he would likely have secured his price earlier if all the apple growers in his section were readers of The Fruit-Grower, and had the benefit of these reports? How often has it occurred that when some growers were holding their fruit for a price which they thought to be justified by the size of the crop, some other growers who did not understand the general crop conditions would accept a lower price, and break the market.

Why not get all of them to read The Fruit-Grower and keep posted concerning the general crop conditions? Try to get all the growers in your section lined up at once, so that they will be posted next season.

By the way, these reports concerning crop prospects are an important matter, and this is one place where The Fruit-Grower hopes to make a great improvement next season. It has been a hard matter to get accurate estimates from our readers, when we would send them return postal cards. Suggestions as to how this feature can be improved another year will be gladly received, for this feature must certainly be made better. We want every member of The Family to know just about what the crop of any particular fruit will be, and then he can set his price accordingly. It is not the purpose of The Fruit-Grower to say at any time what fruit shall be worth, but it is a part of its mission to keep its readers posted as to the size of the crop, and the rest will be comparatively easy.

Send your suggestions concerning this work. And also get as many new subscriptions as you can, so that the reports will do the greatest possible good.

Next month we want to tell the members of The Family about our special issues for 1905—they will be fine, we assure you. The title pages of several of them are now ready, and they will present a most attractive appearance—they look like the cover pages of the Ladies' Home Journal, or of some of the high-class magazines. Next month we will tell you more about them, but in the meantime we want to renew our request that the members of The Family try to get as many new subscribers now as possible. Remember the special offer of five new subscribers—or four new ones and your own renewal—all for $1. And in getting these new subscribers, you can guarantee that the first four numbers of 1905 will be worth much more than the price of a year's subscription. Money refunded if this is not so. Will you not send your list today?

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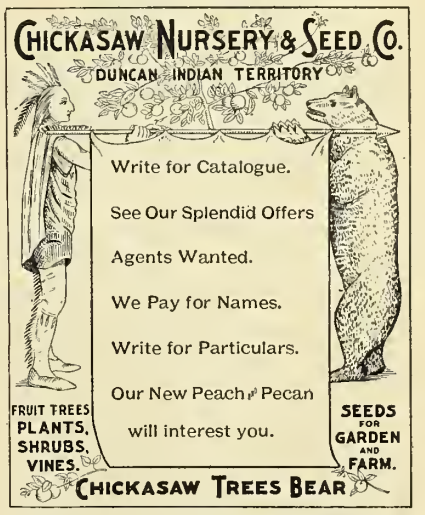

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QUESTIONS AND ANSWERS.

The Oregon Evergreen Blackberry.—Last month a member of The Fruit-Grower family asked concerning this fruit. Two replies have been received, with entirely different reports. Perhaps one of these persons has not the true variety, or perhaps the difference is due to different locations. At any rate, there is a vast difference, as is shown by the following: .

"The first time I ever saw this fruit listed was by Samuel Wilson, a well-known and reliable seedsman of Bucks County, Pa. I always intended trying it, but for some reason I never did. It is listed by the Fairbury Nurseries, however, and I send their description: 'This variety will bear immense crops and thrive wherever it can get a foothold in the soil and any kind of a trellis or other support for the grape-like wires to run over. It differs from all other berries in form of foliage and manner of growth. The canes do not die in winter, like other berries, but continue to grow and bear year after year. The berries are borne in clusters of four or five on a stem, are good-sized, fine-flavored, sweet and delicious, either to eat from the hand of for canning or cooking. They are immensely productive."—A. M. Benjamin, Banksville, Neb.

The other report is as follows:

"A few years ago the Oregon Evergreen blackberry was sold here with the claim that it originated in the Hawaiian Islands and was first brought to Oregon. The parties who peddled it here asked $1 for a plant, or $6 for a dozen, and claimed one vine would furnish a large family with berries constantly in this frostless region. The vine grows vigorously and is evergreen. It always has a few blossoms and a few little round, sickly berries, but I don't believe that at any time of year a person could pick a cupful of berries from a vine covering a space of ten feet square. I take The Fruit-Grower and am well pleased with it.—Horace F. Wilcox, Julian, San Diego, Cal.

The Soda-Bordeaux Mixture.—N. R. White, Nelson, Mo., writes us, calling attention to the fact that we had an error in his question in the October number of The Fruit-Grower, in that we said washing soda was used instead of copper sulphate, whereas it should have been that washing soda takes the place of lime. In regard to this soda-Bordeaux, we have received the following:

"In the October number N. R. W. asks about Soda-Bordeaux mixture, made of five pounds of washing soda, four pounds of copper sulphate and forty gallons of water. I would not think this preparation will keep longer than lime Bordeaux. To make a cure-all of aphis troubles, try the following: Get three and a half pounds of quassia chips, three and a half pounds of whale oil soap; put the chips in a flour sack and soak over night in five gallons of water, weighing it down. Next day boil for about an hour. Put soap in another vessel and boil up until dissolved. Add these mixtures to the Bordeaux mixture, adding the quassia water first, which will warm the mixture, so the soap will mix better. Should canker worms be present, add one-quarter pound of paris green to the mixture. There will be no trouble with clogged nozzles in using this, and the scale nymphs will have a hard time of it to get a new hold if they get a touch of it. The copper sulphate will burn their toes, the soap and soda will penetrate and clean off their hides, so that the quassia can shrivel them up. But this is not all its virtues, for it will clean off all dirt, fungi and lichens from the tree, and make it look as shiny and slick as a well-groomed horse.

"Go slow on the solid lime-salt-sulphur preparation. We had one here two years ago, made under government inspection. I tried it, but do not believe it was worth carrying home—it was little better, at any rate. It took more making than the raw materials and then was not so effective. I hear nothing of it out here now."—R. I. Fraser, Vernon, B. C.

C. B. P., Albany, Mo.—Who has had experience with Prof. Munson's grapes north of 40 degrees north latitude, especially with Herman Jaeger, Rommell, Brilliant and any others which may have been tried I think it is time we had something better than Concerd. Who has had the experience desired?

J. G. P., Jacksonville, Ill.—In September I plowed a small patch of bluegrass sod, which I intend to set to raspberries—mostly blackcaps — next spring. I have given part of the land a coat of stable manure, which I will soon plow under. As I live close to town, I can give the rest of the land a coat, but I do not know whether I am doing the proper thing in putting fresh manure on land this fall which I intend to set in raspberries next spring. I have some more bluegrass sod which I wish to treat in same manner, and would like to know whether this treatment is all right or not.

Answer by W. L. Howard: On all ordinary soils stable manure will prove very beneficial to land where black raspberries are to be set. They will endure heavy fertilizing without detriment to their fruitfulness. The stable manure will also tend to mellow the soil and render its physical condition very much better suited to their growth. It does occasionally happen that a very peaty soil may be rich enough in nitrogen that it would not need the stable manure, but this is so rare that it may be said with almost absolute certainty that you will make no mistake by applying the stable manure liberally.

H. H., St. Marys, Ind.—I have an orchard of ten-year-old apple trees, and one twelve years old. The younger orchard has not been pruned since it was set out. Will it be injurious to prune it now I have never pruned at any time except spring, but cannot wait until spring, as I have about an acre of grapes to prune then.

Answer by W. L. Howard: Any necessary pruning of the apple orchard may be done any time after the leaves are off in autumn, until just before growth begins in spring. In a neglected orchard the first work of cleaning up should consist of cutting out all of the dead or dying branches, being sure to saw them off close up to the trunks of the trees and then paint over the wounds with common white lead and oil. In many instances a portion of the old branches may be removed to advantage by cutting back to where a young and vigorous growth has begun, always painting over the wounds where cut. The twelve-year old trees will doubtless need very little pruning. Perhaps it will only be necessary to remove those branches that seem to be crowding each other and any that may be crossed and making wounds by rubbing together. Of course any dead or diseased branches should come off, as canker, which is the first stage of bitter rot, is likely to get in a tree now and then. This is especially true of old trees and any apparently diseased bark should warn the orchardist that the entire branch ought to be cut out and burned.

G. E. K., Alva, Okla.—Can plum, cherry and peach buds be worked on Myrobolan stock? If so, when is the best time for this work? (2) Will Myrobolan seed grow if planted in the fall? (3) When is the best time to take grape cuttings?

Answer by Dr. Whitten: (1) Plum, cherry and peach buds may be worked on Myrobolan stocks. Commercially, however, it is not generally desirable to use Myrobolan stock for any other than plum trees. The cherry and peach do not make a very good union with the plum and if worked on it the trees usually last but a short time. (2) Myrobolan seed will grow if planted this fall. (3) The best time to take grape cuttings is in the fall, shortly after the leaves are shed from the vines and before any hard freezing has occurred.

V. W., Ridgewood, N. J.—(1) When is the best time to prune Bartlett pear trees, spring, summer or fall? (2) What causes Bartlett pear trees to blossom the latter part of September? (3) When Bartlett pear trees are planted in a grass lot or on a large lawn, should the grass be cut away from the trees for a distance of three or four feet or will the grass do them no harm? (4) Can the pruning of plum and apple trees be done at the same time as the pear trees? To the experienced these questions may seem simple, but as I have not noticed them answered lately, I beg to ask your indulgence.

Answer by Dr. Whitten: (1) It is best to prune Bartlett pear trees in late winter or very early spring. Pruning should not be continued after the trees will begin to bleed if cut. (2) Blossoming of pear trees in the autumn is usually due to the fact that the trees had prevviously become partially dormant, due either to heavy cropping or to dry weather in the summer, their growth being checked early in the summer so that they become partially dormant, causing their winter buds to form early, so that with autumn rains they are likely to take on a somewhat spring-like growth. Usually any method of treatment which will keep fruit trees growing constantly on through the summer without any sudden check will prevent their blossoming in the autumn. Those buds which put out blossoms in September, should under normal conditions have remained dormant until the following spring and blossom then. (3) If the near trees in sod are making excellent growth, it is safe to leave the grass growing around them. If, however, the trees are making poor growth, due to their struggle with the grass

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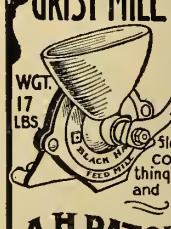

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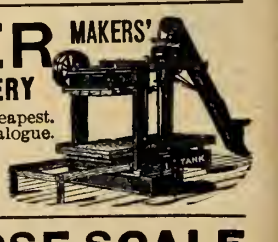

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about their trunks it will be best to cultivate a space about each tree. (4) The pruning of the plum and apple should be mainly done in late winter or very early spring, the same as with the pear.

F. N., Cascade Springs, S. D.—Having planted quite a number of trees (about 200) that I have since found are not of the proper varieties, I budded them to other varieties. Those not over an inch and a quarter in diameter were budded near the ground; larger trees were budded on the limbs. Those budded near the ground are now beginning to sprout, and I would like to know how I can protect them against freezing during the winter.

Answer by Dr. Whitten: The sprouts which have started from the buds which were inserted near the base of the trees may be protected during the winter by covering the trunks of the trees well. They may be covered by wrapping them with burlap sacks or any such covering. If they are of varieties that are very susceptible to winter injury, and particularly if the shoots are very young and tender, it may be better to mound up earth around the trunks of the trees, covering these young shoots entirely, taking the earth away in the spring. The earth for mounding should be taken from some distance away from the trunks of the trees, so as not to lay bare the root system during the winter.

J. E. R., Cameron, I. T.—I wrote to ask through your paper for information regarding the trouble I am having with a fine peach that I planted two years ago. As soon as the leaf started out in the spring it commenced curling up and turning a smoky color. The leaf commenced in August to turn a brownish yellow and began shedding. After shedding the twig became spotted a white or smoky skum then commenced in the bud, dying down the twig. Some large branches threw out gum all along their body and now dying. No other variety affected. I planted those trees in different places in my orchard and cultivated different, but all are affected alike.

Answer by Dr. Whitten: The above description of the peach tree difficulty indicates that the trees were probably attacked by what is known as peach leaf curl. This is a fungus disease which was especially bad the past year, owing to the cold, wet weather. Some varieties are much more suspectible to it than others and this one variety referred to may be susceptible to this disease to a greater extent than were those in the other orchard. On the other hand it may be that the fungus found its way to these particular trees without getting a start in the other orchard. If the trees are affected with leaf curl, as the letter indicates, it can be prevented by spraying with very strong Bordeaux mixture just before the trees leaf out in the spring.

Last Days of World's Fair Horticultural Show.

The last days of the fruit exhibition at the World's Fair are banner days, so far as the exhibits of apples are concerned. The new crop of fruit has been harvested, and the exhibit tables were filled with as fine specimens of apples as ever grew. Missouri, Kansas and the other states where the crop was short have been somewhat handicapped, but still the exhibit of apples has been creditable. The far Western states have taken everything by storm. About the first of November Oregon had an exhibit which was pronounced by many to be the best of the entire exposition. Not so many varieties were shown, but every apple was absolutely perfect, and the fruit was packed in the best possible manner, so that this exhibit was a sight to behold. Mr. Galloway, in charge of this exhibit, is rightfully proud of the showing made.

Colorado, too, has some splendid apples of the 1904 crop. Jonathans as fine as ever grew, and Grimes Golden absolutely perfect. In this exhibit was also a large table full of Stark Bros.' Black Ben Davis. This table attracted much attention, as did the exhibits of this variety in the Iowa, Arkansas and Washington state exhibits. This variety succeeds especially well in the Western states, where those growers who have trees of the variety claim there is a marked difference between Black Ben Davis and Gano. The apples were all very fine, well colored and perfect. Owing to the controversy over the identity of these two apples, these exhibits attracted unusual attention. In the Iowa exhibit Mr. Murphy, one of the gentlemen in charge of the exhibit, had Black Ben Davis and Gano together, for the benefit of those who wished to compare the apples, grown under the same conditions. None of the Black Ben Davis of the crop of 1903 were shown in any of the exhibits, and early in the season those persons who wanted to see them were disappointed. With the ripening of the 1904 crop, however, the exhibits were made in a number of state exhibits, so that many visitors late in the season had their first opportunity of personally examining specimens of this much-discussed variety. Whether one may think Black Ben Davis the same as Gano or not, the apple is certainly a good one, and its handsome appearance attracts every one.

The Fruit-Grower is an encyclopedia of information for any farmer.—Fred H. Ries, Hatfield, Ark.

Christmas Delineator.

The December Delineator, with its message of good cheer and helpfulness, will be welcomed in every home. The fashion pages are unusually attractive, illustrating and describing the very latest mode in a way to make their construction during the busy festive season a pleasure instead of a task, and the literary and pictorial features are of rare excellence. A selection of Love Songs from the Wagner Operas, rendered into English by Richard Gallienne and beautifully illustrated in colors by J. C. Leyendecker, occupies a prominent place, and a chapter in the Composers' Series, relating the Romance of Wagner and Cosima, is an interesting supplement to the lyric. A very clever paper entitled "The Court Circle of the Republic," describing some unique phases of Washington social life is from an unnamed contributor, who is said to write from the inner circles of society. There are short stories from the pens of F. Hopkinson Smith, Robert Grant, Alice Brown, Mary Stewart Cutting and Elmore Elliott Peale, and such interesting writers as Julia Margruder, L. Frank Baum, and Grace MacGowan Cooke hold the attention of the children. Many Christmas suggestions are given in needlework and the Cookery pages are redolent of the Christmas feast. In addition, there are the regular departments of the magazine, with many special articles on topics relating to woman's interests within and without the home.

Get a Good Feed Mill.

Every reader of The Fruit-Grower should be interested in the advertisement of A. H. Patch, Clarksville, Tenn., elsewhere in this issue. Mr. Patch manufactures the Black Hawk grist mill, which is sent express prepaid for $3. This will grind fine or coarse as desired, and is especially suited for poultrymen and to farmers who want to grind corn meal for their own use. Ground feed is recommended for so many purposes in feeding stock and poultry that it would seem that every farmer should have a mill of this kind, and when one can buy a good mill, warranted to give good service, for $3, with express prepaid, it would seem that there is no excuse for being without one. Mr. Patch also wants good farmer agents, to sell these mills. Look up the advertisement and write for particulars.

Polish for Floors, Furniture, Etc.

In the September number of The Fruit-Grower there appeared an advertisement to which we fear our readers did not give sufficient interest. It was that of the Butcher Polish Co., 356 Atlantic avenue, Boston, Mass. This firm makes a polish for floors, interior woodwork, furniture, etc., which is of the very best class. Those who wish to brighten up the furnitnre or improve the appearance of the kitchen floor, or in fact any floor which is left bare, should write to the firm at the address given for full particulars concerning the Butcher Polish. By the expenditure of a few cents a great improvement can be made, and the firm will send a free booklet upon request which will tell all about this.

TEXAS TREES.

A million of them growing on new prairie land. A hundred best varieties of plums, over a hundred of peaches. Fortunes in some new Texas varieties. Big stock of Arp Beauty. I introduced the Chilow and Weaver peaches, and the Wooten, Gonzales, Red October, Happiness and Welcome plums. A tree taken from the South to the North becomes totally dormant, stands any winter, bears younger and fuller. Please write for new catalog. Ex. paid. Agts. wanted. F. T. RAMSEY, Austin Nursery, Austin, Texas.

MALLEABLE STOVES

COOKS AND RANGES—$5.00 CASH and $5.00 EACH MONTH buys direct from foundry. Nonbreakable—everlasting. The Best in the World. Quick bakers. Fuel Savers. Any kind of fuel. Write for Malleable Magazine (free) and learn advantages of Malleable over ordinary kind.
MALLEABLE RANGE FOUNDRY,
Orchard Street, St. Charles, Ill.

Government Positions!

25,566 Appointments were made to Civil Service places during the past year. Excellent opportunities for young people. Each year we instruct by mail hundreds of farmers' sons who pass these examinations and receive appointments to life positions at $840 to $1200 a year. If you desire a position of this kind, write for our Civil Service Announcement and learn how you may secure it. It will be sent free. Mention this paper.
COLUMBIAN CORRESPONDENCE COLLEGE,
223-25 Pa. Ave. S. E. Washington, D. C.

We Offer At $6.98 This Heavy Weight **Ulster**

Sizes 34 to 42 Weight of Coat 5 lbs.

Guaranteed to be better value than you can secure in your own home town for $10.00 or $12.50.
DESCRIPTION—This coat is made from all wool heavy weight, soft finished Raven Black or Oxford Color Frieze with soft nappy surface. Cut in popular style, 52 inches long, same as illustrated and full double breasted. Comes with deep storm collar and throat pad; two set in and two slash outside pockets, one inside pocket. Lined with excellent grade farmers satin. Arm holes are reinforced, and tailoring work is of exceptionally high grade.
Send Us $1.00 with your order, give size of overcoat worn and we will at once ship you one of these coats with privilege of examination. If not entirely satisfactory or if you do not think it the equal of overcoats retailed at $10.00 to $12.50 send it back at our expense and we will refund the $1.00. If you are pleased with it and you are sure to be, you can pay the express agent $5.98 and express charges. This is positively the best value ever offered in an overcoat and we recommend that you order at once as they will move quickly. Order No. AT8, give size worn and coat will be at your express office in a surprisingly short time. Our free Clothing Catalog containing complete description of this coat together with a full line of Clothing, Furnishings, etc., and it's yours for the asking. References any bank or business house in K. C.
KEMPER-PAXTON MERCANTILE CO.
Successors to
O. L. CHASE MERCANTILE CO.
Dept. M3 Kansas City, Mo.

CHRISTMAS NOVELTIES

The following Burnt Leather goods are of the finest quality and are of a sort that makes them acceptable as a gift.

Mail Pouch Letter-Holder	60c
Shaving Pad	45c
Whisk Broom and Holder	50c
Banner and Calendar	45c
Pipe Rack	60c
Match Scratcher	50c
Book Mark	20c
Coin Purse	35c

We pay postage and guarantee satisfaction.
J. E. STROYER & CO.,
1 Englert St. Rochester, N. Y.

Christmas Gifts

If you are undecided about your Christmas present to some friend or relative, send for one of our Watman Gold Fountain Pens. Regular price, $1.50, but we will send one on receipt of 50c, if ordered before January 1st, 1905. To the first purchaser in each county we will submit a proposition positively worth $15 a week to you for your spare time. Write at once.
JAMES C. WELLS, 15 School Street, BOSTON, MASS.

Moore & Rehsteiner

FOREIGN FRUIT IMPORTERS AND COMMISSION AGENTS
ANTWERP, BELGIUM
Cable address Moore (A. B. C. Code, 5th Edition)
Consignments of all kinds of fresh fruit solicited. Well established connection in Belgium and Holland. Best and cheapest ronte to South Germany, Switzerland and Anstria.

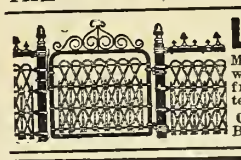
Apple, Pear, Peach, Plum Trees

and Strawberry plants. Trees 1 and 2-yr.-old, free from disease, at prices that will surprise you. Write for Catalogue and prices.
Stevenson, N. & P. Farm, Fordyce, Ark.

Plattsburg (Mo.) Nurseries—We offer a complete assortment of general nursery stock and will quote prices on any quantity. Also want local agents, especially for Mo., Kan., Neb., Ill. and Iowa. Write for liberal cash terms. E. MOHLER, Plattsburg, Mo.

GOLDEN OPPORTUNITIES.

In the Pacific Northwest for farmers, fruit-growers, dairymen and stockmen. Cheap land, virgin soil, no droughts, no blizzards, no floods. To get reliable information regarding this wonderful country send 50 cents for a year's subscription to
THE RANCH, Seattle, Washington.



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Many designs. Cheap as wood. 32 page Catalogue free. Special Prices to Cemeteries and Churches. Address
COILED SPRING FENCE CO.
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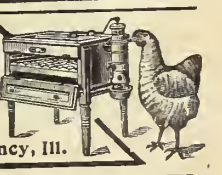
For Farmers
The man who wants to know ALL about telephones for farmers should send for free book F-101, "Telephone Facts for Farmers." Address nearest office
Stromberg-Carlson Tel. Co.
Rochester, N. Y., Chicago, Ill.

Better the Grit
better the digestion, health and laying qualities. Get the leader, **MICA CRYSTAL**
100 lb. bag, 65c; also Oyster Shells, 60c; Beef Meal, $1.80; Granulated Bone, $2.00; Beef Scraps, $2.25; Laying Food, $2.25; Chick Feed, $2.50. All in 100 lb. bags, f. o. b., Chicago. Cash with order. Write for large Poultry Supply Catalogue. Mailed free.
Darling & Company, Dep. 33, Union Stock Yards, Chicago.

$12.80 For 200 Egg INCUBATOR
Perfect in construction and action. Hatches every fertile egg. Write for catalog to-day.
GEO. H. STAHL, Quincy, Ill.



Mrs. Rhodes Fruit Jar Opener
Loosens rubber from jar and cap unscrews easily, no breakage. Postpaid 25cts. Agents wanted. Rhodes Mfg. Co., Grand Rapids, Mich.

Maj. Holsinger's Department

Seedling Peaches.

Ye editor is something in error as to those seedling peaches. He said "they were grown in the center of a large block of Salway." That is true of the first lot but, mark you, the Gibbs peaches, or those 52 seedlings, were from the Gano seedlings and were grown in a row alongside of many other kinds. Further, saw Mr. Gibbs since marketing those seedlings, of which there were 900 baskets from 52 trees, bringing an average of 40 cents a basket, or $360, from say one-third of an acre; as peaches can be planted 150 trees to the acre—$6.10 from each tree—not bad for seedlings.

Now, don't understand me to ignore budded sorts. I would rather plant budded Salway than seedlings, for the reason of so many becoming cling. Your orchard, if of seedlings, will be all mixed up, free and cling.

Again, the reason of "seedlings being generally an inferior lot" is because of the kinds of seed used. It is a fact that most nurserymen buy Southern seeds that are an "inferior lot," for the reason that they (the southern seeds) often grown for the distillery, are only about one-third the size of our better budded sorts and are much more likely to germinate, as these seeds are usually perfect, while the budded are often dormant—often without plts.

October Meeting of the Missouri Valley Society.

The society met in Edwardsville, twelve miles west of Kansas City. The rain of the previous day had settled the dust and made the drive a pleasant one. The bridge over the Kaw has been rebuilt, being elevated so that in future it will be above high water. The old iron structure, which cost the county some $75,000 still lies in the river, a mute spectacle of the worst flood known to civilization in this part of God's heritage. Nor was the bridge the only evidence of this terrible disaster. The Kaw bottom at this point, over a mile in width, when overtaken by this terrible visitation, was a veritable paradise. Crops of all kinds and good farm houses and homes, denoting the thrift of the owners, where contentment reigned, now has changed—vacant houses, farms have disappeared and the fertile soil covered with white sand to a depth of from one to four or more feet. No effort has been made to reclaim this once fertile bottom land. As a consequence these fields are grown to tumble weeds, cockle burr and sunflowers. As these weeds grow luxuriantly, this query came to me: Wouldn't crops grow if planted and cultivated upon these sand dunes? These lands that before the flood were valued at $200 per acre, are now practically worthless in their abandonment. When we tihnk how widespread these conditions are we can get some idea of the terrible loss sustained by "semi-arid Kansas"—(Secretary Wilson).

Where the conditions in the valley were more favorable there are at present many acres of potatoes, cabbage, turnips, corn and alfalfa. One of the best gardeners in the valley is Clarence Mead. His land lying near Muncie was above the flood of '03. Having much of his farm in potatoes, prices being high he reaped a bountiful harvest. This year he seems to have a large crop if the numberless sacks of "spuds" count for anything. These Kaw bottom lands bring a rental of $8 to $10 per acre.

At Bro. Edwin Taylor's everything has gone to alfalfa. It was truly a beautiful sight to see such luxuriant green as his alfalfa presented. Very few apples were seen on our route.

Arriving at Edwardsville, we met quite a number of our horticultural friends. Owing to the obstinancy of our railroad many of our people were deprived of the pleasure of coming, as they would not stop at Edwardsville for an accommodation.

Here let me digress. Who makes it possible for railroads to do business? It is the agriculturist and horticulturist. How much accommodation is offered them? Nlt. I can name a couple of politicians who can command the attention of railroads who have never produced anything of merit. Why is this? A couple years ago I was a candidate for a high office—governor of my state. The chairman of the state committee essayed to get passes for me, same as were granted to both Republican and Democratic candidates. He was refused. When asked if it was not a fact that they had issued passes to the others, they answered, "Yes, but your man can't give anything; why should we be concerned about him?" Pasess, then, do mean bribery and corruption. I hope for the time when the pass system may have passed, and that all may be equal on railroads as well as before the law.

But what about the meeting? The dinner—well, if there ever was a better one, it has not been my lot to have enjoyed it. Bro. Gano said he "hadn't met its equal even at the World's Fair." To this sentiment (this being a Quaker neighborhood) all said "yea verily." One of the features of the dinner was roast pig and pumpkin pie. How it makes my mouth water even now!

Dinner over, George W. Holsinger, president, in the chair, Mrs. G. L. Holsinger by request acted as secretary, reading the minutes.

Hon. Edwin Taylor read a very humorous paper on "The Disposition of the Apple Crop," which we secured for The Fruit-Grower. Later Mr. Taylor wrote that the paper was not prepared for publication, but simply to read before a few friends; that some of the statements sound different in cold type from the way they did when read at the meeting, and he asked that it be not published. Parts of the paper, however, are so rich in humor, especially to many of us who are not troubled with the problem of disposing of our apple crop, that we risk the publication of part of the paper, at any rate. It follows this report of the meeting.

After the paper was read, Mr. McAfee asked Mr. Taylor if he could be good and serious at a funeral, and the senator replied that he thought he could if the funeral were his own.

The discussion following the paper took a wide range, as do all our papers.

Mr. Wilson said that he recently visited Reno County, Kansas, and that apples were so plenty that the farmers could not sell them with profit; that the apples were good in quality, but no buyers in sight.

C. V. Holsinger, who had just returned from the World's Fair, reported that that Mr. Schell, superintendent of the Kansas exhibit, told him that the Messrs. Yaggy had turned down a $40,000 offer for their apples, they having 500 acres, and that the crop was very fine.

Mr. Espenlaub had just visited an orchard only a couple of miles away that had as fine a crop of York Imperial as any he had ever seen. Another orchard that showed up well, the two outer rows being Wealthy, were very full, but there was nothing else in the orchard.

We took occasion to remark the importance of the lesson to be learned—what to plant. That where there were Yorks there were apples. Our Yorks, a good half crop, sold at 75 cents a bushel.

As to the Wealthy, it was the best apple introduced in the last quarter of a century. It was what the Ben Davis had been—originating in Minnesota, it was necessarily a summer apple here; it bore young. Last season I set a two-year-old tree on which the same season were developed three well formed apples. The Wealthy bears full crops, and is a good eater and cooker. Its habitat is from Canada to Texas. The nurserymen raised a shaft to Mr. Gideon, who originated it and brought it into notice.

Mr. J. L. Williams (there is only one J. L.) rose to a point of order, taking exceptions to what we said of the apples shown at our last meeting being an "indifferent lot." As Mr. Williams had shown all the apples at that meeting it reflected on him, and now he proposed showing some fine specimens, which he did, same being as onery a lot as could be found. Last year Mr. Williams had over 4,000 bushels last year. This year, nothing.

In answer to a query, I said I was invited to Amoret, Mo., to see an orchard of 500 acres, many of which were Jonathan, which were denuded of foliage, but there were leaves on the ends of all the twigs that seemed healthy, as did the bark of the tree. Now what was the condition of those trees? Were they sick, and what did they need to help them?

NATIONAL BERRY BOX

OBLONG OR SQUARE STYLE

No Nailing
No Waste
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No Splitting
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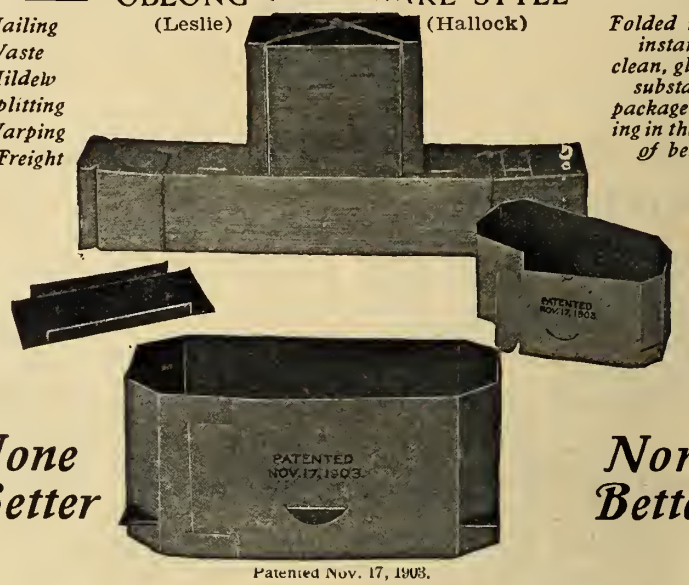
Less Freight

(Leslie) (Hallock)

Folded in an instant—a clean, glossy, substantial package, aiding in the sale of berries.



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Made of tough Folding Paper stock, coated with **Parafine Wax** on **both** sides to **withstand moisture** and **prevent Mildew.** Owing to the **great demand** for the **National Berry Box,** from nearly all states of the Union, we have arranged to manufacture same with special prepared machinery, enabling us to sell at competitive prices, **considering lighter weight,** hence **less freight; no nailing, no waste,** there is **no package** on the market that **equals** it. Price, $3.00 per 1,000 in carload lots, f. o. b. Kansas City, on any **orders received this fall,** and for **spring delivery.** Order early to avoid rush and possible disappointments. Address,

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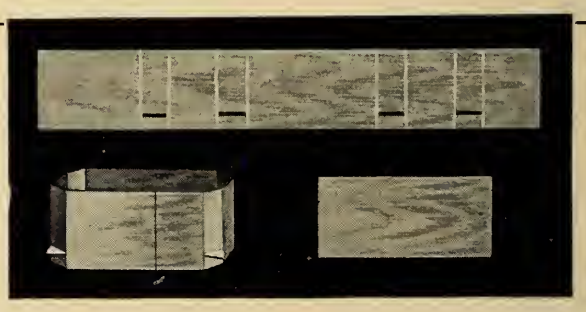

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IN THE FLAT OR MADE UP

We make all kinds of boxes and crates for berries and other small fruits. Also Climax Baskets, Bushel Stave Baskets and other styles of fruit packages.

The highest quality and the lowest prices. We make prompt shipments. Large catalogue free—send for it.

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South Haven, Mich. Jonesboro, Ark.

J. B. WILLIAMS CO. BARBERS BAR SOAP

Now You See It

No magic about it except the magic of easy shaving. Note well the form and take no substitute for

Williams' Shaving Soap

It's rich creamy lather makes light work of shaving men with strong, wiry beards.

"The only Soap fit for the face." Sold Throughout the World.

Want to try it? We will gladly mail you a trial tablet if you will send us a two cent stamp to pay postage, and mention this paper.

THE J. B. WILLIAMS CO.
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We Believe in Protection

TREE PROTECTORS will protect your trees from rabbits, mice and borers; will also protect the stems from sun scald and can be left on during the summer, and will not injure the tree.

The cut represents our Tree Protector after having been applied.

Same are made of veneer, and are pronounced the cheapest and easiest applied of anything ever used.

St. Louis Basket and Box Co.
Second and Arsenal Sts., **ST. LOUIS, MO.**

One Million

Cholce Apple and Peach trees to offer for Fall. Also full line of all other kinds of Nursery Stock. Get our prices before placing your order. We will save you money. Wholesale catalogue now ready—send for copy

TREE PROTECTORS at $5 per Thousand.

Send for descriptive circulars and testimonials.

Hart Pioneer Nurseries
Box E, Fort Scott, Kas.

THE DAVIS WIRE FRUIT
Tree Protector

The Best in the World. Easy to put on. Trees grow natural and never bothered by rabbits. Write for circulars. Pat. Jan. 1, 1901.

JOHN W. DAVIS, Jr. CLARKSVILLE MISSOURI

Immune Hogs

By feeding the sow Ridgway's Vaccine—10 cents a litter—the pigs are vaccinated before birth, hence are born **cholera proof.** One million successful tests, 10,000 strong testimonials. In further proof will ship my own pigs and expose anywhere in sick cholera herds, **at my own expense.** Agents wanted.

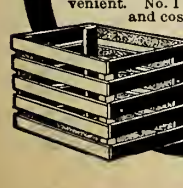
Robert Ridgway, Box F, Amboy, Ind.

ONE MAN'S PAY SAVED

Where three men were formerly needed to gather and pack fruits and vegetables, only two are now required when our ventilated

BUSHEL CRATES

are employed. They keep fruit in better condition. These crates are strong, staunch, durable, neat, clean and convenient. No. 1 Crate is extra heavy and costs 11c. No. 2 Crate is medium heavy and costs 9c. We send booklet 18, free.



GENEVA COOPERAGE CO.
GENEVA OHIO

Mr. Espenlaub: "What growth have they made this season?"

I answered, "Eighteen to 24 inches."

Mr. Espenlaub: "Then I should say they are in good condition, and that the injury is overcome by the new growth of leaves and that the shedding of leaves was from mildew."

To this Mr. Gano assented, as did all the rest.

The committee on the death of our brother, Dr. Murphy, made its report through Mr. Cellar.

Mr. Taylor made some well-timed remarks, showing the doctor's influence in getting him and others interested in tree planting, especially evergreens, of which the hills and lawns show such an abundance.

As we said fare thee well, with the memory of Dr. Murphy in our mind, be could but say to Father Thompson, the patriarch of our society, "Who next?" He said, "God knows who next."

FRANK HOLSINGER.

Disposition of Apples.

The Kansas City Star sententiously observes that the girl who is able to hide her age don't have to. In similar profundity, I may remark that the man who has apples to dispose of this year don't have to be told how to do it. One of the most noticeable things on the market, I am informed, is the way the buyers increase as the truck decreases. And on the other hand, if there is lots of anything offered nobody seems to want it.

One of the most famous recipes for rabbit pie begins, "First catch your rabbit." And if some neophyte wants me to show him a way to dispose of his apples, let him first show me that he is troubled with apples to sell. The last year I was at school was at a Michigan institution where I had some chums who were from Ohio. In Ohio the apples then, and I dare say, now, grew ill-shaped, knotted as a blackthorn stick, scabby, ill-favored, like the lean kine of Pharaoh's dream, like—well, like most of mine this year, and about as scarce as mine this fall. And these Ohio boys nearly collapsed at sight of the big, fine, smooth, well-favored and abundant apples we used to have up in Michigan. It would have been more than poor human nature could stand not to have pointed out to those Ohio wanderers their mistake in being born away off in a country where the apples and the schools were both poor, as witnessed in one instance by their admission, and in the other by their tuition. Then, afterwards, I came to Kansas, and the fine, abundant, well-favored apples here lured me on in the apple deal. That deal was fairly satisfactory for awhile. But I began to wonder a few years ago, when the apples went wrong, all at once taking "the thumps," the scab, the triangles and extreme paucity, if the Ohio pomological mantle hadn't somehow fallen on us. I have troubles of my own, some secret griefs that I am not going to tell, but this much I am free to impart, that I shall have no trouble to dispose of my apple crop this year.

And yet I read that buyers are scouring the country in the East and picking up what apples they can for $1.00 per barrel. The buyers are helped out in this by the swelled-up reports from all the states about the apple crop. We are all made of clay, and it is fair to presume behave about alike under similar circumstances, and so I have no doubt that fruit men or fruit reporters habitually exaggerate the conditions and prospects of the apple crop before picking and the yield after picking. It begins as soon as the blossoms show, with something like this: "Kansas is one huge posey of orchard flowers. We are going to have the biggest crop of apples ever dug!" By the first of August it will be apparent likely that there won't be apples enough in Kansas to make our own pies, but our fruit reporters are all afraid to say failure—all but one—so they will put down 50 per cent of a crop where there is no crop—and a "bumper crop," where there are any to speak of, and then the apple buyers will meet in Cleveland and read those reports interspersed by music by the band, and then pass resolutions something like these: "Resolved, That the threatened over production of apples is on us now, good and hard;

"Resolved that the farmer who would ask more for his fruit this fall than just enough to pay for his barreis is an unreasonable pessimist."

Then they will go to Put-in-Bay to cool off. Our reporters should learn sometime that bloom don't necessarily mean fruit, and that it is best not to blow about an avalanche of fruit until the avalanche appears.

Speaking of "blow," wouldn't it be a sort of reasonable punishment for our sins of commission, as the old lady called them, if every horticulturist in Kansas and Missouri should be forbidden to speak of his horticultural doings in anything but the past tense for a period of say five years? There would be lots of silence in localities if the pronoun, first person, singular number, could not be coupled with anything horticultural except what was actually done. It would be hard on the "goin'-to" family. They would have to shut up. It would give the whole game of talk over to the "use-to's." I have had much quiet enjoyment at times trying to strike a balance between the "use-to's" and the "goin'-to's" as to which would file the biggest brief or draw the longest bow. The horticulturist should go to the ant for wisdom, but also to the hen—the hen never cackles until she lays an egg.

When I lived down in Kansas I was much interested in a new style of corn culture that I heard frequent mention of. It afterward transpired that the subject was mostly introduced for my benefit, for me to "bite" on, as it were; and when they talked about cultivating their corn with the "short cut," or using the "short cut" on their corn, it is no wonder that a party who was shy pretty much all the horses there were, but one or two old plugs and was held down to one little, old home-grown bull-tongue did pick up his ears at the prospect of doing a whole field in a day with a "short cut." I was leary, excusably leary of those fellows down there, and I swam around that piece of bait several times before I concluded it was safe to swallow, and then I found that the "short cut" with corn was to sit on the fence and cuss the crop and call it "laid by."

I can't be sure about it, but it would be no surprise to me to hear that some of our horticulturists, after working for years on their orchards, only to find their trees deeper and deeper every year in all kinds of pomological ailment, with the orchard money all the time going out, and never or hardly ever coming in, I shouldn't be surprised, I say, if some of them had secretly desired some sort of a "short cut" to use on their orchards.

It is an old story of the farmer who was informed by a breathless messen-

Continued on Page Twenty.

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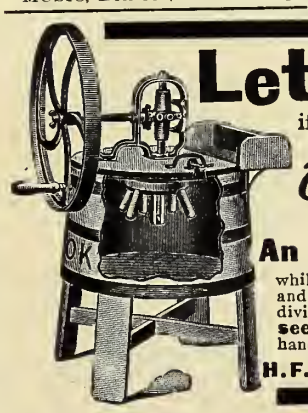

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Orchard Management.

Much has been written lately in the different agricultural papers, on the management of orchards. Intensive cultivation, the sod method, the mulch method and grass pastured by sheep have each been explained by their respective champions and each has proved to his own entire satisfaction that his method is best. The strange part of this discussion is, that if you will visit each of their orchards in turn you will find they have all secured the best results, and it will be difficult for you to decide between them.

This only goes to prove that there really is no one best method for all; different conditions of soil and climate may require different treatment, also that different means may be used to bring about the same results, so in discussing this question we should consider principles rather than methods. We should decide what we want to accomplish, and then taking into account all of our surroundings, and conditions, proceed in the easiest and most economical way. In starting an orchard we aim first to grow a healthy tree, with well developed root system, a strong trunk, and well balanced head, when our tree has reached the proper size and age we want it to bear regular annual crops of fruit. and at the same time keep up a reasonable growth of new wood.

What are the conditions necessary to grow a tree?

(1) A deep, well drained soil containing available plant food.

(2) An abundant supply of moisture throughout the year.

Other things being equal, soils retain moisture in proportion to the amount of humus they contain, the more humus, the more certain will be our supply of moisture. Therefore, we should take care of the humus in the soil.

(3) In the mater of plant food, an excess of nitrogen will promote wood growth.

(4) In a finely pulverized soil plant food is more readily available than in a coarse or lumpy or compact soil. Cultivation helps to set free plant food in the soil. They decay of vegetable matter in the soil sets free plant food.

(5) A mulch of any kind spread over the surface helps to conserve moisture. This may be either a dust mulch, formed by shallow cultivation, or some coarse material spread over the surface.

(6) Any crop growing on the ground under the trees will use some of the moisture and some of the plant food. If we will bear in mind the above well-known facts, we can follow either method with perfect confidence. If we cultivate we must plow down cover crops frequently to keep up the supply of humus, or in a short time the mechanical condition of our soil will be such that it will dry out in summer and freeze deep in winter, and if our trees do not die they certainly will not make a satisfactory growth. If we grow sod we must remember that the grass is taking up part of the plant food and part of the moisture and we must either furnish a fertilizer rich in nitrogen, or a mulch, or both as the case may require, and we can readily see what is needed by watching the growth of our tree, which should be continuous and uniform each year until it has reached bearing age, when its needs will be entirely different.

What are the conditions necessary for the production of fruit?

Anything that will retard the growth of the tree temporarily will cause it to form fruit buds and take on the fruit bearing habit. Thus by seeding to grass, a portion of the nitrogen and soil moisture will be taken up by the grass and the growth of the tree checked proportionately.

(2) A diet containing less nitrogen, and more phosphoric acid which is needed for the production of the seeds, and more potash for the growth of the pulp surrounding the seeds and to add color to the fruit, and to make the flesh firm, so that it will bear handling better and keep longer.

After the tree has acquired the bearing habit it should receive annual applications of potash and phosphoric acid, as the fruit sold each year removes large quantities of these two elements, and if it does not show satisfactory wood growth during any one year, it should receive a dressing of barn yard manure spread in a circle over the feeding roots. We may be forced by circumstances to change the method we have chosen. If we are cultivating our orchard we may find the limbs interfering with us and conclude to seed it down, or if mulching the mice may become numerous, and force us to abandon this. The statement made by one writer recently that if you want to have sod in your orchard when the trees come to bearing you must plant the young tree in sod in the hard ground, because the tree in cultivated ground is deep rooted, and the feeding roots are so far down that they will die if covered with sod, is all bosh. The tree is constantly making new feeding roots and throwing them out wherever they can find the most food, and it will adapt itself to the changed conditions in one year. The writer has in mind an apple orchard of twelve acres planted thirty-three years ago, that is a living proof of this assertion, a brief description of which may not be amiss at this time.

The soil is a sandy loam. Before planting, the field was plowed twelve inches deep with a mould-board plow, followed by a subsoiler that ran twelve inches below the bottom of the furrow, so that the ground was thoroughly stirred twenty-four inches deep. Apple and peach trees were planted in the fall of 1871, and market garden crops grown between the trees for three years, at which time the peach trees began to bear. Then for seven years the orchard was cultivated without crops, and there ended the life of the peach trees. The apples needed the whole space and the peach trees were taken out. Strawberries were grown for three years and being heavily mulched each winter with stable manure the ground was very rich, the apple trees were large and thrifty, but gave no sign of profitable crops, although thirteen years old, so the orchard was seeded down to wheat with timothy and clover; a heavy crop of wheat was taken off the first year; the second year two crops of hay were removed; the next year one crop of hay was taken off and the trees bore their first full crop of apples. Since that time the ground has never been plowed. It has been fertilized each year with potash and phosphoric acid; twice it has been dressed with stable manure, twice it has been limed at the rate of thirty bushels per acre; a few years ago daisies made their appearance, so for two years a flock of sheep was borrowed and pastured for two weeks in June. For the past four years the grass has been allowed to grow up and die and fall down with the leaves from the trees, being neither pastured nor mowed. Since 1889 it has been sprayed from once to four times each season with Bordeaux mixture and paris green, as the weather and press of other work would permit. Since this orchard began to bear, about eighteen years ago it has failed entirely only two years. Once the blossoms were killed by a late frost and once they were all drowned by heavy rains. The only trees missing in the orchard today are some four or five Kings, which were killed by the canker which ussually attacks that variety, Even on the off years the crop never drops as low as 1,000 bushels. So here is at least one instance of an orchard cultivated when young and seeded to grass, when fifteen years old, that not only was killed by the change, but apparently benefited. G. H.

Joseph W. Thomas, one of the best-known nurserymen of Pennsylvania, died near Norristown, Pa., recently. He was seventy-three years of age, and the nursery business will be continued by a son who was associated with his father in the firm.

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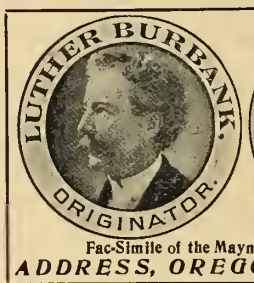

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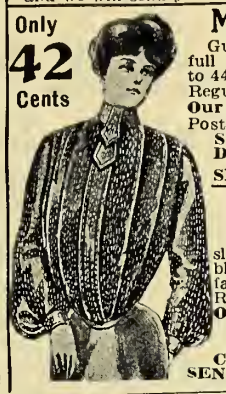

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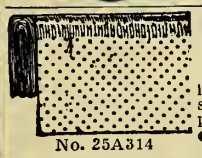

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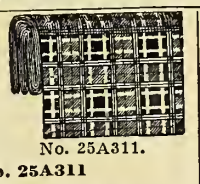

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Pure wool stock; white silk binding; fancy stripe combination borders; weight, 3½ lbs; size, 56x74 in. Retail price, $3.00.

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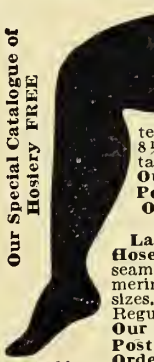

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21A906

Ladies' Extra Quality Fast Black Cotton Hose; ribbed top, full seamless, extra splicing in heel and toe. Black; guaranteed stainless. All sizes, 8½ to 10. Regular retail price.....25c

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21A902

Men's Hosiery

Seamless socks, extra heavy, double heel and toe; has white ribbed top, heel and toe. Black only. Sizes 9½ to 11. Regular retail price.....17c.

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Men's Extra Heavy Shaker Knit Socks; long ribbed leg, extra heavy, special spliced heel and toe. Sizes, 9½ to 11. Colors blue or gray. Regular retail price.....35c

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39 c

Ladies' Heavy Knit Cotton, Fleece-lined Underwear. Made of fine, strong, combed cotton yarn. Is extra warm; good weight. Ribbed cuffs and heavy fleece-lined. Perfect fit. Undervests or drawers. Sizes, 30 to 42. Regular retail price, garment 75c

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Children's Extra Heavy Undervests. Made of long fibre Australian wool yarn.

Sizes	16	18	20	22	24
Retail	35c	40c	45c	50c	55c
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Sizes	26	28	30	32	34
Retail	60c	65c	70c	75c	80c
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Postage, 4c per garment extra
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ONLY **39c**

Men's Underwear

Men's Fleece Lined Shirts and Drawers. Good heavy weight. Extra quality heavy fleece lined, finished with never-rip seams, ribbed cuffs, pearl buttons; sizes, shirt from 34 to 44 and drawers 30 to 42. Color, gray or blue mixed. Retail price, per garment 65c.

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Order by No. 21A918.
State size and color.

MEN'S FURNISHING GOODS CATALOG FREE

English Pure Wool Jet Black Thibet Suit

We guarantee this fabric to be a genuine Entrekin Thibet, made by the oldest weavers of black goods in England. It is absolutely pure long stock wool, full 18 oz. in wt., color warranted a fast and unchangeable black. This is the greatest value ever offered in a suit of clothes. Sizes 34 to 44 in. breast measure; 30 to 42 in. waist measure; 30 to 36 in. inseam measure It has every appearance of a custom-made suit.

Retail price $15.00. **$8.75**

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Men's Standard Satin Calf Shoes. Uppers are satin calf skin. Soles, counters and insoles are warranted solid. Widths, E and EE; sizes, 6 to 11. Regular retail price, $2.50.

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Heavy Granite Carpet; reversible; colors, rich green with oak leaves, and rich red with tan and olive leaves. Width, 36 inches. Retail price per yd., 30c.

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OAK Heater **$6.95**

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COOK STOVES $4.45 up to $16.95.

A good Sheet Steel Heater for 85c; Oil Heaters from $2.85 up.

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Full size; staunch and durable; good plain sewer; without attachments. Your local dealer's price....$15.00

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Note—The publisher of The Fruit-Grower is thoroughly informed as to the responsibility and reliability of the First National Co-operation Society, and knows it will fulfill its obligations to the letter. Our readers need have no hesitancy whatever in sending their orders to the Society.—Ed. Fruit-Grower.

Illinois Horticultural Meeting.

Secretary Bryant writes that the program of the Illinois State Horticultural Society has not yet been completed for the meeting to be held at Bloomington, Dec. 14 to 16. He sends a list of papers which have been arranged definitely, as follows:

"Some Winter Studies of Apple Orchards," Prof. J. C. Whitten, Missouri.

"Pansy Culture," Wm. Toole, Wisconsin.

"Commercial Floriculture," Leonard H. Vaughan, Chicago.

"Experiments and Observations of the Season of 1904," W. S. Perrine.

"Beekeeping and the Horticulturist," Mark Havenhill.

"Results of State Experiment Work for 1904," Prof. C. S. Crandall.

"Raspberries," H. L. McGee.

"Lessons in Horticulture at the World's Fair," J. W. Stanton.

"The Food Values of Fruit," Miss Margaret Mather.

"Ornamentation of Home Grounds," Bruno Nehrling.

In addition to the foregoing, the following topics will be discussed: "Commercial Orcharding," "Thinning Fruit," "Close Planting of Orchard Trees." The question box will be a feature, as usual.

For a number of years the annual meeting of the Illinois society has been held at Champaign, but this year it goes to Bloomington, where there is considerable local interest. The meetings of this society are always among the very best meetings held in this country. The papers are always of a high order, the discussion of the "first principles" of fruit culture being left to the district societies, and more weighty problems discussed at the meeting of the state society. The attendance should be good this year, as Bloomington is easily reached, and the interest throughout the state insures a good meeting.

Changes in Western Methods.

The present season has been an unsatisfactory one in the apple business. It has been unsatisfactory, of course, to the man who had no crop, but it has also been disastrous to many persons who had fruit to sell. In the East many growers lost a portion of their crop, because of the fact that when their fruit was ready to market, the buyers would not pay enough for it, and the matter was left open until a portion of the crop had been lost. In some parts of the West there were growers who had apples in a neighborhood where the general crop was very short. Owing to the fact that there was not a great quantity of apples to be had in the locality, buyers kept away, and unless the growers were prepared to handle the fruit themselves, they were at a loss to dispose of their fruit. And it is an actual fact that many growers were unable to sell their apples at a fair price, in a section of country where prices generally were ruling high. They were simply not prepared to pack their fruit and get it to market.

It seems to us there is room for improvement here. It may not be best for growers to pack their own fruit very often, but it is well to always be prepared to handle it in case this becomes necessary. One can always be more independent and can get a better price for his produce if he knows, and if the buyer knows, that he can handle the fruit himself if need be.

Lots of apple growers who have depended on buyers to pack their fruit every year have never learned how to pack apples. Much of the fruit which was packed by the growers this year is evidence of this. And yet this ought to be a part of their business. Why not give the subject of packng and grading apples a very important place on the programs of our Western horticultural societies and have some expert give an actual demonstration of how the work should be done? We say "Western" horticultural societies, for the reason that Eastern growers as a rule, know more about this branch of the business. This is a very important subject and will increase in importance as the crop becomes larger and as the buyers get their combinations effected to hold down the prices.

Vineyard Work.

We have had a very favorable season for ripening the wood of grape vines, so that pruning may now be done. This could be done any time while vines are dormant, but the idea is, that we start putting it off until we have more time, and thus it may be deferred until too late to be done properly. Such was my own experience the past season. There was so much work about the place that I had to do personally that it seemed I just could not get around to all the vines before the spring rush came on. This made it necessary to hire some one to do the pruning, which resulted in my getting less than one-half the profit from the vines not pruned by myself. Nothing is more important in fruit culture than the proper pruning of grape vines, and as soon as we have the time to do the work it should not be put off.

Trellises may be made now by those who fancy such a support. Such a support is all right for those who thoroughly understand how to prune, but not best for the amateur; as there is a great tendency to leave too much bearing wood, which is far more injurious to the vine than pruning too closely. There is generally less repairing necessary on a well-constructed trellis than in a vineyard where vines are supported by stakes, but on the other hand there is more labor necessary in the way of hoeing. If, however, good stakes are used, such as osage orange or black locust, and these properly set, there is little or no replacing to be done. The cultivator may be run both ways, which means cheaper and better tillage. When vineyards are cultivated but one way, the hoeing is often unavoidably neglected and the weeds and crust that form do much injury. Hoeing is slow and expensive work, and it often happens that ample help cannot be had at the time this work should be done. Cuttings may be made now and put away to callous. I make my cuttings about six inches long, and am careful to make a clean cut close to buds both on top and bottom of cuttings. Where cuttings are made on a large scale for so much per thousand, it is often the case that a cutting is made with almost every "cut." This results in a piece of unnecessary wood above the upper bud which, to begin with, is unsightly and gradually rots off, leaving a sore on the vine, which is more or less injurious. I have bought some such vines and found that they did not do nearly so well as vines of my own growing. Cuttings are usually tied in bundles of about one hundred and placed in a shallow pit, lined out in the nursery as early in spring as the ground will work well, for if left in the pit too late, the buds will swell and many will be broken off in handling. True, there are always reserve buds to take the place of buds rubbed off, but these are weak and often do not give best results.

It will soon be time to lay vines of tender varieties on the ground for winter protection. It is well to remember that Niagara is inclined to be a little tender, and I would not take any chances on so good a grape; better lay it down and be sure of a crop. It does not take long to do this. Vines need not be covered entirely, but just enough earth or other weight placed on them to hold them down.—E. H. Riehl, in Rural World.

Freak Fruits and Their Possible Value.

There are more than the usual number of newspaper reports of freak fruits this season. Several of the "freaks" have come to the personal knowledge of the writer. The matter would scarcely be worth considering were it not for the fact that now and then we get from abnormal forms valuable varieties and even new types of fruits. Thus the nectarine is an abnormal form of the peach, and the moss-rose is a "sport" from the common rose. Many varieties of cultivated plants have so originated.

Bud-variation is the technical name given to these "sports," as we commonly call them. Any unlikeness in a part of a plant of sufficient degree to attract attention is a bud-variation. There is an error current regarding bud-variation. Plant-growers consider them rare. This is far from the truth. An examination would show that every tree has branches differing in fruit, leaves, or flowers from other branches of the tree. It is only when these dif-

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Price List is Now Ready

The New Haven Nurseries

Business established 1872. Capital invested, $60,000.
Acreage devoted to the business, 420.

Over 2,000,000 Trees

All budded or grafted, by actual count, now growing in our Nurseries.

For Commercial Orchardists—All the leading sorts of known value, true to name, of Apple, Peach, Pear, Plum, Cherry, etc.

For the General Public—Everything to be found in a first-class nursery establishment, at lowest possible prices.

We Do Not Sell Culls or Trash—Nothing but the best is good enough for our customers. A low price is no bargain, unless you get quality. Anybody can sell worthless goods cheap.

Our Guarantee of Quality—YOUR MONEY BACK if goods are unsatisfactory.

We Pay the Freight on all orders amounting to $10 or more, and guarantee arrival of stock in good condition. In this way you know just what the trees or plants will cost you at your station. Write today for Catalogue and Price List.

New Haven Nurseries
NEW HAVEN, MO.

Hon. R. Dalton, a commercial orchardist of Ralls Co., Mo., and formerly custom house collector, Port of St. Louis, writes under date Aug. 1st, 1904: "I have been buying and planting trees for nearly thirty years. In that time I have bought fruit trees from many Nurseries, but I can in all candor and truth say you are the only people from whom I have bought trees when the trees were always true to name and possessed all the qualities of first class stock. I am somewhat particular, but in all our dealings for over thirteen years there has never been a point of difference between us. You have a good name and deserve it, and it has been honestly won."

ATTENTION, FRUIT GROWERS
How to Rid Your Orchard of San Jose Scale

The result of a half million dollars in experimental work.

Patented July 5,'04
Con-Sol
TRADE MARK
LIME, SULPHUR AND SALT.

Write for booklet. Valuable information on Orchard Spraying

Dilute one gallon of Con-Sol with forty gallons of water, hot or cold; spray with any spray pump.

A PLEASURE TO ANSWER INQUIRIES

AMERICAN HORTICULTURE DISTRIBUTING CO.
MARTINSBURG, WEST VIRGINIA

Tufts Pat'd Sectional Crate

Neat in Appearance. Well Ventilated. No mashed Berries. Displays Fruit to Best Advantage.
Examine the crate at the World's Fair in Indiana Exhibit, Sec. 14, Horticultural Building.
MANUFACTURING RIGHTS FOR SALE
Manufactured by
ELMER G. TUFTS - AURORA, IND.

Wanted—Apples, Potatoes, Onions
WIRE OR WRITE US WHAT YOU HAVE TO OFFER.
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We Pay Cash Weekly and want more salesmen Everywhere. We furnish a better outfit (FREE) than any other nursery, superior stock, lowest prices. Our men succeed where others fail. Write for terms.
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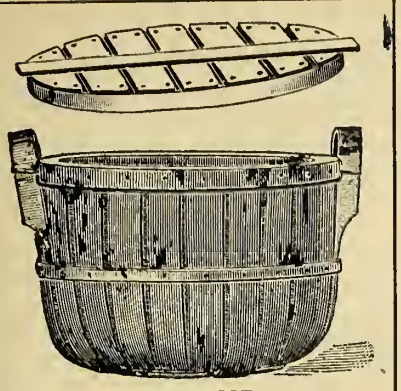

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One and a Half Bushel Baskets

With slat covers, for shipping seed corn and potatoes. We make a specially low price on these to shippers. One and a half bushel baskets are always worth first cost when they reach destination. A box or crate is worthless. Write for our catalogue; free.

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To the Wholesale Trade
For Season 1904-5, we offer

Apple Seedlings and Grafts

We make a specialty of this branch of the business and are exceptionally well equipped for handling it.
Write for Winter List issued Dec. 1st.

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E. S. WELCH, Prop.
Growers and Propagators of a complete line of General Nursery Stock.
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Our stock of plants and vines were never in better condition than at present time.
STRAWBERRIES—45 varieties.
RASPBERRIES — Cumberland, Munger, Kansas, Gregg, Cardinal, Miller, Red and Thwack.
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CURRANTS—Red Cross, North Star, Red Dutch and Cherry.
GOOSEBERRIES—Houghton.
50,000 GRAPES—One and two years—Standard varieties.
Get our prices before placing your order.

ELMHURST NURSERY
M. E. CHANDLER, Argentine, Kan.

The ROGERS

in the earliest of all Dewberries; bears heavy crops of large, firm fruit, that ships well and sells at fancy prices. It's flavor is unsurpassed.
THE ROGERS has passed the experimental stage. It has been sold in nearly every state in the Union, and is fast becoming the most popular Dewberry now in cultivation. My prices are reasonable and I guarantee all my plants to be genuine. Write for descriptive circular and prices. JAS. W. HAMLETT, Alvin, Texas.

3,000,000 June Bud Peach Trees

Budded from prolific bearing trees. We are exclusive wholesale, and sell direct to planters at wholesale prices. You can save money by buying from us. Trees guaranteed true to name and free from all diseases. State Entomologist's certificate with each shipment. Write for prices.
FLETCHER & HARRISON, Nurserymen and Orchardists, Cleveland, Tenn.

AUSTIN'S DEWBERRY

J. W. Austin, Pilot Point, Tex.

Original propagator and introducer. Headquarters for plants. Descriptive circular and treatise on dewberry culture, for your address on a postal card, if you please.

SWEET CIDER Can be had the year around by using
Ford's Cider Preservative.
It prevents fermentation and holds cider SWEET FOR YEARS; makes it pure, clear and healthful; no bad taste or smell; nothing equals it. PRICE, package, sufficient for three barrels, 50c, by mail. Dozen packages, by express, $4.50. Send order today and have it ready when the cider is made. Sample packages sufficient for 45 to 50 gallons, 25c. Address all orders to
FORD SEED CO., Ravenna, Ohio.

ferences are very marked that we notice them. If the variation possess merit not possessed by the rest of the tree, it is of commercial value and should be multiplied or perpetuated by budding or grafting.

The circumstances under which these variations are produced are not known and their causes, too, are wholly unknown. They are possibly the effects of the conditions in which the plant is living or has lived. Now and then we get similar abnormalities in the animal kingdom. Bud-variations are not cases of atavism, i. e. reverting back to an ancestral form. In a true bud-variation, the new feature is different from anything in the line of ancestors.

What should be done to perpetuate a desirable bud-variation? Where but one fruit shows the variation, as is most often the case, nothing can be done to preserve or fix the new character. But if a whole branch bears the new type, multiplication and perpetuation are easy by grafting or budding. The new characters are seldom reproduced from seed though occasionally they "come true to seed." They are, however, amenable to selection, and one can improve a variety originated from a bud-variation just as he can one coming from seed.

It has been found that buds taken from the part of the branch showing the new variation most strongly, tend to hand down the new character most certainly. It is a good thing to leave the variation on the parent as long as feasible, for other parts of the plant may, and likely will, show similar variation.

Those who fancy that they would like to be in at the birth of a new product of the vegetable world should look closely at fruit trees, ornamental shrubs, and all perennial plants for bud-variations. They may make their appearance where you least expect to find them. Once a bud-variation is grown into a tree, or a variety is established from it, no one can tell, except from the history, whether tree or variety came from seed or sport.—U. P. Hedrick., in Michigan Farmer.

A Living From a Town Lot.

In a small Western town some years ago there lived a man who thought that horticulture could be made profitable on a small amount of ground, says the World's Work. This man's capital was limited. The total area of land at his disposal was a little less than one acre. He had energy and ambition and a desire to make his efforts successful. The man selected as his two main crops strawberries and celery. One-fourth of an acre was devoted to strawberries, one-fourth of an acre to celery and one-fourth of an acre to miscellaneous garden vegetables, to be sold in the town. The problem was to handle these crops so as to secure the very highest returns for the outlay involved. No other help than that of the man himself was needed. The soil was ordinary, but was made rich by the application of stable manure.

The man developed a system which involved a shifting of crops each year. This, he gathered from what he could read, was necessary, first, to avoid diseases and insects; and, second, to rest the land. Eight thousand strawberry plants were put out on one-quarter of the acre, the plants all being grown in small pots so that they could be planted in the latter part of June, leaving his ground free up to that time for his miscellaneous vegetable crops.

The strawberries planted in June gave him a full harvest the following May and June, and from these plants the average yield amounted to $500 for his one-quarter of an acre. His celery he planted in the latter part of July on the ground that his strawberries had occupied. This celery was taken off in October, and the ground was therefore free for the next spring for his vegetable crops. His one-fourth of an acre of celery handled in this way gave him $400 average yield. His miscellaneous vegetables, grown in rotation, such as green peas, green beans, lettuce and crops of this nature, gave him $400 more, making his receipts from his three-quarters of an acre $1,300, of which approximately $400 was expended for fertilizers, necessary help, etc.

I send $1 for four new names and my own renewal I will want The Fruit-Grower as long as I live.—E. B. Gay, Griswold, Iowa.

Natural Cold Storage Cave.

Captain J. C. Briggs is the owner of a natural storage cave, about ninety miles from Louisville, Ky., and only a short distance from the Mammoth Cave. Captain Briggs is interested in orange growing in Florida, and will ship fruit to his cave and store it therein. Concerning this cave he says:

"There is a good wagon road from the railroad depot to and into the cave. Wagons can drive into it, unload or load, turn around and drive out. The front of the cave is forty feet wide and fifteen feet high. It is walled up with stone and timbers, but has two five-foot doors with grating over them for ventilation. The cave itself is 75 to 100 feet wide and 30 to 50 feet to the ceiling. The ceiling, sides and floor are solid rock and absolutely dry. It is floored with finely broken stone spread over with saltpetre, which aside from being a smooth and pleasant walk is a fine preservative. The cave temperature is 48 to 49 degrees the year around, and does not vary more than one degree from one year's end to another, no matter what the outside temperature may be. The capacity of the cave as a storehouse is fully 5,000,000 boxes. It goes without saying that the danger of fire in a stone cave is practically a negligible quantity and insurance is therefore unnecessary."

The "Miracle" Plum.

This is the title which has been given to one of Burbank's creations, which is a plum without the hard pit. The seed or kernel is there, but it has no hard covering. The Miracle plum has been sold to the Oregon Nursery Company, Salem, Ore., which also bought control of the Maynard plum, another Burbank's creations. The Miracle will not be offered on the market until a good crop of the fruit has been produced so that specimens of the plum can be well tested. A sample was sent to the Oregon Agriculturist, which says:

"The sample received was picked before it was mature, but appeared to be quite similar in quality to an Italian prune picked at the same stage of maturity. It suggests somewhat the damson plum and is intermediate in size between the damson plum and the Italian prune. It gives promise of being an especially valuable canning plum, as its size is suitable and it can be canned whole. Nearly all stone fruits are of much better quality when canned whole than when pitted, but the hard pits are objectionable. The Miracle plum will be free from the hard inedible stone, but will have the seed itself, which gives the desired flavor.

Uncle Sam Prescribes Fruit.

A booklet just issued by the department of agriculture contains the following valuable advice to the people of the United States on the eating of fruit—boiled down.

Common fruits are not properly appreciated as food. They have dietic value and plenty of it.

Fruits supply a diversity of sugar acids and the necessary waste of bulky material for the aiding of the intestinal movement.

Fruits and fruit juices keep the blood in healthy condition.

Fruit desserts should give pie a back seat more frequently.

Fruit and fruit juices are not luxuries, but a necessary addition to the dietary, both from the standpoint of health and economy.

Pays to Advertise All the Time.

The Smith Grubber Co., LaCrosse, Wis., has carried an advertisement in each issue of The Fruit-Grower for more than a year. They recently wrote that during the coming winter months they would use larger space, and added: "We will not miss The Fruit-Grower, for it has proven among the best 'pullers' for business in the country."

Moral: Place your advertisement in The Fruit-Grower—and keep it there.

O. F. Griffith, Cedar Falls, Iowa, sends the subscription of Peter McNalley, and says Mr. McNalley is a good raspberry grower. He grows the Hillborn and Kansas for blackcaps and Canada Red as a red variety. The first named variety has yielded as high as 6,000 quarts to the acre, which sold readily at $2.50 per crate.

$19.90 BIG PARLOR ORGAN

FOR $19.90 we furnish this big handsome solid golden oak Parlor Organ, stands 6 feet high, 4 feet long and 2 feet wide, latest style for 1904-5, guaranteed the equal of organs sold by others for nearly double the price. Shown by a large picture and fully described in our big free Organ Catalogue sent to any one for the asking.

AT $25. 95 to $51.95 we sell other beautiful ORGANS, all made in our own organ factory and sold direct to you at only a little above actual manufacturing cost, at much lower prices than any dealer can buy.

WHY we can build and sell the best ORGANS in the United States for so much less money than all other manufacturers and dealers, is all explained in our new free Organ Catalogue.

OUR NO MONEY WITH ORDER PLAN, FREE TRIAL OFFER, OUR TWENTY-FIVE YEARS BINDING GUARANTEE, all fully explained in the Big Free Organ Catalogue sent on request.

HAVE YOU ANY USE FOR AN ORGAN? If not, have you a friend who could use an organ if the price was low enough, the offer liberal enough, the greatest chance ever known? If so, cut this ad out and send to us, and the catalogue, our several propositions, and our new and most astonishingly liberal offer ever made, will all go to you free by return mail, postpaid. WRITE FOR OUR FREE ORGAN CATALOGUE AT ONCE. Address,

SEARS, ROEBUCK & CO., CHICAGO, ILL.

NURSERYMEN'S *Fruit and Ornamental* PLATES

An experience of over 30 years and our unequaled facilities have made our plates leaders. They are used by the leading nurserymen and agents in the United States and Canada. A trial order will convince you of their superiority. Send for catalogue and prices.

M. Brunswick & Co.
ROCHESTER, NEW YORK

CHERRY TREES

If you are going to plant a Cherry orchard this year let us furnish you with our One-Year Trees. They are low-headed, well-rooted, stocky trees—just what you want. Write us for an illustrated circular telling all about them. We also have a general line of nursery stock. We can save you money.

H. M. Simpson & Sons
1851. Vincennes, Indiana. 1904.

Apple Seedlings Root Grafts

of the highest grades at the lowest prices. Also a complete line of general Nursery Stock.
HAWKEYE NURSERIES.
W. H. Kauffman, Prop. Stratford, Iowa

"Not a Worm Remained"

Mr. H. F. Jackson, Clinton Co., Ohio, writes: "'DISPARENE' gave perfect satisfaction. The canker worms were quite thick in my orchard, but in three days after using your 'DISPARENE' there was not a worm left." Book Free. BOWKER INSECTICIDE CO., Boston, Mass.; MO. VALLEY SEED CO., St. Joseph, Mo.

4,000,000 Peach Trees
Tennessee Wholesale Nurseries
JUNE BUDS A SPECIALTY

No agents traveled, but sell direct to planters at wholesale prices. Absolutely free from disease and true to name. Write for catalogue and prices before placing your order elsewhere. We guarantee our stock to be true to name. Largest Peach Nursery in the World. Address
J. C. HALE, WINCHESTER, TENN.

TREE PAINT For Borers, Rabbits, Insects, etc. Best, cheapest tree protector out. Is a purely vegetable and mineral compound. 50,000 trees protected last year; get special offer. Agents wanted.
WM. ROBINSON, Bowling Green, Mo.

FOR CLOSE PRICES ON
Apple, Plum, Pear, Cherry, Peach and Grape Vines
WRITE
WOLVERINE NURSERIES
Wholesale & Retail, Paw Paw, Mich.
G. E. PRATHER, JR., Propr.

Graves Peach

An early yellow freestone, ripening a week before Crawford's Early. Trees from the originator have seal attached. Prices free.
W. J. GRAVES, Originator
PERRY, OHIO

Gardening Department

This department is conducted by Henry Field, a market gardener and seedsman of Shenandoah, Iowa, in the southwestern part of that state. Besides his regular garden, Mr. Field has extensive experimental or trial grounds, the reports from which appear exclusively in The Fruit-Grower. Fruit-Grower readers who want information concerning any garden problem are invited to write to Mr. Field and tell him their troubles. He will be glad also to have you send samples of new sorts of vegetables and flower seeds for testing in his trial grounds.

Potato Results.

We have just been digging the potatoes and I suppose the Western Fruit-Grower people will be interested in the results. My best potatoes were on a piece that had been in orchard for about ten years. It was cherry and plum that had been killed by the blight. The ground was cleared in the winter and after all the roots had been grubbed out was plowed and worked down very fine in the early spring. As the orchard had been seeded to clover it was ideal potato ground. I planted it with White Ohio, grown in the Red River Valley, using fourteen bushels of seed to the acre, and mind you, that was seed that cost me $1.40 per bushel wholesale. It takes nerve to sink that much good money in a potato patch. The yield, however, has justifed the expense, as we got about 400 bushels to the acre of the finest potatoes I ever saw. Fruit-growing is all right, but this crop of potatoes is paying me better than any crop of fruit I ever got off the orchard and it did not take me five years to get it started, as it did the orchard. In some extra rich spots the potatoes showed a yield up to 600 bushels per acre, but a wet spot across one end cut down the total yield.

The next best potatoes I had were some Early Michigans on low land. The ground was naturally rich and had been in pasture for a number of years. The sod was broken in the spring and we had a terrible time getting it worked down in shape. We finally got it ready, and planted half an acre, when the rain stopped us. It was over a week before we could get at it again and by that time the season was getting pretty late. I knew that early potatoes should be planted very early for good results, but I was really startled at the difference in the yields. The first strip made over 350 bushels per acre and the rest of the field only about 150. So much for not getting a crop in on time. It was a straight loss of 200 bushels per acre. Next spring when it comes to planting potatoes, remember this and try for that other 200 bushels.

Early Ohio and Banner have both done well for me, too. I cannot give the exact yield, but it is right up close to the others. Pat's Choice is pretty good on yield, but rather scabby, although I took every precaution to keep them free from disease. They seem to be predisposed to scab. On the rest of my crop I had absolutely no scab. In fact, I have had none to speak of for several years. Of course I have to watch out and plant on ground that has not been infested with scab, as the contagion will stay in the ground for a number of years. Then, all my seed, whether it looks scabby or not, I dip in a solution of corrosive sublimate, using one part of the chemical to 1,000 parts of water. This strength is harmless to work with and is sure death to the scab. Try it next spring.

German Potatoes.

The Germans have a great reputation as potato growers and last spring I sent there and got a few of their best early potatoes. I am sorry to say they are not equal to the earliest grown here. The yield is fairly good, but they are not as early as the best of ours and are not at all handsome in appearance, being purple in color like the old Blue Victor. I expect to try them again and it may be they will do better next time. I also had some seed from New Brunswick, but they are poor stuff.

Good Money In Onions.

I met a young man the other day out selling a load of onions among the farmers, and he reported quick sales at $1.00 per bushel. He bought five pounds of seed in the spring, paying $1.00 per pound for it, and planted an acre, but as he was running an 80-acre farm alone he let part of the acre get weedy and lost it. He managed, however, to save most of it, working principally at odd times, and secured a crop of nearly 400 bushels of fine onions. They were mostly Prizetaker and Red Globe, and as pretty a lot of onions as I ever saw. That acre of onions will pay the rent on his whole 80-acre farm and he will hardly miss the time he put in at it.

Setting Multipliers In the Fall.

A reader asks if it is safe to set multipliers and other onion sets in the fall. Yes, I prefer to set them now to setting in the spring. There is a chance they may freeze out, but they are nearly sure to live though, and if they do they make much earlier and better bunch onions.

Fall Setting of Strawberries Again.

A subscriber in Nebraska asks why it is that all the Eastern farm papers advise setting strawberries in the fall if it is such a failure as I have claimed and as other strawberry men claim. The truth is that it is a success in some parts of the East and especially in the region of Philadelphia and New York. The fall there is wet and the winter not so severe as here, so the plants live through nicely. The editors of these Eastern papers forget that this United States is a big place and they imagine that their little corner down east is a sample of the whole thing. Here is where the advantage comes in in having Western farm and fruit papers with experienced and advice suited to Western conditions.

Two Ears to the Stalk.

A reader writes to ask if I advise saving the seed corn from the stalks that bear two ears in preference to the ears that grow one to a stalk. Yes, I believe that two ears are better than one, even if not quite so large. There is lots of difference of opinion among good farmers about this and I admit that one good ear is better than two nubbins, but with the present improved varieties of corn, good corn can be had that will make two good ears to the stalk nearly half the time. I would like to hear from others about this.

The Terrible Cabbage Snake.

There has been great excitement here over a little harmless, white, wire-like worm found on the cabbage. It is absolutely harmless, and is similar to the so-called "horsehair snakes" we used to find in spring water, and often found in a tightly twisted ball in fresh plowed ground. Some people, however, magnified it into a terrible snake, and the newspapers, ever ready for a sensation, kept it going, till people were afraid to look a cabbage in the face for fear a serpent should jump at them. Although only two or three were found in this locality, and those not near as ferocious or mean looking as an ordinary cabbage worm, the people refused to buy cabbage, and thousands of the finest cabbage went to waste. Gardeners depending on the cabbage for a money crop were badly crippled, so the "cabbage snake" did cause sad havoc in one way. HENRY FIELD.

FARM TELEPHONES

BOOK FREE — How to put them up—what they cost—why they save you money—**all information and valuable book free.** *Write to*
J. ANDRAE & SONS, 869 W. Water St., Milwaukee, Wis.

We Offer $1,000

For a Disease Germ That Liquozone Can't Kill. A 50c Bottle Free

Don't you know that a germ disease must end when the germs are killed? And that it cannot be cured until then? Then why use medicine for what medicine cannot do? Liquozone alone can kill germs. Will you let us buy you a 50c bottle to try?

On every bottle of Liquozone we publish an offer of $1,000 for a disease germ that it cannot kill. We do that to convince you that Liquozone does kill germs.

Think what that means. Every modern physician knows that nearly all sickness—the little ills and the big ones—are caused by germ attacks. They know that those germs must be destroyed before the sickness can end. And they know that drugs never kill inside germs.

Those modern physicians are now using Liquozone. And millions who were sick—like you, perhaps—are well today because of it. The cured ones are everywhere; some are your neighbors, your friends. Won't you ask them about Liquozone?

Don't cling to the old ways blindly, when your health is at stake. There is a new way to cure sickness, by destroying the cause. And we will gladly pay the cost while you try it.

What Liquozone Is

Liquozone is not a medicine. It is not made by compounding acids or drugs, nor is there any alcohol in it. Its virtues are derived solely from gas—largely oxygen gas—by a process requiring immense apparatus and 14 days' time. Each cubic inch of Liquozone requires the use of 1,250 cubic inches of the gas.

Liquozone is the result of a process, which, for more than 20 years, has been the constant subject of scientific and chemical research. The main result is to get into a liquid, and thus into the blood, a powerful, yet harmless, germicide. Another result is to create a vitalizing tonic with which no other known product can compare.

Acts Like Oxygen

The great value of Liquozone lies in the fact that it does what oxygen does. Oxygen is the vital part of air, the very source of vitality, the most essential element of life. It is the blood food, the nerve food, the scavenger of the blood. It is oxygen that turns the blue blood to red in the lungs; that eliminates the waste tissue and builds up the new. Too little oxygen always causes lack of vitality. An excess of it gives strength to every function of Nature.

Oxygen is also a germicide. The reason is that germs are vegetables; and an excess of oxygen—the very life of an animal—is deadly to vegetal matter. Liquozone acts like oxygen. But it does more than oxygen, because it is stable. It carries its virtues into the blood to go wherever the blood goes. It is a remarkable tonic—the best thing in the world for you. Yet it is a germicide, so certain that we publish on every bottle an offer of $1,000 for a disease germ that it cannot kill.

The discoverer of Liquozone has solved the great problem of killing germs in the body without killing the tissues, too. And there is no other way. Any drug that kills germs is a poison, and it cannot be taken internally. Liquozone is the only way that any man knows to end the cause of any germ disease.

One Million Dollars

Have been spent by us to give Liquozone away. Our offer to buy the first bottle has been accepted by 1,800,000 people. And we have spent this vast sum to publish the offer and to fulfill it.

The result is that millions now use it. These people have told others about it, and the others told others. Your own neighborhood, wherever you are, is full of Liquozone users. And half the people you meet know some one whom Liquozone has cured.

We tested this product for two years, through physicians and hospitals, in this country and others, before we made the first bottle. We proved it in every kind of germ disease—in thousands of the most difficult cases obtainable. We cured with it every disease which was considered incurable. Then we paid $100,000 for the American rights; and the British rights have since brought a like sum. We tell you these facts because they indicate the great value of Liquozone.

Germ Diseases

These are the known germ diseases; all due to germs, or the poisons which germs create. These are the diseases to which medicine does not apply, for drugs cannot kill inside germs.

All that medicine can do for these troubles is to act as a tonic, aiding Nature to overcome the germs. But those results are indirect and uncertain. They depend on the patient's condition. When drugs were prescribed for these troubles, nobody knew of germs. Now every good physician knows that they call for a germicide.

Liquozone alone can destroy the cause of these troubles. It goes wherever the blood goes. No germ can escape it, and we have found no disease germ which can resist it. Diseases which have resisted medicine for years yield at once to Liquozone, and it cures diseases which medicine never cures. In any stage of any disease in this list, the results are so certain that we will gladry send to any patient who asks it an absolute guaranty.

Asthma
Abscess—Anemia
Bronchitis
Blood Poison
Bright's Disease
Bowel Troubles
Coughs—Colds
Consumption
Colic—Croup
Constipation
Catarrh—Cancer
Dysentery—Diarrhea
Dandruff—Dropsy
Dyspepsia
Hay Fever—Influenza
Kidney Diseases
La Grippe
Leucorrhea
Liver Troubles
Malaria—Neuralgia
Many Heart Troubles
Piles—Pneumonia
Pleurisy—Quinsy
Rheumatism
Scrofula—Syphilis
Skin Diseases
Stomach Troubles
Throat Troubles
Eczema—Erysipelas
Fevers—Gall Stones
Goitre—Gout
Gonorrhea—Gleet
Tuberculosis
Tumors—Ulcers
Varicocele
Women's Diseases

All diseases that begin with fever—all inflammation—all catarrh—all contagious diseases—all the results of impure or poisoned blood.

In nervous debility Liquizone acts as a vitilizer, accomplishing what no drugs can do.

First Bottle Free

If you need Liquozone, and have never used it, please send us the coupon below. We will then send you an order on a local druggist for a full size bottle—a 50c bottle—and will pay the druggist ourselves for it. This applies only to the first bottle, of course—to those who have never used it.

The acceptance of this offer places you under no obligations. We simply wish to convince you, to let the product itself show you what it can do. Then you can judge by results as to whether you wish to continue.

This offer itself should convince you that Liquozone does as we claim. We would certainly not buy a bottle and give it to you, if there was any doubt of results. You want these results; you want to be well and to keep well. Then be fair enough to yourself to accept our offer today. Let us show you, at our expense, what this wonderful product means to you.

Liquozone costs 50c and $1.

CUT OUT THIS COUPON.
for this offer may not appear again. Fill out the blanks and mail it to the Liquid Ozone Co., 458-464 Wabash Ave., Chicago.

My disease is .....
I have never tried Liquozone, but if you will supply me a 50c bottle free I will take it.

.....
.....
.....
M 110. Give full address—write plainly.

Any physician or hospital not yet using Liquozone will be gladly supplied for a test.

The Biggest Book Yet.

We would call the attention of our readers to the page advertisement of the Cash Buyers Union, First National Co-operative Society, in this issue. The publisher of this paper is a shareholder in this Society and we have carried their advertisements for some years, and will vouch for them as an institution of responsibility and reliability. The Society is now distributing a 1350-page general catalogue containing every conceivable item of merchandise, with over 100,000 illustrations, complete descriptions and prices. Authorities regard it as the best, most complete, absolutely reliable catalogue ever issued by a mercantile institution. Our readers will find the Cash Buyers Union, First National Co-operative Society, more than pleased to furnish any information desired regarding their institution, catalogue, merchandise and prices. Read the advertisement referred to and write them.

Wood, Stubbs & Co. Win a Gold Medal

It is with pleasure we announce to our readers that Wood, Stubbs & Co., the well-known seedmen of Louisville, Ky., were awarded the gold medal at the Louisiana Purchase Exposition at St. Louis, on a general exhibit of seeds.

This is a very high honor to a southern seed house and Wood, Stubbs & Co. deserve great credit for their enterprise while the high quality of their seeds is evidenced by the award. Wood, Stubbs & Co. have developed a wonderfully large trade in the seed business in Louisville and sell seeds to all parts of this country and Canada, as well as many foreign countries. Their annual catalogue issued in January and mailed free on request is a most complete book, containing as it does full lists and descriptions of all kinds of seeds, together with cultural instructions, hints about the time to sow, varieties best suited for various soils besides much other valuable information of interest to farmers and gardeners.

The man who can do one thing better than anybody else is going to succeed, whether it is floating stocks in Wall Street or raising stock on a farm. WILLIAMS SHAVING SOAP is the result of sixty-five years of specializing and it is "the only real shaving soap." Common soap is no more fit for shaving than a truck horse is for running in the Brooklyn Handicap." Write the J. B. Williams Company as per their offer in another column and they will show you why. "Be fair to your face."

Large Real Estate Business.

A. P. Tone Wilson, Jr., the real estate man of Topeka, Kan., who is carrying an advertisement in The Fruit-Grower, has attaracted much attention in Kansas by his work. Mr. Wilson is conducting a real estate business, extending over a wide territory, and has been singularly successful in this work. Those who are interested in buying or selling real estate should look up the advertisement of Mr. Wilson, in our "Farms for Sale" department, and write for his plan of operation.

OF INTEREST TO FARMERS AND RANCHMEN.

If you are looking for a home in a mild climate, where you can grow fruits, grains, grasses and vegetables and get large returns, there being an abundance of pure water and good, rich soil, where the grazing time is long and the feeding time is short, then you should write to Frank M. Hamel of Marshfield, Mo., who has stock, grain and fruit and ranch lands for sale. Read his announcement in this issue and write him today for further information.

The mowing machine does no more for the farmer than the O. K. Washing Machine is doing for his wife. The mower makes short work of hay making, and runs on the average less than a week a year. Wash day comes every week in the year. With this machine the work now takes an hour, when it formerly took the day. Saving the wife's back fifty-two days in the year ought to be something of a consideration; particularly when it costs but a fraction of what the mower does. It seems that every family ought to own a machine which means so much to the woman. It is made by the H. F. Brammer Mfg. Co., 1445 Rockingham Road, Davenport, Iowa, who also make the O. I. C. and the Brammer. These are some of the good things—among the best things, now being advertised in these columns. A book that tells about all these machines can be had simply by writing to the manufacturers.

Get a Talking Machine.

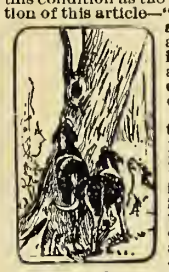
To cheer the dull winter evenings there is nothing you can think of more appropriate in any home than a Victor Talking Machine. Have any of your neighbors such an instrument? If not, you have probably heard a Victor Talking Machine at some concert or other. The machine will talk, laugh, sing and play and give concerts and reproduces voices so naturally that you can hardly tell them from the original. The machine has a spring motor, and all you have to do is to wind it up and then it plays itself. It can play any 7 or 10-inch record.

The Talking Machine Co., Dept. K., 107 Madison Street, Chicago, is offering an opportunity to all responsible farmers of the country to see and try one of the Victor Talking Machines and one dozen Victor records without paying a cent. Their special offer shows how much faith they have in the honesty and integrity of the farmers of this country. They will send one Victor Talking Machine and one dozen records (net cash price $20) to any responsible farmer ordering same on approval. YOU PAY NOTHING IN ADVANCE, and you need not leave any deposit, nor need you give a guarantee from a third party, but you take the machine and records to your home and try it there. Then if not satisfactory you can return it at the company's expense, and there is absolutely no charge. If you decide to keep the machine you send $5 and $2.50 for six months. Twenty dollars is exactly the price you pay for the genuine Victor Royal Talking Machine and one dozen Victor Records everywhere, and the company charges you no interest on partial payments.

You can get one of the machines promptly by writing to the company at once, Dept. K., 107 Madison St., Chicago, telling them what records you want.

Barking Up the Wrong Tree.

There is nothing so pitiable to witness as misdirected effort, particularly so when the effort wrongly put forward is earnest, and of a kind that, placed in the right channel, would be productive of the best possible results. No phrase so fitly describes this condition as the homely term used in the caption of this article—"Barking Up the Wrong Tree"—



and that is just what thousands are doing every day of their lives, lives that are made pitiably sad by a protracted disorder that apparently defies all efforts to eradicate it.

The trouble in such cases is that the effort is wrongly applied, that the patient continues for months and years to "bark up the wrong tree," not realizing that which he is seeking lies in an entirely different direction. Doctors diagnose the case, question as to the symptoms and treat the symptom instead of investigating for the cause, and having discovered it, taking proper steps to remove the wrong condition which makes it possible. Patent medicines, too, are placed on the market and advertised to treat the symptoms, to relieve this and that outward manifestation of an inward abnormality, while the CAUSE goes merrily on, causing more and more symptoms as time progresses, more work for the doctors and more sales for these so-called medicines.

Vitae-Ore, the natural mineral medicine, which is being advertised so extensively in these columns, treats the cause, not the symptoms. It removes the inward disorder itself and does not merely check for a time the outward physical manifestation of that disorder. This is one of the reasons for the absoluteness and permanency of its cures, the principal reason for the wide range of symptoms it causes to disappear. Many different symptoms and local disturbances can be attributed to one particular lesion, one fundamental lack of functional activity that is primarily alike in many separate cases, accounting for the ease with which Vitae-Ore effaces such different symptoms by the removal of these underlying and controlling causes. Read the 30-day trial offer made in this issue by the proprietors, the Theo. Noel Company of Chicago.

POULTRY SUCCESS

The 20th Century Poultry Magazine

15th year, 32 to 64 pages. Beautifully illustrated, up-to-date and helpful. Best known writers. Shows readers how to succeed with poultry. 50c per year. Special Introductory offers. 1 year, 25 cts., including large practical poultry book free; 4 mos. trial 10 cts. Stamps accepted. Sample copy free.

POULTRY SUCCESS COMPANY
Dept. 97, Springfield, Ohio, or Des Moines, Iowa.

You Cannot Lose

if you buy ANCHOR OIL & GAS CO. stock now while it is selling

AT 5 CENTS PER SHARE

PAR VALUE $1.00. It will sell at 10 cents or higher within a very short time, with good prospects of its selling at 50 cents to $1.00 and paying BIG DIVIDENDS almost before you know it. This company owns 320 acres of the best oil lands in Kansas now being developed. Only a Limited Amount of Stock for Sale at Present Price. BUY NOW, if you want to make good big money. Write for "Anchor" Prospectus. DON'T WAIT. Address,

UNION SECURITY CO.,
534 Gaff Bldg. Chicago, Ill.

FARMER AGENTS WANTED—One farmer sold thirty in five days; another eight one afternoon; another five in two hours. Liberal commission. Write quick before someone else takes agency for your locality. Sample pages free. Farmers' Account Book Co., Newton, Ia.

GOOD MAN WANTED—I want a superintendent for farm of 320 acres, all under cultivation; 80 acres in orchard, 20 acres in small fruit; poultry plant and apiary in connection. Superintendent must be an experienced horticulturist, temperate and honest, and a man who can handle hired help; must furnish references. I have a good farm, all under irrigation, in a good section in Nebraska, and want a good man. Have a good proposition for the right person. Address "OWNER," care Western Fruit-Grower, St. Joseph, Mo.

W. B. WILLIAMS, Pasadena, Tex.
J. A. RICKETTS, Deepwater, Tex.
We have the best

FRUIT AND TRUCK FARMS

and rice lands for sale, in Southeast Texas. Would like to hear from anyone wishing to know prices. We have from 10-acre to 640-acre farms in Harris County, Texas.

We Can Sell Your Farm

OR OTHER REAL ESTATE.

no matter where it is or what it is worth. Send description, state price and learn our wonderfully successful plan. Address,

Southern Minnesota Valley Land Co.
MADELIA, MINN.

WE SELL FARMS

RANCHES, HOMES OR OTHER PROPERTY, NO MATTER WHERE LOCATED

TO YOU WHO WANT TO BUY

Before you buy a farm, ranch, home, or property of any kind, anywhere, tell us what you want and where you want it. Hundreds of pleased clients have bought through us, and we certainly can and will please you.

TO YOU WHO WANT TO SELL

If you own a farm, ranch, home, or other property, and you desire a quick sale, write us at once describing what you have for sale, with your lowest cash price, then we will tell you how and why we can quickly find you a buyer.

N. B. JOHNSON & CO., H-505 Bank of Commerce Building, KANSAS CITY, MO.

PILES

NO MONEY TILL CURED. 27 YEARS ESTABLISHED

We send FREE and postpaid a 232-page treatise on Piles, Fistula and Diseases of the Rectum; also 108-page illus. treatise on Diseases of Women. Of the thousands cured by our mild method, none paid a cent till cured—we furnish their names on application.

DRS. THORNTON & MINOR, 1003 Oak St., Kansas City, Mo. and 3969 Olive Street, St. Louis, Mo.

Fruit Farms and Fruit Land for Sale

This department is for the benefit of Fruit-Grower readers who wish to buy, sell or lease farm lands. All advertisements of this nature will be inserted for a charge of 2 cents per word, each initial and number to count as a word. No display type will be used in ads which are accepted at this reduced rate, and all charges must be paid in advance. The rate of 2 cents per word is for each insertion. Count the words when sending your advertisement, and the cost can be easily ascertained. THE FRUIT-GROWER CO., St. Joseph, Mo.

FOR SALE—Large tract, part cleared and clearing being rapidly extended, highest grade Yazoo Delta land, unusually well situated, and peculiarly fitted for very profitable cotton raising on large scale by company of non-resident owners through resident manager; can be made to average over 10 per cent net annually on $1,000,000 valuation, and some years' annual profit would be over $100,000. In its combination of large size, great fertility, competing rail and river shipping facilities, and nearness to a great cash market for its products, it has no rival. About $100,000 cash buys it in its present condition. At that price its equal in value cannot be found. Send for descriptive plat. Postoffice Drawer 315, Moline, Ill.

FOR SALE—2095 acres in nine tracts in Ozark region, Missouri, selected for their combination of mineral, timber, fruit and farm land values—Owner, 510 Pine St., Room 402, St. Louis, Mo.

SEE THESE FARM BARGAINS—For Sale—A 36-acre young orchard, trees set five years and have had the best of care; good fences, fair buildings, near good town, good roads, rural free delivery; varieties are Ingram, Gano, Ben Davis and Champion. Price and terms on application. Also, 80 acres 2½ miles from town, close to school, 50 acres cleared and fenced, 10 acres bearing orchard; 22 acres young orchard; 5-room house. Price, $1,500, if sold soon. W. S. Widmoyer, Seymour, Mo.

FOR SALE—Fruit farm of 52 acres; 2,600 trees; peach, pear, cherry and apple; strawberry, raspberry, blackberry, grapes, asparagus; all best varieties choice shrubbery; rich soil; forest trees; never failing water, spring branch; cottage seven rooms; furnace, cellar, two cisterns, barn; all new; sightly location; seven miles of Kansas City; 60 rods to postoffice; three railroads; 20 minutes to city. Your chance for fruit farm and fine suburban home. Address ASA CHANDLER, Randolph, Mo.

FRUIT FARM FOR SALE—160 acres, of which 40 acres are commercial varieties of apples—2,000 Ben Davis, 1,000 Gano and 1,000 Mammoth Black Twig; orchard seven years old and perfectly healthy. For particulars, write T. J. CLENDENIN, JR., Mexico, Mo.

LANDS—CHEAP.

Large bodies of land and ranches; timber land, fruit and truck farms in Kansas, Oklahoma, Texas, Old Mexico, Louisiana, Arkansas, Southern Missouri, Colorado, New Mexico and California. Tell me what you want and where you want it and how much money you will invest if suited and I will send you list of bargains of the kind you want in that locality. I also have small farms and ranches in all parts of said States. I am working above mentioned territory thoroughly. Write me and see how well and how promptly I will serve you. I have land at 35 cents to $35 per acre.

GEORGE W. MORRIS, Lyndon, Kan.

If you wish to buy, sell or exchange property, write Smith-Myers Realty Co., Springdale, Ark.

South Texas fruit and truck lands, improved and unimproved. V. L. Deane, Houston, Texas.

We are the largest dealers in real estate in Grand Valley, the famous peach, apple and pear growing section of Western Colorado. Orchards here 8 years old net the growers from $500 to $700 per acre. The climate is the best in the world and is a specific for lung and throat troubles and asthma. Write us for information. The Home Loan & Investment Co., 357 Main Street, Grand Junction, Colo.

FOR SALE—40-acre fruit farm, 2 miles from Olney, Ill.; 25 acres in good bearing apple trees, besides other fruit; near school and church; good 6-room house and cellar, new barn and outbuildings, all in first-class condition; plenty of good water. Price $2,800. J. H. MITCHELL, Olney, Ill.

A GOOD PLACE TO LOCATE—On plateau of Cumberland Co., Tennessee, where fruit, corn and potatoes grow to perfection. No cyclones, no floods, no great storms of any kind; less wind than any place you ever lived in; no mosquitoes; perfect natural drainage, best freestone water; very healthy, delightful summers; can plow all winter; abundance of free range for stock. Land $3 to $10 per acre. Write A. E. Payne, Crossville, Tennessee.

FOR SALE—Fruit, Poultry and Dairy Farm. This farm is situated in Lincoln County, Mo., 68 miles from St. Louis, on the great Burlington Ry., and is only one mile from the growing town of Elsberry, with a population of 1,200. It contains 159 acres all fenced, two houses of 3 and 5 rooms each, new barn, fine wells and two never-failing springs; plenty of timber for farm use, good pastures, 60 acres in clover, 40 acres in orchard—1,200 apple, 6 years old; 500 peach, 6 years old; 700 apple, 5 years old; 1,600 peach, 1 and 2 years old; apples, scattering crop this year; peaches, full crop; pears, plums, cherries, berries, etc. All trees in splendid condition. The soil is a clay loam and is very fertile. All land is tillable. Clover is a sure crop, with blue grass everywhere. This is an ideal site for orchard, and was selected as the best location in the whole state, soil, transportation, markets, etc., considered. There will be $1,500.00 worth of soil products sold from place this year, not counting live stock. This is a great opportunity for a man with a large family of boys and girls able to do all their own work, or it is a fine investment. The future prospects for money making on this place are very promising. The farm is in the Elsberry school district. The town is fast growing in the direction of this farm. Land adjoining it sold for $100 per acre last spring with no improvements. I offer this farm for sale at $60 per acre, and invite anyone desiring a splendid farm to write me, or better, go at once, to see it. Address, ROGERS, care The Fruit-Grower, St. Joseph, Mo.

FOR SALE—Farm of 480 acres, one and a half miles from Winchester, Kan.; any quarter section will be sold separate if desired. The north quarter is all under cultivation; price $45 per acre. On the southwest quarter is a house of 8 rooms, a cottage; a barn 24x40, corn crib 10x40, driveway between, all under shingle roof; hog pens, smokehouse, 5-ton scale, two wells, cistern, corn crib; 500 Missouri Pippin, 250 Gano apple trees, set out nine years ago; 550 Jonathan set out two years ago; 12 acres in strawberries, blackberries, red and black raspberries, two packing sheds; price, $70 per acre. On the southeast quarter are 6,000 Ben Davis, 1,800 Gano apple trees, set out ten years ago; 500 Gano, set out two years ago; price, $70 per acre. Living water the year round on every 40 acres if wanted. Timber on the two quarters. For particulars write WM. BOOTH, Winchester, Kan.

FOR SALE—Cheap for cash, 9-acre fruit farm, near San Diego, Cal.; 200 bearing olive trees, 6 years old. Other fruits for home use. Ideal place for poultry and fruit. Church and school near. Rural mail at door. Nice neighbors. For particulars, address WM. TATNALL, Marshallton, Del.

FOR SALE—One-half interest in 1,000-acre houses, barns, cribs; 800 acres cleared, 200 in valley; 14,000 two-year trees; 11,000 peach, young stock to set; 160 acres more, one and a half miles to depot, and best college town in state; 2,500 people; mineral springs; health resort. J. H. ROSS, Searcy, Ark.

FRUIT FARM BARGAINS.

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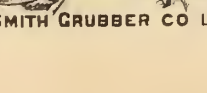
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Disposition of Apples.

Continued from Page Thirteen.

ger that the cattle had broken into his apple orchard. "How did the cattle look?" said the farmer. "Oh, the cattle are all right," the man replied. "Then we will made no ado," said the farmer, and left the cows with the trees. When I first heard that story it sounded apochryphal to me, but it wouldn't startle me now at all. For I am certain some very good pasture land has been ruined by having apple trees stuck into it too thick. I should raise no objection to one tree for, say, forty acres.

The language of my subject (please recollect that I had nothing to do with choosing it) carries the idea that there are apples to dispose of. We should all like to have the good work go on. But when there is nothing in the apple line to dispose of, there is still one ray of light in the resulting gloom—that is, we are safe from the barrel makers for a while, anyway.

The apples we have this year are, in the main, fit for cider only. The price of cider apples has commonly run about 15 to 20 cents per hundredweight on board cars. They can't be picked up and unloaded into a car for that amount and make wages for the people who do the work. When things get too cheap the best way to dispose of them is to let them rot.

Speaking of "the disposition of apples," their dispositions vary, just like other people's. Some are sweet, some crabbed and sour, some icy, like the Siberian crab; some pro-Russian, like the Romanoff, Petofskey and Barganovitch, and some are tough. The Ben Davis has been accused of belonging to the latter class, the accusation having been put forward in both the literal and figurative sense. I deny both charges. Possibly I am partial to Benjamin, because he is not with us, robust and numerous, like he used to be. "Absence makes the heart grow fonder," but I am not aware of any bias. I was brought up on Spitzenberg and Newtown Pippin, and whether it be treason or no, it is true that I would rather have a Ben Davis at its best than either of the varieties mentioned. It may be that we are never more to behold Benjamin in his old-time color and rotundity and juciness, and that the ghost of him which now stalks, ill-shapen and infrequent, among us is all we are going to see of him, but, whether he returns or no, I still maintain that in its prime the crier on his round through the town didn't see old B. D.'s superior. His great sin was that he was abundant; that there was some of him for everybody. Not like the Northern Spy or Bellflower, in the one case bearing one choice red specimen to dozens of pale and insipid seconds; in the other, averaging about one apple to every second limb, but lots of 'em, all red, and one as good as another. But they illustrate the adage, "As well kill a dog as give him a bad name." The Ben Davis has been so pursued by calumny that it is in disfavor, and its own people are half of them ashamed to stand up for it. It is like the Concord grape, which goes begging its way at 15 cents a basket, while the Malaga and California white grapes have a select clientage at 5 cents per pound, and all the time the Concord is the best to eat. This is the key, which I think I have discovered, that explains much of the hyper-criticism as to things the farmer has for disposition, and much other hyper-criticism that goes far beyond our orchard crops. That key is the hyper-critic's assumption that whatever is cheap is bad; that whatever is common is therefore unclean.

EDWIN TAYLOR.

Edwardsville, Kan.

Trouble With Plum Foliage.

Kindly inform me what I shall do the coming year with plum orchard trees, about seven years old. I sprayed the trees last March with sulphurid of copper and when the foliage came out, with Bordeaux Mixture and paris green, for five times, two weeks intervening. With all this treatment the leaves were full of slug shot holes and fell off. The fruit also fell off, hence no crop.—P. B. C., Allentown, Pa.

Your inquiry to The Fruit-Grower has been forwarded to me for reply, and I think I can tell you with certainty the cause of your trouble. Plum trees are more easily injured by strong spraying mixtures than are apple or pear, and your description of the leaves being full of holes is the result of sprinkling the leaves with small drops of a strong mixture. If you had not made the Bordeaux mixture so strong, and had used less paris green, and had sprayed fewer times and at greater intervals, and ha used a spray pump and nozzle that would throw a fine mist as fine as steam, instead of putting it on in drops, you surely would have had no injury such as the leaves being full of holes and falling off and the loss of the crop. A strong mixture put on in drops or sprinkled is certain to result just as you say. I would call your attention to the fact that it was sulphate of copper which you used, and it is all right to use this dissolved in water, two or three pounds to a barrel of water, before the leaves appear, but with lime after the leaves come, as this makes the Bordeaux mixture; then is the time to add one-fourth pound of paris green to fifty gallons of the mixture. H. A. SURFACE.

Troubles With Cucumbers.

What caused blight in a pickle patch and how does it look? Last week I sold over two thousand pickles; this week will not have many. Some trouble, I think the blight, has attacked them. My canteloupe patch is dropping the same way. I used to raise lots of canteloupes, but cannot do anything the last three years.—R. G. B., Schwendsville, Pa.

Answer: The trouble may be blight, and it may be the green aphis or plant lice. Blight is a fungus disease and is caused by spores floating in the atmosphere, which light on the leaves of the plant and when atmospheric conditions are just right, will take root and grow. It acts like a mildew, and looks like mildew on the leaves. It can be prevented by carefully spraying the plants with Bordeaux mixture every ten days from the time they are in the third leaf, until the crop has been harvested, but after the blight has attacked the vines and they show the effects by the black powder covering leaves and vines, it is very difficult to check it. If the trouble is plant lice, you will find them in great numbers on the under side of the leaves, and for these no satisfactory remedy has yet been suggested, as it costs more to spray the under side of the leaves than the crop is worth. If seen in time it will pay to go through the patch and carefully clip off all affected leaves with a sharp knife. Carry them out of the patch and burn them; by destroying the first crop of lice you will very greatly lessen the damage. G. H.

Dear Sir:—I set a lot of red raspberries last spring in rows six feet apart and six feet in the row. They have grown up and overlap each other, so that I cannot cultivate. Will you please tell me what to do with them. I don't allow any weeds to grow in the lot.—W. T. L., Honesdale, Pa.

Answer: You can trim your raspberry canes back at any time sufficiently to admit of cultivation without injury, but you should not have allowed them to get in this condition. In the spring of the year, as soon as the young canes have grown to a height of two feet, walk along the rows and pinch off the tips of all the canes. This will induce a stocky growth, and cause them to throw out lateral branches. If in the course of the season you notice a tendency to grow tall, go through again and pinch them back, never allowing them to grow higher than four feet, and the following spring before growth has started they should be cut back to about three feet. By so doing you will have a lot of strong, nicely branched bushes, with a much larger bearing surface than you have under your present management.

A Fruit-Grower reader living in Delaware sends us notice of a new fruit-shipping crate which has been invented by James S. Horton, Lincoln, Del. This crate is said to be capable of being changed to accommodate different fruits, and different sizes of the same fruit. This crate is said to have been favorably received by the growers in the peninsula, and that it will be pushed on the market.

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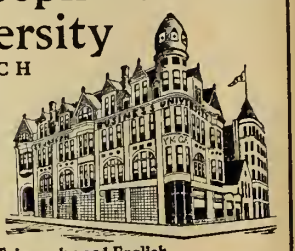
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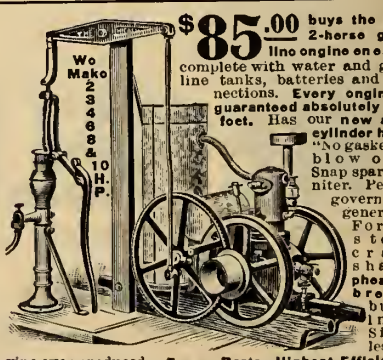

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Harvesting and Storing Sweet Potatoes.

Sweet potatoes should be harvested before the vines are seriously injured by frost. If only a few are grown in the garden, they may be dug with an ordinary potato fork. If, however, the area is large, the tubers may be plowed out after the vines have been cut with a rolling coulter, or a special digger having two coulters, two plows and a cutting blade, may be employed. Whatever the tool used, care should be taken to avoid cutting, bruising or breaking the tubers, since an injured tuber does not keep well when stored. The tubers should be dug only when the soil is dry. It is considered best to dig them in the morning of a bright day, shake off the dirt by hand, and leave them lying in the field till the afternoon to dry; then take them in and place them under cover before night.

To keep well, sweet potatoes must be stored in a dry, warm place having a fairly uniform temperature. In storing on a small scale, as for home use, the tubers may be packed in boxes of dry sand or road dust, and placed in a basement containing a furnace, or in an upper room, close to a chimney. For storing in large quantities, specially constructed buildings are used. These are usually built entirely above ground, have dead air spaces in the walls, and double doors and windows. A stove is placed in the building so that the desired temperature may be maintained, even in the coldest weather. Means for ventilation must be provided. The tubers are stored in bins with false bottoms raised two or three inches above the floor, and there is an air space or passageway between the bins and the walls of the building, so that there may be a free circulation of air all around the tubers.

It is a common practice among some growers to maintain the temperature of the house at about 90 degrees for the first week or two after the tubers are put in, so as to cause them to lose their excess of moisture. Thorough ventilation must be given during this period, to allow the escape of the moisture-laden atmosphere. After this sweating process is completed, the temperature is usually lowered to 50 or 60 degrees, and is kept as uniform as possible throughout the storage season.

Sweet potatoes in storage should never be moved, sorted or handled in any way until just before they are to be marketed. After being handled, they soon rot. For this reason, it is a practice with some growers to store in small bins so that the entire contents of one bin may be taken out at once, without disturbing the remainder of the tubers in storage.—J. W. Lloyd in Orange Judd Farmer.

Potatoes—Their Loading and Shipping.

The great majority of farmers in loading their potatoes, do not take pains enough to put their stock up in the best manner. Potatoes should be sorted as they are dug, and half-bushel wire baskets used to gather them in; these baskets allow the dirt to run out and the potatoes are then clean to go into the sacks. Every sack should be well filled before being sewed —the sewer insuring this by jolting each sack well two or three times before closing it up—then the sack should be sewed tightly with good string.

The writer received one car this season, each sack of which was tied with wire, which necessitated resewing the entire car before it was in shape to sell, thus causing a loss and delay in the delivery of the potatoes. A shipper who puts his stock up in the best way possible—in good, well sewed sacks, and who sees that his stock is well graded, will have no cause to lose sleep as far as having his stock accepted is concerned; the man who puts his stock up in this way—and there are lots of them—is continually wondering whether the culls or offstock that he puts in the bottom of the car will be discovered by the receiver before he accepts the car. To some farmers, loading a car in this way may not be stealing, but it amounts to the same thing.

Most farmers reason that, if one firm will not buy their produce, another will, and thus they will always have a market, but this is not always true; there are years when the freight rate is against him, thus shutting him out of the usual market, and he has to look farther away from home. If he has established a reputation for putting up good goods in the past, and is known for having original orders followed by more, he can rest easy; but if he is used to having cars turned down—to hearing nothing but kicks on those cars that are accepted—all on account of poor loading, which was, perhaps, unintentional; it keeps him busy planning a method to rob the trade again.

It costs the shipper money to get good customers, and it costs the receiver just as much —in many cases, a great deal more—to get reliable shippers. Yours truly,

CARVEL COLVIN.

Potato Rot in Relation to Time of Digging.

In the fall months the Maine Agricultural Experiment Station receives numerous inquiries similar to the following: "I have several acres of potatoes fairly ripe but still growing. They show signs of rotting. Had I better dig and store in my cellare at once or leave in ground until fully ripe? If dug now they will rot in cellar. The crop is a big one and I want to save all I can for better prices than now ruling."

Last year the station grew, harvested at two different times, and stored in cool cellar until January first, eight varieties of potatoes, four early and four late. Part of each were sprayed several times with Bordeaux mixture and part were untreated. The full details of the experiment will be published in a bulletin about December next. As the question is a practical one, and although there is at present time only little indication of rot, a summary of the results are here given. The shrinkage includes all loss, due to rot, loss of moisture, etc. Potatoes that were at all discolored, even though otherwise sound (as is the case in all experiments at this station), classed as diseased and not included under sound potatoes.

Yield of sound potatoes from fifty-five hills at digging and per cent of sound potatoes after storing until January 1:

	Date of digging.	Pounds sound potatoes from 55 hills at digging.	Per cent of sound potatoes January 1.
Early varieties unsprayed	Sept. 8	41	39
	Oct. 7	54	86
Early varieties sprayed	Sept. 8	74	64
	Oct. 7	76	87
Late varietes unsprayed	Sept. 8	64	48
	Oct. 7	69	91
Late varieties sprayed	Oct. 7	104	90

In each instance, as in the average results, there was a larger yield at the later digging, and the late dug potatoes kept far better than the earlier dug. Exepriments at the Vermont station give the same general results. The conclusion seems to be justified that in case the potatoes show signs of rot, they should be left in the ground as late as possible before digging.

CHAS. D. WOODS,
Director Maine Experiment Station.

What's the matter with the demand for plums? It is said that never before have plums been so indifferently received on all the markets of this country as they have been this season. This applies to all kinds of plums, from the common "wild" plum to the large, fancy fruit from California.

No, that article on "Irrigation," in the September Fruit-Grower was not intended for a joke, although one might have supposed such was the case, after crops in the Middle West have been injured by too much rainfall for three years past. It was simply to help out some of our readers where there is not an excess of rainfall—and then, too, there will come seasons when even the states of Missouri, Iowa and Illinois will not have too much rain.

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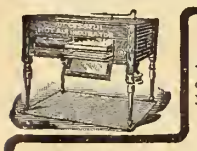

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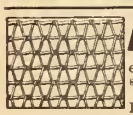

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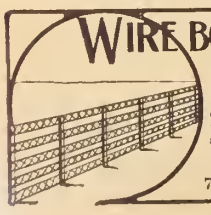

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Poultry Department

Our Special Poultry Articles.

We want again to call attention to the series of special articles which will be published in The Fruit-Grower for January, February and March. These articles will be on the subject of growing poultry and raising fruit on the same farm, and will be contributed by Mr. T. H. Orr, secretary of the American Poultry Association, who has practiced the methods he recommends. We believe these articles will be most interesting to our readers, for certainly the subject is one which should interest every reader. It is not intended, of course, that fruit farms shall be turned into poultry ranches, but if one can be shown a way to handle the poultry in such a way that a source of income will be provided, and the orchard trees be all the better for the treatment, the subject will interest everyone. And that is just the kind of articles we hope to secure. Don't forget to tell your neighbors about this series of articles. They will be interested in them, if you will only tell them about them.

Sell the Surplus Cockerels.

This article comes every year at about this season. And yet it is needed by some persons every year, for, in spite of all that has been said on the subject, many persons keep a lot of surplus cockerels until they have eaten the profit of the entire flock for the whole season. In most cases it is safe to say the cockerels should have been sold long before this time. It is true that many farmers prefer to fatten their fowls for the holiday markets, but there are so many persons of the same mind who do this that it often happens that the market then is not so good as it was earlier in the season. With poultry it is usually true, that the time to market the surplus stock is when it is ready to go. While some persons may not agree with this statement, none will deny that surplus cockerels and old hens should be sold before winter comes on. Look at your flock and see how many of the fowls ought to be disposed of—and sell them at once.

Age of Eggs.

United States Consul-General Richard Guenther, writing from Frankfort, Germany, tells of a simple method for testing eggs recently discovered in that country. He says:

"It is based upon the fact that the air chamber in the flat end of the egg increases with age. If the egg is placed in a saturated solution of common salt it will show an increasing inclination to float with the long axis vertical. A scale is attached to the vessel containing the salt solution so that the inclination of the floating egg toward the horizontal can be measured. In this way the age of the egg can be determined almost to a day. A fresh egg lies in a horizontal position at the bottom of the vessel; an egg from three to five days old shows an elevation of the flat end, so that its long axis forms an angle of twenty degrees. With an egg eight days old the angle increases to forty-five degrees; with an egg fourteen days old to sixty degrees, and with one three weeks old to seventy-five degrees, while an egg a month old floats vertically upon the pointed end."

Chicken Cholera.

The time for chicken cholera is now at hand, and no doubt hundreds of readers will be interested in some observations that have been tried and proved successful, says a writer in Inland Poultry Journal.

Chicken cholera, the most dreaded and dangerous disease to which poultry are heirs to, in the knowledge of practical poultry men.

When cholera once starts in a flock, if nothing is done to check its progress, it will undoubtedly exterminate the entire flock.

Cholera is a disease that is not very well understood by poultry men in general. It is contagious and spreads rapidly. The germs are present in the feces and healthy birds coming in contact with these will without doubt, contract the disease. While real cholera is somewhat rare, this is no reason why the up-to-date poultry man should not be well informed as to the nature of the disease in all its phases. This disease is often confounded with infectious teukaemia. However, a close observer will be able to distingush these diseases apart, by the profuse diarrhea in fowl cholera and its absence in infectious teukaemia.

The fowl generally has a dejected, sleepy appearance; is very thirsty; very weak; the head turns very pale or dark; there is a diarrhea, a very profuse greenish discharge; the crop fills with mucus and wind, the temperature becomes very high, at the last the food is not digested, the breathing is heavy and fast, the eyes swell shut and the fowl dies shortly. When dissected the intestines are deeply reddened and inflamed, caused from the profuse diarrhea. Intestinal contents, liquid mocopurulent or blood stained; the heart somewhat enlarged, is dotted with ecchymoses, lungs are affected hyperaemic or pneumonic, specific organisms appear in large numbers in the blood and organs, blood very pale, causing the weakened condition of the fowl before death, numbers of leucocytes decreased.

As this disease varies in duration from a few hours to several days it is very important that the poultryman take it in hand at once, to prevent further spread.

When the disease has once manifested itself the pens should be thoroughly disinfected. The following disinfectant is very good and will produce good results.

Carbolic acid, one-half gallon; sulphuric acid, one-half gallon; this may be mixed with twenty-five gallons of water and make a strong solution.

Too much can not be said regarding the sanitary condition of the houses and yards. The practice of many persons killing a sick fowl, because it is the cheapest way to treat it may not be altogether wrong, but it is decidedly out of the realm of economy to neglect those conditions which require attention in order to prevent the occurrence of the disease.

The affection of fowls under consideration is unquestionably the outcome of bad management rather than the uncontrollable invasion of its specific organism.

The experience of practical poultrymen is necessary to establish the efficiency of the rules suggested for the cure and prevention of this disease. I believe the following will be all that is needed in the most serious outbreak of cholera:

Remove all affected fowls to clean, dry quarters. We find small doses of common salt and red pepper mixed with small amounts of sulphur and carbonate of iron, given with water, produce the best cure.

It is also advisable to procure a piece of old salt bacon, cut it into small cubes one-fourth of an inch square, roll this in corn meal and feed with water.

To the fowls not yet affected it is best to feed some brand of prepared medicated poultry food together with some stimulants.

See that the houses are well ventilated and cleaned. Do not crowd the fowls, and give them unlimited range.

After this is done, and it should be done, if not already so, I will venture to say that you will have very little disease in your flocks. It should be remembered that light, air and cleanliness are the three rules for success-

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perfect-fitting five dollar family set of Spectacles for only $1, which will include a pair of my handsome Rolled Gold Spectacles, absolutely free of charge. This set will last a family a lifetime. I have never sold this family set for less than $5 and you could not buy spectacles anywhere near as good as these, even for $10 a *pair.* I am really charging you nothing for them now, as the dollar I will ask you to send with your test is only to help pay for this announcement. This very remarkable but honest offer (to send a five dollar set of spectacles for only $1) is open to everyone (my old customers also), but only for a short time, as I am just doing this to prove to every spectacle wearer in the world the following two very important facts: *First,* that my Perfect Home Eye Tester is positively accurate and reliable and with it you will be able to give your own eyes a perfect test in your own home and thereby I fit you with absolutely perfect fitting spectacles *by mail,* which could not be improved on even if you had undergone a personal examination in any occulist's office, at a cost of $10 or more. *Second,* and most important of all, that on account of my latest improvements, my spectacles have become known the world over as the "Dr. Haux Famous Perfect Vision Reading and Sewing Spectacles" and they are now greatly superior to all others on the market. With them you will be able to thread the finest needle and read the smallest print, day and night, with perfect ease and comfort, just as you did in your younger days, and this, even if your eyes are so very weak now that you cannot read the largest print in this paper. In fact the large number of physicians who have for years and years used and recommended my spectacles to their weak-eyed patients will tell you that they are the most perfect fitting, clearest and best in the world today, and I will give you your dollar back and let you keep the five dollar set of spectacles also, if *you yourself* don't find them to be the finest, clearest and best you have ever bought anywhere at any price. I can only send one set to a family at this price, and this only for a short time, so write me *right now* for my free Perfect Home Eye Tester, and address my company as follows:—

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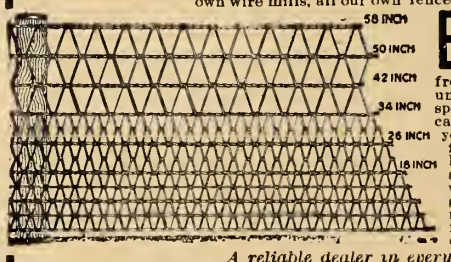

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The grape crop throughout the Chautauqua belt is reported as being very heavy.

ful poultry keeping. Unless these rules are heeded, it can not be expected that one will be very successful in poultry raising.

In conclusion I wish to add that if my readers will keep the old aphorism, "an ounce of prevention is worth a pound of cure" uppermost in mind they will be the most successful poultrymen to be found.

Winter Food for Poultry.

The approach of winter calls for a few thoughts regarding the proper food our fowls will need for egg production. Hundreds of methods are advanced, and the majority of them have merit. There are several well-balenced commercial foods upon the market that are excellent. But it is not always convenient to secure these foods, therefore, we can recommend the following bill of fare:

Buy twenty-five pounds each of bran, millings, corn meal and ground oats; also fifteen pounds of meat scraps or ground meat, and five pounds of oil meal. Mix all thoroughly and place in a barrel for use. If your flocks consume a bucketful of mash at a meal, let half that amount be cooked clover hay, and the other half ground feed as above. Mix the grain and hay thoroughly while hot. Feed for breakfast warm.

Now for caution: Do not feed all the fowls can eat for breakfast. Give them just enough to partially satisfy them, otherwise they will not exercise until they again become hungry. We make it a half meal, that is, half the quantity we would give were it a night feed.

We prefer a morning mash to that given at night, for several reasons:

First. The food is in such a condition that it is quickly assimilated, and therefore will do the most good.

Second. It being soft food it quickly digests and thus, when fed at night, leaves the fowls with empty crops before morning, causing more or less suffering from cold, which is not the case when the crop is full of grain. We have tried the different methods, and found the morning mash to be superior.

About noon we throw a "half-feed" of wheat or hulled oats among a lot of litter in the scratching shed, for five days in the week, and on the remaining two days we give green cut bone.

At night we give all the grain they will eat up clean. We use a mixture of equal parts of wheat and cracked corn, and add sunflower seed, barley, and buckwheat when we can get them. Grit and cracked oyster shell are constantly within reach.

After fully twenty years experimenting we have found the above bill of fare excellent for laying stock.

Green food is scarce during winter, and therefore cut clover hay comes in as an excellent substitute. Cooked vegetables are also good, so long as they are not fed to excess. They are generally of a fattening nature, and also cause considerable bowel troubles. It is better to cut up the vegetables to the size of corn and feed raw.—M. K. Boyer, in American Poultry Journal.

Poultry Notes.

The turkey crop of the Middle West, especially in Missouri, is reported to be 25 per cent larger than it was a year ago. Let us all have turkey for Thanksgiving this year.

The Brown Leghorn hens sent by Mrs. Hansel of Nebraska to Australia, to take part in the second egg-laying contest, are not doing nearly so well as the first pen of hens did in the first contest. The American hens on Nov. 1 stood fourth in the contest.

Have you not often noticed that the price for turkeys is lower at Christmas than at Thanksgiving? Have a care about saving too many turkeys for the later markets. Turkeys not sold by the first of the year very often find a low market, for the demand has fallen off considerably.

All kinds of poultry for market are reported more plentiful this year, with the exception of geese. There is said to be a shrinkage in the number of geese which will find their way to market.

A surprise at the St. Louis poultry show was in the relative number of birds of given breeds entered. Formerly White Wyandottes and Barred Plymouth Rockks contested for the greater number of entries. At the St. Louis show the White Wyandottes led all others, and the Buff Rocks followed second. Then came White Rocks, with the old Barred Rocks fourth; Single-Comb White Leghorns come next.

Uncle Mike Boyer does not believe in adopting a system of feeding to induce a fowl to moult. He believes that when the time comes for a hen to moult, she'll moult, and that any change in the plans which are made without her consent will be at the expense of her vitality.

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Capital Stock 1,000,000--all paid up

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APPLE: An immense stock, perfect trees, both 1-yr. and 2-yrs. old. We are sole owners of BLACK BEN (Trade Mark) now acknowledged and recognized to be not only **distinct from Gano** but **superior**—the best apple of the Ben Davis family; and KING DAVID (Trade Mark) which **surpasses** Jonathan and Grimes Gol. in beauty and quality. Also CHAMPION (Trade Mark), DELICIOUS (Trade Mark), SENATOR (Trade Mark), L. RASPBERRY and all leading commercial sorts.

PEAR, STANDARD: Our stock includes such sorts as FAME, ALAMO, OZARK, LINCOLN (true Lincoln of Illinois,) etc., all valuable additions to the pear list. Also all the best old sorts such as BARTLETT, KIEFFER, GARBER, SECKEL and others.

PEAR, DWARF: DUCHESS, ANJOU, HOWELL, FAME, BARTLETT, etc.

CHERRY: One of the surest crops that can be grown and one that always brings good returns. We have a splendid stock of DYHOUSE, EARLY RICHMOND, **true** MONTMORENCY (the best of all), SUDA, WRAGG, GER. OSTHEIMER, etc.

PLUM: A full assortment. **GOLD** (Trade Mark) which has proved of wider adaptability than any other plum; GONZALES (scored 98 points in competition at World's Fair); Burbank's latest products—COMBINATION, LAST, FIRST; and such well known sorts as ABUNDANCE, BURBANK, WILD GOOSE, LOMBARD, RED JUNE, WICKSON, SHIRO, CLIMAX, SULTAN, DAMSON, POOLE PRIDE, etc.

PEACH: The largest and finest stock in the U. S. Our leaders are ELBERTA, BELLE OF GA., GREENSBORO, CARMAN, ALTON, ELBERTA CLING, KRUMMEL OCT. We offer all the new introductions of value such as EARLY BELLE (Hiley), ARP B'TY, EDGEMONT B'TY, FRANCES, LATE ELBERTA, OCT. ELBERTA, WADDELL, KLONDIKE, MAY LEE Cl'g, CHILOW Cl'g, RED BIRD Cl'g, and the **hardy Neb. productions,** RUSSELL, WOOLSEY and WRIGHT.

MULBERRY: If for no other reason, plant a few to attract birds from other fruits. We offer the splendid new sorts, ABUNDANCE EVERB'G, MONARCH WHITE, as well as BLACK ENGLISH, DOWNING, HICKS, NEW AMERICAN.

QUINCE: VAN DEMAN (Trade Mark), MEECH, MO. MAMMOTH, ORANGE.

APRICOT: SUNRISE, SUPERB, E'Y MAY, MOORPARK, ROYAL, ALEXANDER.

GRAPE: Our vines are grown in the celebrated Grape Belt, Chautauqua Co., New York which produces the very finest. A complete assortment of 1-yr. and 2-yr. vines including HICKS which far excells Concord—ripens earlier, better quality, better grower, better bearer; and STARK-STAR (Trade Mark), "an important addition to the Grape list, filling a place occupied by no other." **We are prepared to meet all competition in quality, grades and prices.**

SMALL FRUITS: FAY, CHAUTAUQUA, LONDON MARKET, POMONA, RED CROSS and VICTORIA Currants. HOUGHTON, DOWNING, JOSSELYN, SMITH and PEARL Gooseberries. CUTHBERT, CARDINAL, CUMBERLAND, HAYMAKER, KANSAS, KING, LOUDON, MILLER RED, THOMPSON and THWACK Raspberries. BLOWERS, E'Y HARVEST, EARLY KING, ILLINOIS (Trade Mark), KITTATINNY, MERSEREAU, SNYDER, STONE HARDY, TAYLOR and WILSON Blackberries. AUSTIN, LUCRETIA and PREMO Dewberries.

SHADE & ORNAMENTAL TREES: WHITE WEEPING BIRCH, SILVER MAPLE, NORWAY MAPLE, CAROLINA POPLAR, CRIMSON-LEAF PLUM, ROSE-TREE of CHINA, BECHTEL and PARKMANNI DBL-FLOWERED WILD CRABS.

BUDDED LILACS: Both single and double. Colors, pure white, light and dark purple, purplish red, rosey red, satiny rose, etc.. Every garden should have one or more of these superb sorts. Far superior to the old fashion lilac.

SHRUBS: HYDRANGEA, SNOWBALL, SPIREA VAN H., HONEYSUCKLE, etc.

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SEEDLINGS & STOCKS: We offer a fine lot of APPLE SEEDLINGS, Iowa grown from Vermont Seed. These not only give the best stands but grow the thriftiest, cleanest, most perfect blocks of apple trees practically free from Crown Gall. In PEAR SEEDLINGS we offer French Imported, also some extra fine Japanese; CHERRY SEEDLINGS, QUINCE STOCKS, PLUM SEEDLINGS.

ROOT GRAFTS we are prepared to furnish in any quantity, either whole-root or piece-root. Our men are experienced and we guarantee perfect workmanship.

"FACTS ABOUT BLACK BEN."—Officers of the Mo. Horticultural Society and members of the Black Ben-Gano committee have acknowledged the society in error and a great wrong committed. We will send FREE on request a booklet giving much information of the methods and inside workings of the Society for the last several years—interesting reading.

STARK FRUIT BOOK, "WORLD'S FAIR FRUITS," shows in natural colors and accurately describes 216 varieties of fruit. Send 50¢ and we will send the book, post-paid, and a REBATE TICKET permitting its return within 60 days when the 50¢ will be refunded. Or the Rebate Ticket is good for $1 part payment on a $12 order for trees.

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WESTERN

THE FRUIT-GROWER

ST. JOSEPH, MISSOURI

AN ILLUSTRATED MONTHLY MAGAZINE FOR PROGRESSIVE AMERICAN FARMERS

SUBSCRIPTION FIFTY CENTS PER YEAR THREE YEARS FOR ONE DOLLAR

VOLUME FIFTEEN | DECEMBER, 1904 | NUMBER TWELVE

Mulching Strawberries

Mulching eighty acres of strawberries is a pretty big job, but this work comes at a time when there isn't much else to do. The greatest problem which confronted us this year was the scarcity of material. The ice last winter killed the wheat and rye, which made straw very scarce, and the price was high, but with a special effort enough was secured by hauling it a distance of four to six miles. Four large wagons are used, each one being equipped with a long, wide rigging; five men go with the four teams and as fast as one is loaded it starts for the farm, continuing this way until the last one is in. The first teams get to the farm in time to unload before dinner and these are the first to start back in the afternoon; this keeps teams going and coming continually. We begin covering at one side of the field, taking eleven rows at a time. The wagons and horses go astride of the sixth row, which leaves five rows on each side, and the straw is thrown in the center of each of these five rows, thus avoiding any carrying. Eleven men follow up and place the material evenly on the plants, covering every one lightly, so they will be shaded from the sun on bright days in winter and early spring. Our foreman follows the men and sees that the covering is thoroughly done so that no plants will be exposed. It isn't freezing that injures them, but when it freezes every night and a bright sun shines the next day it thaws and then the ground contracts and pulls the plants up, often straining or breaking the roots. By covering them lightly the ground will not thaw out on these bright days, but will remain frozen solid and when spring opens up and a long, warm spell comes, the frost dissolves on the under side of the frozen part first and the plants will settle with the ground securing them from any injury; this mulching also keeps the ground cold and the plants remain dormant until time to take them up for resetting. The roots callous during winter, retaining the full vvigor of the plants and when set in the warm soil they quickly send out feeding roots and start growing vigorously. Dormant plants have many advantages over a green plant which has started new growth before being taken up.

The principal object in mulching the propagating bed is to protect the plants from alternate freezing and thawing so they will not be weakened in root or crown and to keep them dormant, but there are many more reasons than these for covering the fruiting bed. The mulching prevents the rains from puddling the surface, but it will soak through the straw and be taken up by the soil grains and held there as a reserve for the plants to use between rains. Strawberries require a large amount of moisture at fruiting time, and if the weather is hot and dry during the ripening period, the mulching will often save the crop. It makes a nice carpet for the pickers to kneel on and then, too, it keeps the fruit clean. No one wants dirty berries at any price, while the demand for clean, bright fruit is greater than the supply. No one would think of sending a fine horse to market without grooming it first; currycombs and brushes generally bring a much better price after they have been worn out on the horse; the more grooming the higher is the bidding, and strawberries are just like horses. They attract the attention of purchasers much quicker and more forcibly when bright and clean; is fact the secret of selling strawberries is to have them so inviting that they will get the buyer's mouth to watering and their stomachs to gnawing and when the eyes and stomach get to begging the pocketbook begins to open wide and the price is not argued.

THE R. M. KELLOGG CO. MULCHING THEIR EIGHTY ACRES OF STRAWBERRY PLANTS.

Owing to the scarcity of straw and the high price asked for it, a great many growers will be tempted to defer mulching this year in order to lower the cost. While it is a good plan to keep expenses down, to attempt lowering them by omitting anything pertaining to quality and quantity cuts the profits more than expenses. We quit figuring expenses and have gone to figuring for profits. Although it has cost us more than $1,000 to cover our eighty acres of strawberries this year, we consider it a splendid investment and would not dare to leave our plants unprotected if it cost double this amount. It required over three hundred tons of material to cover them, which was made up of old and new wheat and rye straw, corn fodder which was grown especially for this purpose, and to finish up we bought about twenty loads of cane pomace from the sorghum mill. This was pretty thoroughly ground up and made an ideal covering, as it is not disturbed by the wind. Coarse stable manure is used on our trial bed, shak-

TO OUR SUBSCRIBERS

At this holiday season, when everyone is in a cheerful frame of mind, we have one request, on behalf of The Fruit-Grower.

RENEW YOUR SUBSCRIPTION TODAY

Remember the big special issues of the next few months; they will be expensive for us, but no extra charge to subscribers. This is a special reason for sending your renewal now. We wish every member of "The Fruit-Grower Family" a happy Christmas time.

THE FRUIT-GROWER COMPANY, ST. JOSEPH, MISSOURI.

A FEW WORDS ABOUT

"American Gardening"

Every subscriber whose name appeared on the books of "American Gardening," the weekly horticultural paper formerly published at New York, N. Y., will receive this month a copy of "The Fruit-Grower," instead of the former publication. American Gardening will cease to be published, and arrangements have been made whereby this company will fulfill all unexpired subscriptions to American Gardening. See page 3.

The Fruit-Grower Co., St. Joseph, Mo.

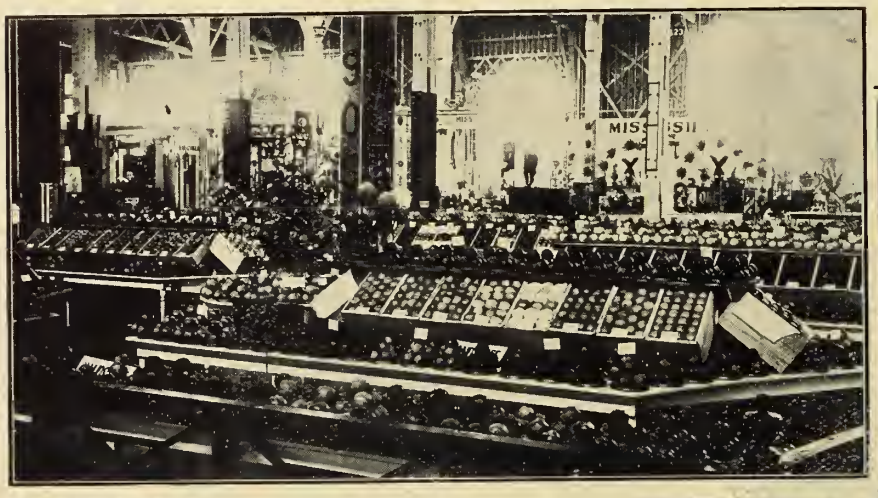
ing all the manure out between the rows, using the strawy matter on top of the plants. Marsh hay is also good; in fact, anything is better than trusting to luck.

FRANK E. BEATTY, Gen. Mgr.
The R. M. Kellogg Co., Three Rivers, Mich.

Kansas Horticultural Meeting.

The thirty-eighth annual meeting of the Kansas State Horticultural Society will be held in the rooms of the society in the capitol building at Topeka, Dec. 27 to 29. The program is presented herewith, and if it is carried out as projected, the meeting should be one of the best the society has ever held. Certainly the program is one of the best offered by any of the Western Societies in recent years:

Opened by President Wellhouse.
Prayer.
Annual Reports of Trustees, in writing, by congressional districts, on Horticultural Conditions and Progress.
"Fruit Packages"—T. E. Armstrong, Topeka; Package Manufacturer.
"Cold Storage"—W. F. Jensen, Topeka; Continental Storage Company.
"The Fruit Commission Business"—Frank Cope; Commission Merchant, Topeka.
4 P. M. Conference on Apple Orcharding; Leader, S. P. Bailey, Versailles, Mo.
1. Site and soil. 2. Varieties—a, commercial; b, family. 3. Young trees and planting. 4. Cultivation and care—a, first year; b, second year; c, subsequent years. 5. Pruning and replanting. 6. Thinning the fruit on the trees. 7. Protecting—a. windbreaks; b, vermin. 8. Borers. 9. Fertilizers.
"The Mission of Our State Agricultural College"—Prof. J. T. Willard, of the Faculty.
"Fruit Express," by a leading representative of the Wells-Fargo Company, from Chicago, Ill.



OREGON APPLES AT ST. LOUIS.

"Fruit Freight"—Capt James M. Steele, of A., T. & S. F. Ry., Chicago, Ill.
"Land"—Hon. Edwin Taylor, Edwardsville.
"Commercial Peach Growing"—Pres. J. H. Hale, South Glastonbury, Conn.
Reports of Officers.
"Apples, the June Drop"—Dr. J. C. Whitten, Columbia, Mo.
11 A. M. Conference on Growing Grapes. Leader, A. L. Entsminger, Silver Lake.
1. Site and soil. 2. Varieties—a, market; b, family; c, new and experimental. 3. Planting—a, setting out; b, how grown at home; c, age and condition of vines. 4. Cultivation and care. 5. Pruning—a, first year; b, second year; c, subsequent years. 6. Trellis—kind and manner of tying up. 7. Summer pruning, thinning. 8. Gathering.
"Growing Fruit in Idaho"—Hon. Robert Milliken, Secretary Idaho Horticultural Society, Nampa.
4 P. M. Conference on Growing Peaches. Leader, William Cutter, Junction City, Geary County.
1. Site and soil. 2. Varieties—a, shipping; b, home market; c, family; d, late; e, new and experimental. 3. Trees—a, home grown; b, nursery grown; c, seedlings. 4. Planting and pruning. 5. Cultivation. 6. Thinning on trees. 7. Borers. 8. Picking and turning into cash. 9. Does peach-growing pay?
"How to Know the Commoner Insect Pests"—Prof. E. A. Popenoe, Manhattan.
"How to Succeed with Dahlias"—Dr. Geo. P. Lux.
"Greenhouse Work for Women—Growing Dahlias for Cutting"—Mrs. Harriet E. Chandler, Argentine.
"The Flower Store and Making Floral Designs"—A Topeka Lady Florist of Long Experience.
"Market Gardening as Proprietor or Wife"—Mrs. O. F. Whitney, Shorey.
"The Housekeeper's Winter Horticultural Supplies"—Mrs. J. W. Stout, Ladies' Exchange.
"The Most Prolific Tree"—Rev. Dr. Edwin Locke, Topeka.
"Fruit Exhibitions, as Seen by Superintendents and Judges"—Hon. L. A. Goodman.
"The Nurseryman's Side of the Fruit Tree Business"—E. J. Holman, Leavenworth.
11 A. M. Conference on Strawberry Culture. Leader, F. W. Dixon, Holton, Jackson County.
1. Site and soil. 2. Varieties—a, for early market; b, for general purposes; c, for family; d, for experiment and further trial. 3. Fertilizing. 4. Planting and renewing. 5. Cultivation. 6. Picking—a, field work; b, best boxes; c, best pickers; d, sorters, overseers, inspectors; e, how can we keep the pickers until end of season? f, best manner of selling.
"Apples—Picking and Sorting"—Pres. F. Wellhouse.
Paper by S. T. Kelsey, Kawana, N. C., Corresponding Secretary, 1869.
4. P. M. Conference on Truck Farming. Leader, F. P. Rude, Topeka, Shawnee county. Subject, Cabbage.
1. The seed and the seed-bed. 2. The field—a, fertilizing; b, preparation of the soil; c, plants from seed-bed; d, setting in field. 3. Cultivation. 4. Worms and aphis. 5. What crop should not precede cabbage. What crop will best follow cabbage.
"Report of Horticulture at Louisiana Purchase Exposition"—W. F. Schell, Superintendent.
"Mission of the American Pomological Society"—Hon. J. H. Hale, President, South Glastonbury, Conn.
The election of officers will occur Wednesday afternoon at 2 o'clock. The ladies' session will be Wednesday evening.

Oregon Apples at the World's Fair.

Last month we referred to the splendid exhibit of apples made by Oregon during the last days of the World's Fair. We present herewith an illustration showing a part of the exhibit, the photograph having been taken when the exhibit was at its best. The picture does not do the subject justice, for, of course, it does not bring out the rich coloring of the fruit, nor does it show the excellent quality of the apples. The Oregon exhibit was made up of commercial apples, the packages not being selected fruit, but taken from the lot which was offered for sale in various parts of the country. This shows that the ordinary commercial fruit from Oregon was in reality "show" fruit. It is noteworthy that most of these apples, when unpacked, showed the signs of the spraying which the trees and fruit had received. The blossom and stem ends of the apples showed the white of the Bordeaux mixture. Even on the sides of many of the apples were specks of white, testifying to the thoroughness of the spraying. This thorough work accounts, in a great measure, for the quality of the fruit exhibited.

Mr. Charles V. Galloway, who had charge of this exhibit, gave the following as the list of varieties shown when the exhibit was at its best, special attention being paid to Newtown Pippin and Spitzenburg, these varieties succeeding well in that section:

Esopus (Spitzenburg), Yellow Newton, Jonathan, Grimes' Golden, Baldwin, Tompkins King, Hyde's King, Ben Davis, Ortley, Alexander, Arkansas Black, Swaar, Flora, Gloria Mundi, Vandevere. Lawver, Talman Sweet, Stark, Fameuse, Winesap, Stayman Winesap, Delicious, Fall Pippin, Wealthy, Twenty Ounce, Monmouth, Arkansas, Northern Spy, Salome, Canada Reinette, Wagener, Shackelford, Detroit Black, Egan Red, Gano, Yellow Bellflower, Kay, Rhode Island Greening, Rome Beauty, Roxbury Russett, Red Akin, Oregon Red Winter, Wakima, Black Ben Davis, Klikitat, Russian Red, Blue Pearmain, White Pearmain, Westfield, Rall's Janet, English Russett, Wolf River.

Judging by the showing made by Oregon at St. Louis this year, it is safe to say that at the Lewis & Clark Exposition at Portland next year, that state will have a wonderful exhibit of fruit. It should be worth a trip to the Northwest to see what the state can produce in this line.

The Fruit-Grower is under many obligations to Mr. Galloway for some of the show apples.

NOTES.

I expect to keep in good standing as a member of The Fruit-Grower Family as long as I have a tree, shrub or flower to care for.—Frank Strain, Phillipsburg, Kan.

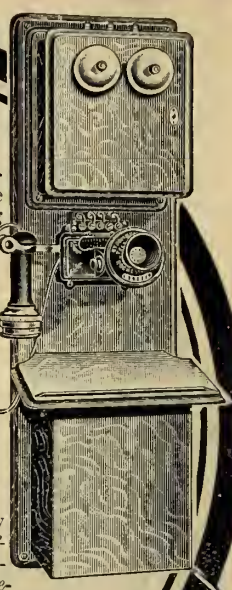
Prof. G. A. Brennau, principal of the Van Vissingen school, Chicago, says he uses The Fruit-Grower in his school work, and sent the subscription of other teachers in the schools. We have lots of other school teachers who use The Fruit-Grower in the same way.

The annual meeting of the Ohio State Horticultural Society will be held at Chillicothe, Dec. 20 to 22. The president of the Michigan State Horticultural Society is expected to be present, and the meeting promises to be one of unusual intreest. The Fruit-Grower expects to have a report of the proceedings for our January number.

The Thorsby (Ala.) Fruit and Truck Growers' Association has elected officers for the ensuing year, as follows: President, P. C. Smith; vice-president, S. E. Norton; secretary, J. O. Ray; treasurer, G. H. Gerald. The members of the association are arranging to plant about 200 acres in strawberries this winter, and propose making a specialty of this fruit. About 50,000 peach trees will also be planted. Last season was a very successful one with the Thorsby growers, and they feel much encouraged.

Inclosed I send $1 to renew my subscription to The Fruit-Grower. I don't know how far behind I am, but one thing I do know: I do not intend to be without the paper.—J. W. Kirkpatrick, Whitesboro, Texas.

I cannot get along without The Fruit-Grower. When I first subscribed I knew nothing about fruit culture, but now that I have studied the paper I can raise as good fruit as anyone.—A. J. Weimer, Brookville, Ohio.



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There is no better way for the farmer to widen the circle of his influence than to join with his neighbors in building a telephone line. It extends the neighborhood circle and enables each one to receive advantages that cannot be had in any other way. The cost is meager compared with the benefits of a good telephone line, and progressive farmers, who are awake to their own interests, are building many such lines.

Stromberg-Carlson Telephones

are used on nearly all farmers' lines because they have been found to be the most suitable telephones for that purpose. It don't pay to experiment when you can get *Stromberg-Carlson Telephones* and be sure of good service. Start off with the best and your line will always work satisfactorily. You will also avoid the expense of changing instruments in a few months. Book F-104 "Telephone Facts for Farmers"—tells how to organize, build, and operate a farmer's line. It's *free* and every farmer should have a copy.

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No More Wash Day Backaches.

The **OK** gets your clothes clean without rubbing them to pieces. Scientific construction enables the O.K. to do your work quicker and better than any other machine on the market. Being the only Rotary Washer with revolving steel ball gearing, it operates so easy that

An Eight Year Old Child Can Run It

while you're hanging up the clothes. There is no escape of steam from the O. K. Washer, therefore, no resulting sickness. Thousands in use. We urge that you see the O. K. at your local dealer's store. If he does not have it send us his name and we will see that you are supplied with one.

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For over fifty years we have grown and sold the best and sturdiest nursery stock that good soil can produce. We now have the largest business of its kind in the United States. To protect our name and reputation and as a guarantee of high quality, all

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is now labeled with the **Red Tag**, with lettering as shown in the illustration. **Look for this tag on every Phoenix tree, it is your protection and our guarantee.**

Order your stock for Spring planting from the oldest and largest growers in the country. We have a great variety of fruit trees, ornamental trees, evergreens, shrubs, plants and novelties. Write for our free catalogue. You can do business with us by mail more satisfactorily than through agents, and at half the cost. Fifty years experience insures careful packing and safe delivery.

Phoenix grown stock is exactly as represented and flourishes everywhere. Write us to-day.

PHOENIX NURSERY CO., 370 Park St., Bloomington, Ill.

HARRISON APPLE TREES

are now shipped to all parts of the country. Their popularity is growing year by year. It's because we produce superb stock, rooted to make rapid growth from the start; strong, vigorous bodies, bred for strong fruiting. All seasons' varieties, all ages of trees. We pack all fruits so we can guarantee delivery in A No. 1 condition everywhere.

The Peach our Specialty.

Due to a favored climate and natural peach tree soil. No region in the world can excel our peach tree stock. We urge the **Ray variety. Tested 16 years. A record bearer and very choice.** All leading varieties. Quality considered, our tree prices are nowhere duplicated. Grapes, strawberries, asparagus, etc. Send for new catalogue just issued. A great book for the fruit growers.

Harrison's Nurseries, Box 32, Berlin, Md.

For Commercial Planters and Others

OUR BLOCK OF

JUNE BUD PEACH

this season is looking unusually fine, and we now feel confident that we will make the finest June Buds that we ever grew.

We have all the standard commercial varieties in June Buds, also have a complete assortment of 1-year Peach, Pear and Cherry and 2-year Apple. Write for Catalogue and prices.

Chattanooga Nurseries, Chattanooga, Tenn.

Taney County, Missouri

In company with a St. Louis gentleman who has large interests and unbounded faith in Taney county, Missouri, we recently made a week's drive to that wonderland of the Ozarks, starting from Springfield one bright October morning.

As thousands are interested in Taney County, and as that region is now entering upon a new ero of development, and, furthermore, as this drive of 150 miles was undertaken for the purpose of investigating the horticultural resources of the county, we will give a report of what we saw and heard.

Branson, the new town on the White River railroad, was to be our first stopping point, but our team could not cover the 60 miles of distance in one day.

The first town on the route is Nixa, Christian county, an attractive village, with prosperity in and around it. Its canning factory made a large tomato pack this season. The farms all along evidence good management and thrift. Between Nixa and Springfield flow the James River and Finley Creek, and there are some grand views from the highest points along the road; one in particular is that of the town of Ozark, sixteen miles to the southeast, the county seat of Christian county. Nearly every house in the place is in view.

It was two o'clock when we proceeded from Highlandville, and it became doubtful about reaching Branson, forty miles away, that day. At sundown on the Roark Creek hills, in timbered country, without moon or lantern to guide us over the rocky, gullied road, it looked as if we might have to tie the horses to a tree and that we must sleep in the buggy. But we pressed on, our St. Louis friend walking ahead in the middle of the road as a guide. Finally we came to a house and it seemed as if refreshments were at hand, but cautious reconnoitering demonstrated that the place was uninhabited and the doors were locked. So the descent of the mountains was resumed. Presently a light was seen and our "hello" was answered. We had arrived at W. W. Walden's where, though the house is small and there are ten in the family, we were told we could stay, and, late as it was, the good woman prepared an excellent supper for us.

Mr. Walden was just the man we were anxious to interrogate, being a horticulturist by nature, though limited in practice because of heretofore distance from a railroad. In a few weeks the Missouri Pacific trains will cross his land. He is a native of Alabama, was raised in North Carolina, lived on the Pacific coast and on the Plains before he found his present home in "Old Taney," where he has made a farm on a wooded slope that produces about everything desired. He says:

"Apples will do well if borers are kept out of the trees." He has a seedling of merit, season August 15 to September 10, which has sold in Springfield at $2.00 a bushel; color, green with yellowish tint, size of Missouri Pippin. Jonathans and Winesaps do well. Mr. Walden says pears do finely, no blight, bear regularly. He told us of some apple trees close by planted seventy years ago by J. M. May, who brought the stock with him from the East. Some of the trees were in vigorous bearing when, in grading the track, the contractors had to blow out the trees from the roadway. A record of three score years and ten, with hardly a fruit failure, answers the question: "Is this an apple country?

Grapes, Mr. Walden testifies, are a natural product of the country. There are many choice seedlings. He gathered a wagon load from a single wild grape vine, and he made 100 gallons of wine one season.

Next morning we soon reached the new railroad and arrived at Branson by ten o'clock. On the way we met Wm. Maddox, who in his eighteen years has known of but one peach failure. Pears have as good a record; so have grapes.

Vernon C. Todd, who lived for some time in Springfield before he and his accomplished wife moved to Taney county, welcomed his St. Louis friend and the writer, and their house was home to us while we remained in Branson.

Mr. Todd spent the most of two days showing the country about the new railroad town. Much has been said about the White River country—of the grand and beautiful scenery. There has been no exaggeration. There can hardly be a more beautiful stream. The water is as clear as crystal, and being at a low stage the beach is wide and the river fordable. Its bed is covered with gravel for hundreds of miles, and most of its winding way through Taney county is bordered by banks that are several hundred feet high.

Crossing the river at the mouth of Turkey creek a ten minutes' drive brings us to the farm of R. F. Powers, formerly from Tennessee. The compliment he pays to Taney county is the highest that can be made. He said: "Our people are the most trusty; they pay their debts."

As for fruit growing, Mr. Powers testified: "Peaches have borne good crops for twenty-one years out of twenty-three." He has peach trees twenty-three years old. "Apples will do well if put out right and cared for. There is not a better section for grapes or plums, nor for berries." Mr. Powers speaks strongly for the pear. His four trees have not failed to bear since beginning to fruit. He gave us some fine specimens of Kieffers. He has never seen any blight in Taney county.

Irish and sweet potatoes do as well there as anywhere. Mr. Todd said: "I have an acre of potatoes that will yield 200 to 300 bushels."

STALLCUP HOME, TANEY CO., MO.

From the margin of Mr. Powers' cornfield one can look down 300 feet into the water. The view is indeed beautiful from the bend looking up and down the stream. Many who read these lines are sure to see this point some time, and when they do they will agree that no landscape surpasses this for real beauty. From the valley looking up 300 feet a visitor would hardly expect that there is deep, rich soil, free from stone and stumps, a large plateau, fine farms; ideal soil, never-failing springs. Corn is the main crop, but wheat, oats and grass are also profitably grown.

The following day we visited J. W. Oliver's 240 acre-farm. Mr. and Mrs. Oliver are Taney county born. Their home is as neat and convenient as one could wish for. Mr. Oliver has 60 head of cattle, horses, hogs and mules. A brother-in-law who lives near by cut three crops of alfalfa this season.

Another home we visited across Turkey Creek from the above farms is worthy of description. Never will its picture fade from our minds. There live Mr. and Mrs. T. J. Stallcup, citizens of Taney county since 1843, residents on this farm for thirty-five years. Here they have toiled from early till late, have built house, sheds and barns, have planted trees in the garden, have cleared 200 acres, and have farmed them with the feeling that such a possession carried responsibilities of cultivation and preservation. Here are twelve acres in alfalfa, also clover and timothy meadows—a field green with wheat. Here they reared children who have homes of their own; so now, unable to do the work of such a farm, they will turn it over to younger hands and take life easy on a few acres. Our confederate friend had a warm hand for his "Yank" callers.

In 1871 Mr. Stallcup planted several apple trees that have borne regularly for twenty-six years. "Pears," he says, "do powerful well and are long lived."

Branson is well located on rising ground not far from the river and on the Missouri Pacific railway, which will run cars into town by the first of January. Trains are now running to Galena. Work on the White River bridge at this point will wait till the cars bring the steel and cement for the structure. The roadbed has been completed, and we found several camps of railroad workers breaking up. With the advent of trains many new buildings will be added to the neat houses already completed, or under construction. It is pretty certain that Branson will secure the location of the new Presbyterian college to be established in this district.

Wednesday afternoon our journey southward was resumed. It is ten miles to Pine Top, near the Arkansas line, where the Taney County Lumber and Mining Company is converting pine logs into lumber. Willard P. Heath of St. Louis, president of this company, is a man of wide experience in managing great properties and of exceptional qualities in his views of dealing with men; believing for one thing, that every man should own a home. Beautiful is this location.

The mills are conveniently placed a hundred feet or so below the crest of the enveloping hills, and for ten hours daily log after log is rolled into position in front of the saws and converted into boards and dimension timbers. The planing mill dresses the boards, which brings out the beautiful grain. Teams keep coming in with logs, and at the sheds other teams from the wide country are loading up with lumber for houses and barns, for school buildings and stores.

In company with Mr. Heath and his efficient manager we walked over the range of hills that frame the mill plant on three sides. How beautiful are the pines! It seems a pity to cut them down. One great log told by its layers that it had been growing for 240 years—growing for the people of today. The soil is adapted to fruit-growing. A large tract will be cleared during the winter and planted to trees, grapes and berries. When these slopes are bearing these different fruits the view will be more beautiful even than now, for the orchards and vineyard will be laden with glistening globes of life for the people of many states.

Pine Top is charming now to one who loves to hold communion with nature, but it will be lovelier when the destructive saws are gone and the mills and sheds are used for packing and canning fruit. From other peaks near by there will always stand the sentinel pines.

Not far away from the mills is one of the three large tunnels of the White River railroad. A visit to this stupendous work is suggestive of the power of genius and money in overcoming natural obstacles. Here is a mountain! A new railroad has reached its foot; the road must have an easy grade; it cannot be carried over the mountain, so it must be tunneled.

To some men shaving is a dreaded task, but not to the men who use

Williams' Shaving Soap

Nothing softens like the thick creamy lather it makes—nothing makes shaving so easy and robs it of its terrors.

"The only Soap fit for the face."
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Want to try it? We will gladly mail you a trial tablet if you will send us a 2 cent stamp to pay postage, and mention this paper.

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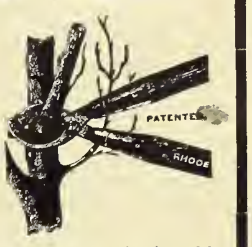
Do you want the Best?

The Rhodes Wood Handle Double Cut Pruners are the Best.



Have double cutting edge, cuts from both sides of the limb and **does not bruise the bark,** but leaves a clean, smooth cut that heals **rapidly.**

Made in four lengths—20 in., 26 in., 30 in. and 36 in. Price, any length, $2.50, delivered.

We have single handed pruners of same style. Send for catalogue No. 100.

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Down to 17
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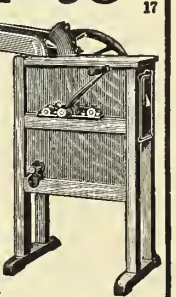

400 and no more at this price.
Retail value, $5.50 to $6.00

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Well made in every way, easy running, removes all corn from the cobs. Has a large, heavy wheel. Adjustable for all sizes of ears. Has a strong frame of seasoned hardwood. Carefully fitted, cold rolled shafts. Capacity, about 10 bu. per hour. Weight, 120 lbs. Shipped from factory near Chicago. Order Number, EX5764 Price with fan and feed table.....**$3.85**

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I will send any responsible farmer one of

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Latest Double Cut, Trip'e-Geared Ball-Bearing
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On Ten Days Trial—No Money in Advance.

If it does not grind at least 20% more ear-corn or other grain than any other two horse sweep mill made, send it back at my expense. Don't miss this offer. Ball-bearing throughout. Only 10 ft. sweep. Light draft. Grinding rings never touch each other—they last for years. Both grinders revolve; self-cleaning. Ask for new Catalogue.

G. M. Ditto, Box 58 Joliet, Ill.

It is 3,200 feet of solid rock that confronts Mr. Gould. The work calls for courage and a large appropriation. Both are given, and the tunnel is completed. It is three-fifths of a mile long. The southern approach is impressive, with the road bed 100 feet down, cut through solid rock. While viewing this great achievement a "shot" was made by some workmen who were clearing away slight obstructions that had been temporarily passed by. It was a light shot, but a shower of stones was sent skyward and fell through the tree tops near the right of way. When the line is open for travel one of the impressive sights will be the immense blocks of stone along the road that were blown out with giant powder by the contractors. Some of these blocks weigh over 40 tons each. One charge of 6,000 pounds of giant powder was fired, which lifted thousands of tons of the mountain and scattered fragments over acres of the valley. As brave an act as was ever done by a photographer was the "taking" of that shot by Vernon C. Todd, an amateur. To get a photograph it was necessary that the operator should stand near by the charge. Not another man was in the danger limit. Mr. Todd got the picture, but the concussion was so great that he was thrown to the ground. Had he stood on the point he was advised to take he would have been crushed, as that rock was hurled into space.

For miles through Taney county the railroad will rest on rock foundation that was dynamited to the proper grade. The two miles of tunnel, the fills and bridges, make about as expensive a piece of railway as there is in the United States.

Besides the Turkey Creek tunnel of 3,200 feet is one much longer and one not so long.

Our homeward journey begins here. It was via Forsyth, where Taney's first fair was being held. Five miles on the road live Major and C. F. Bracken, where our friend knew entertainment would be extended. The major would give facts about the country, and Mrs. Bracken is an accomplished lady, and her table is praised by all who have partaken of its bounties. Commercial men and others who travel in Taney county always plan to stop at this wayside home, afar from village and noisy crowds. Mr. and Mrs. Bracken came from Kentucky to Springfield in 1865, moved to Taney county in 1883, and so have lived on this farm for twenty-one years.

In reply to questions about fruit-growing, Major Bracken said "If a man will get at it right and take care of his trees, he can grow as many apples here as can be produced elsewhere.

"This is far the best peach country. I have trees eighteen years old that have borne fifteen crops, and by pruning will bear as much longer. Will get peaches from two-year-old trees. There are seedling peaches here as fine and large as the Elberta. The pears we grow are the finest I ever saw. Trees bear all they can hold up, —Le Conte, Kieffer and Duchess do best. No blight here.

"This is a splendid grape country. We have wild grapes that are superior to the Concord."

Friday morning we were on the road before 7 o'clock, halted for an hour at Kirbyville, and arrived at Forsyth at 11 o'clock. The roads were not so rough and steep as they have been represented. From many points along the road grand views are obtained. White River in its windings touches Forsyth, which is an older town than Springfield. As far back as 1837 boat loads of supplies for Springfield were landed here and freighted by wagon to the city, fifty miles distant; so this town has an interesting history. It is a prosperous, attractive county seat. The fair was certainly a success. The fruit display was not large, but there were perfect specimens of apples and pears. The vegetables and corn could not be excelled. The attendance was large; hundreds of farmers' teams were hitched in the vacant lots.

Without an exception, every man questioned in regard to fruit-growing declared that peaches, pears and grapes grew to perfection and that crop failures were unknown.

Resuming our trip, after covering five miles, we received an invitation from Joseph Ingenthorn to stop over night. He has a big farm, and from his experience of thirty-two years here we gathered more testimony—all encouraging as to fruit-growing and general farming. "Pears never blight," "Peaches are the finest." "The woods are full of grapes." "Sheep, hogs and cattle are profitable."

We owe much for courtesies extended by this German-American family.

From the Ingenthorn farm is forty-five miles to Springfield. It is a beautiful drive all the way, valley road for many miles with numerous creeks that are fringed with sycamore, elm, oak and walnut trees that were changing the green foliage of spring to the gorgeous hues of autumn.

So numerous are the bends of Bear Creek that we crossed it twenty-seven times before we reached the spring which gives it its source. Along the stream are beds of gravel sufficient to pave the streets of Springfield a foot deep. For how many years has this accumulation of gravel been piling up? And how many million years ago was it that the glacier brought the rock from the North and ground it up? Such questions came to us on a drive of six days through a wonderland.

All that has been said in this article complimentary to Taney county for fruit growing is true, and soon that county will be as noted for its orchards and vineyards as any between New York and California. Extensive plantings will be made the coming season. One company will set out 200 acres and will plant other large tracts in 1906.

Taney county has an excellent citizenship—a debt-paying people, hospitable, the descendants of pioneer ancestors. Not a school house did we see that would not be creditable to any district. Some children have two miles to walk, but new houses are being built that will divide this distance.

Especially is Taney county rich in scenery. Nature has piled up within her limits mountains, covered them with pine and oak; has excavated wonderful caves; has touched the rocks and has brought forth ever-flowing springs.

A few miles from Branson is Marvel Cave, which for beauty, size and general interest surpasses Mammoth cave, which for two centuries has been listed as one of the wonders of the world.

If Taney county had no other possession than White River she would be rich, for in all the land there is not a more beautiful stream. Its waters are as clear as the bluest sky. It has many windings, endeavoring to touch as much as possible of the friendly land and thus lengthen its journeyings. At points its adamantine banks rise 500 feet.

So beautiful is this river that the wish comes over those who see it, and who have read Bryant's "Green River" and Whittier's lines on the "Merrimac" that these inspired New England sages had looked upon this Ozark Mountain river and had given it a place in literature.

Before the leaves come to replace those that are now falling into the reflecting waters of White River, train loads of visitors will travel through the tunnel, along the river and creeks, over trestles on miles of rock roadbed, drilled and blasted from mountain sides, who will see for themselves this old new county of Taney.

G. A. ATWOOD.

Cheap eggs are as good as cheap lamp-chimneys.

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If you use a wrong chimney, you lose a good deal of both light and comfort, and waste a dollar or two a year a lamp or chimneys.

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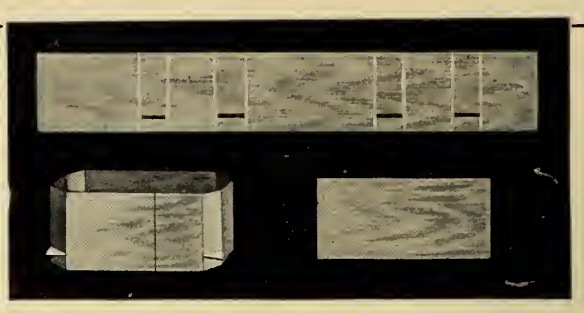

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Spraying With Lime-Salt-Sulphur Spray in Fall.

Recently a reader of The Fruit-Grower asked if the lime-salt-sulphur mixtures as recommended for San Jose scale could be used after the leaves fall from the trees in autumn, as effectively as the same mixtures are used in the spring. At that time we knew of no definite experiments along this line, and the subscriber was so advised. But it seems that the Geneva (N. Y.) Station has been conducting some experiments along this line, and has just published the results of the work in Bulletin No. 254.

This bulletin refers to the fact that the early spraying with the sulphur mixtures were always made in spring, before growth started, but owing to the spread of the San Jose scale, and the great number of trees to be sprayed, it had been found that the process of spraying must either be simplified and shortened, or longer time must be given to the work. Accordingly, the experiments were undertaken to see if the fall spraying will be as effective as the spring spraying. Before these experiments were undertaken, says the bulletin, it was uncertain what effect the fall application of sulphur washes would have upon the trees or upon the insects.

We quote from the bulletin as follows, for the benefit of Fruit-Grower readers who are troubled with San Jose scale, or who may be troubled:

"In preliminary tests with the fall spraying with lime-salt-sulphur mixture, by Mr. Parrott, who was then entomologist of the Ohio Station, it was found that the fall treatment was as effective against the scale as the spring treatment, and was not injurious to the few varieties of peaches and plums under observation.

"The effect of such sprays on the trees, though, often varies with the weather following the applications and with the condition of the trees themselves; and a single test cannot be considered a certain index to the value of such treatments. Accordingly it was determined to repeat the work on more species and varieties of fruit trees, in different localities, and for several seasons; and at the same time to test some modifications of the wash commonly used.

"Three orchards were selected, two near Geneva and one near Queens, Long Island. One of these was a very thrifty young orchard of peaches and plums, which had received the best of attention in every respect and contained no scale. The other orchard at Geneva, of apples, pears, crab apples, cherries and plums, was older, was well infested with scale and had received no treatment for disease or insects, but had been well cared for otherwise. The third orchard, at Queens, contained only apples and peaches, and showed plainly the effect of scale injury. The sprayed trees in the three orchards numbered 66 large apple trees, 33 pear trees, 257 plum trees, 39 cherry trees, 6 crab apple trees and 252 peach trees.

"The orchard on Long Island was treated during the second week in November, those at Geneva about 10 days later. At both places the applications were made on cold days, followed by considerable rain and snow within two weeks. Five washes were used, made as follows:

Boiled Lime-Sulphur-Salt Wash.
(Fomula I.)

Lime	15 pounds.
Sulphur	15 pounds.
Salt	15 pounds.
Water	50 gallons.

"This was prepared in the usual method by first slaking the lime to a thin whitewash and then adding sulphur and the salt. These ingredients were distributed thoroughly in the whitewash and the mixture boiled from one to two hours.

Self-Boiled Lime-Sulphur-Salt Wash.
(Formula II.)

Lime	40 pounds.
Sulphur	20 pounds.
Salt	15 pounds.
Water	60 gallons.

"This wash was cooked without the direct use of external heat. First the sulphur was made into a paste with hot water and was then emptied into a barrel containing forty pounds of lime, which was started to slake with twelve gallons of boiling water. During the slaking process the barrel was covered to prevent the loss of heat. Occassionally the wash was stirred to secure a more uniform distribution of the sulphur in the whitewash. In twenty minutes after the time that the lime first commenced to slake, enough boiling water was added to make the required sixty gallons of mixture; after which the salt was added and stirred until dissolved. The wash was then strained and applied hot.

Lime-Sulphur Wash.
(Formula III.)

Lime	15 pounds.
Sulphur	15 gallons.
Water	50 gallons.

"This mixture was made in the same manner as the boiled lime-sulphur-salt wash, except that the salt was omitted.

Self-Boiled Lime-Sulphur-Caustic Soda Wash.
(Formula IV.)

Lime	30 pounds.
Sulphur	15 pounds.
Caustic soda	6 pounds.
Water	50 gallons.

"In preparing this wash the lime was started to slake with six gallons of water; and, as soon as the slaking commenced the sulphur, which had just previously been made into a thin paste with hot water, was added and thoroughly mixed in with the slaking lime. To prolong the boiling of the wash, the caustic soda was then used, with water as needed, and the whole mixture was kept thoroughly stirred. As soon as the chemical action had ceased the required amount of water was added, when the mixture was ready for use. The soda used in the preparation of this wash is a powdered 74 per cent caustic soda, sold by the Penn Chemical Works, 1322 Washington Ave., Philadelphia, Penn. It sells for 4c a pound and is contained in 50 lb. cans.

"A modification of this method is discussed later on in this article.

Boiled Lime-Sulphur-Caustic Soda Wash.
(Formula V.)

Lime	30 pounds.
Sulphur	15 pounds.
Caustic Soda	6 pounds.
Water	50 gallons.

"This was prepared in the same manner as the self-boiled lime-sulphur-caustic soda wash, after which the mixture was boiled for one to two hours over a fire.

"In each experiment with each variety of fruit the number of trees was divided as evenly as possible for treatment by the different sprays. Comparative tests were made of the above described washes in all of the orchards with the exception that the self-boiled lime-sulphur-salt wash was omitted in two orchards, and the self-boiled lime-sulphur-caustic soda wash in one.

"All the trees were examined carefully early in May and several times during the summer to determine the effect of the treatment. All the washes proved equally destructive to the scales, and as effective as spring treatments upon similar trees. This was true not only of San Jose scales, but also of the scurfy bark louse, which infested many of the trees in one orchard. On all trees with smooth bark practically all the insects were killed, whether few and scattered or so plentiful that portions of the trees were encrusted with a layer of the scales so closely crowded that the bark could not be seen. On trees with naturally rough bark or bark roughened through age, some insects would escape and occasional ones might appear upon the new growth and upon fruits. In general, wherever any one of the washes was brought into contact with the scales the insects were killed. On smooth trees, any considerable number of scales left unharmed is evidence of lack of thoroughness in spraying; but no heavy wash or spray mixture need be expected to reach the scales that are clustered beneath close-clinging pieces of rough bark or hidden in deep cracks and crevices.

"The winter of 1903-04, following these treatments, was the coldest for years; and untreated trees in many localities, especially trees weakened by disease or by insect attack, suffered severely. This fact makes it somewhat difficult to interpret fairly the variable results of these spraying tests; but comparison could be made with a large number of check trees in three orchards of different general condition as to varieties, vigor of growth, and amount of scale infestation.

"In the most vigorous, scale-free orchard at Geneva, the coating of lime and sulphur considerably reduced both bloom and foliage upon Fitzgerald peaches and Reine Claude plums; but after the blossoms dropped the sprayed trees showed marked improvement and by the end of the season equalled the checks in appearance, but bore a smaller crop of fruit. It seemed as though all the trees were lessened in vitality by the severe winter and that the sprayed ones were also affected by the spraying; but that the check to fruit production caused by the spraying allowed the sprayed trees to recuperate faster. Had the unsprayed trees been well infested with scale, the advantage at the close of the season would probably have been with the treated trees. notwithstanding the iniury due to the spray mixture.

"In the other Geneva orchard bloom was somewhat less profuse on the sprayed trees, but the injury was less than in the first orchard. Sprayed Morello cherries, apples and pears showed slight diminution of bloom; but crab apples suffered no injury. Trees in this orchard that were much infested with scale were severely injured by the winter.

"In the Long Island orchard the

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CHICAGO GASOLINE ENGINE CO. 57 N. JEFFERSON STREET. CHICAGO, ILL.

sprayed trees, except those reduced in vigor by the scale or injured by the winter, were unaffected by the spraying. The sprayed apples showed, later in the season, increased vigor and healthfulness as a result of control of the scale.

As a whole the work shows that sulphur washes applied in the fall may under certain conditions cause injuries such as sometimes attend the excessive use of these sprays in the spring. But it is believed to be advisable, when experience has shown that it is impossible to spray all of the trees in the spring, to employ fall spraying for the treatment for the bardier varieties of fruits;—as the increased vigor and usefulness of the trees arising from the control of the scale will more than compensate for probable losses in fruit yields.

"All of the washes tested proved equally effective in the destruction of the scale. The addition of caustic soda or salt to a lime-sulphur wash cooked by fire or steam did not add to its effectiveness. While satisfactory in the present experiment, later tests with the lime-sulphur wash prepared without external heat showed that there may be considerable variation in the different preparations which may be largely avoided by using high-grade lime and knack in the cooking operations. The washes that are well suited to the needs of average orchardists are the lime-sulphur wash boiled by fire or steam and the lime-sulphur- caustic soda wash, prepared without external heat. In conducting the experiments this spring the following method was adopted for the preparation of the lime-sulphur-caustic soda wash as it is an easier way of making the mixture. First the sulphur was made into a thin paste with hot water and was then poured over and well distributed throughout the lime. Additional water was used as needed to keep the lime-sulphur material in a rather stiff paste. As soon as the lime was slaked the full amount of caustic soda was added and stirred until the boiling action had ceased. Enough water was then poured in to make the required amount of wash. By using boiling water in making a paste of the sulphur and slaking the lime much less time is needed to prepare the wash."

Platte Purchase Horticultural Meeting.

The December meeting of this society was held at the court house in St. Joseph on Saturday, Dec. 3 . No regular program for the meeting had been prepared, but Mr. N. F. Murray, who recently made a trip through West Virginia, Ohio, Western New York and other sections reported concerning fruit conditions in that part of the country. Mr. Murray reported that comparatively few apple orchards are being planted, and said there was much encouragement for the man who will plant and care for orchards in the Middle West. It is true, he said, we have had several years of discouragement, particularly the present one, but this cannot last, and the growers should care for their orchards properly and know that reward will come. The speaker said further that from his investigation he is convinced there will never come a time when good, sound apples will not be a good product to grow, for he has never believed in over-production of this grade of fruit, and is now more than ever convinced that over-production will not come.

In connection with Mr. Murray's remarks, the members discussed the apple situation as it has confronted the Eastern growers this season, and it seems to be the consensus of opinion that apple growers everywhere must learn to handle their own fruit; to pick and pack it, and, if need be, to look after its distribution. Not that it will always be best to do this, but it is better to be prepared to handle the fruit, so that if buyers do not come the fruit will not be wasted, as it has been in many orchards this past season. Along the line of this discussion, Mr. B. F. Stuart will have a paper for the January meeting on the subject of "How Shall the Growers Prepare to Dispose of Fruit Crops?" At the January meeting a program will be arranged for the year, and officers for the ensuing year will be elected. The meeting will be held at the court house in St. Joseph, Saturday, January 7, 1905, at 10 a. m.

At the December meeting J. H. Karnes and W. D. Maxwell were elected to represent the society at the meeting of the Missouri State Horticultural Society at Neosho, Dec. 20 to 22.

Pointers on Road Dragging.

If the road is very rough and rutty, drag it immediately after the rain ceases to fall. Then drag again as soon as it dries a little. Dragging in the mud will do astonishing things, even for the big mud holes that extend clear across the road in the low places. Try it. It will astonish any person. I did it for the first time this summer. The drag will dodge and skew around, but it will push a part of the soft mud into the middle of the mud hole and make a place for the surplus water at each side. Travelers will prefer the water to the mud and the mud will lie in the center and bake hard, forming a nucleus to which earth can be added next time the drag is used. Try dragging in the mud and report the results.

An important proviso of our road dragging system (which is not always understood) is: "Drag the road from your own front gate to your neighbor's front gate, toward town." It is possible to make any rule for general application that will not fail of its purpose in certain exceptional cases. The sensible thing to do is to adopt a plan that will most nearly reach all cases. After years of discussion, the above sentence has been chosen as most nearly meeting the requirements. Men say that this will make some farmers drag more than their share. But so will any other plan. The way to settle the question in your own mind is to try to suggest a plan that is not open to objection. You will find it hard to do. Take for instance the plan of having every man drag along his own farm. Here is a plan that appears good at first sight. A little picking to pieces, however, quickly exposes many weaknesses. Let me point out one. The majority of us own land on one side of the road, shall we drag only to the center of the highway? You see the absurdity. Nor is this plan economical. Yet I know of one case where a man drags to the center of the highway.

Now the other plan is economical; it is convenient (because it cares for the road that the farmer sees oftenest), and where adopted makes a good road all the way to town for everybody.

D. WARD KING.

Growing New Varieties of Grapes.

From the number of new varieties of grapes coming to the front nowadays one would think it an easy matter to produce new varieties of value from seed. An experience of my own in this direction shows it is not so. Several years ago I had Concords, Delawares, Catawbas and other good varieties, and saving seed from the finest bunches, in due time I sowed them. There were hundreds of thrifty seedlings. I took good care of them, keeping them nicely staked. Whenever I discovered a vine having wild-looking leaves or long-jointed canes, I pulled it up. Rigidly pursuing this process, I found I had at the end of the season more than fifty vines that looked as though they ought to produce good grapes.

I cultivated these vines for several years, without any fruit, and discovered that it takes a very long time of the usual cultivation to bring a seedling grape into bearing. I also discovered another fact, to me very singular, the cause of which I cannot explain. If a seedling grape that refuses to bear is layered, the new plants produced by layering will bear fruit as soon as large enough; as soon as regular Concord layers. So if one wants to raise new varieties of grapes from seed he must layer his seedlings or wait, perhaps eight or ten years, before finding out what sort of fruit he will get.

In my case the best specimen resembled Delaware in color; but was twice its size. I had great hopes of that particular vine. I watched the ripening of its first bunch with deep interest. On eating, I found it sour almost as a frost grape and absolutely worthless.

D. A. FLETCHER.
Maquoketa, Iowa.

Protecting Trees Against Rabbits.

Take a small sweet potato and make a small hole through it lengthwise, large enough to hold the contents of a No. 1 capsule. Fill this hole full of strychnine, and take a small stick, sharpened at both ends. Stick the potato on one end and push the other end in the ground near the young trees. If you have many trees, put out several potatoes. The potatoes should be taken in every morning if there is any danger of any animals eating the potato. Then put out the poison again in the evening. If this fails, sell out your place, come to Fordyce, Ark., and I will replace the trees free of charge.

G. W. MATHIS.
Fordy e, Ark.

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Some Belated Queries

J. W. K., Montrose.—Why do strawberry plants bloom late in fall? Half of mine bloomed in November; they were cleaned out quite late. (2) What is the value of leached wood ashes between strawberry rows? Plants are in half-matted rows. I thought of distributing the ashes and then mulching with old sawdust. How would this be?

Answer by W. L. Howard: (1) Any disturbance which causes an abnormal activity of a plant will often result in causing it to bloom out of season. Late summer and fall rains accompanied by warm weather, injury by insects, diseases etc., bring about these results. (2) Leached wood ashes contain only about one-fourth as much fertilizer as the unleached. The ashes would be good for the strawberry plants if spread between the rows and worked into the soil by cultivation. A layer completely covering the ground would not be too much. The nearer rotted the sawdust is the better it would be for the soil and the less likelihood would there be of attacks by insects which infest decaying wood . The sawdust improves a soil that is inclined to bake.

O. L., Missouri.—Dr. Whitten recently said that pear seedlings—or it may have been apple seedlings—would do to graft quince on, provided we graft long scions and plant them deep, etc. Now, could one not use quince seedlings, with better results, or not?

Answer by W. L. Howard: Dwarf pears are nearly always secured by grafting the ordinary pear on the quince. This must be what Doctor Whitten said or intended to say. The quince is usually budded or grafted upon quince stock, the Angers usually being grown from the seed for this purpose.

E. E. S., Paonia, Colo.—I have 12 acres of peach trees, which were planted for Elberta, but I find scattered throughout the orchard a number of Early Crawford trees. I desire to have them replaced by Elberta. My trees will be two to four years old in the spring. Had I better dig up the Early Crawford trees and replant with Elberta, or had I better bud them next summer?

If the trees are in good condition, quicker results can likely be obtained by budding the branches of the Early Crawford trees next summer. Then, too, buds can be taken from Elberta trees of the best type, and results will be certain.

L. M., Springfield, Ark.—I would like to know something about the different varieties of seedless apples. How about the Spencer seedless apple, which originated in Colorado? Is it worthy of planting to any extent?

The fact that the apple is seedless is not sufficient to recommend it, for there are many other qualities an apple should have. It is safe to say that the Spencer apple, as with all other new apples, should be experimented with carefully. It may be seedless all right, but at the same time be absolutely worthless.

W. H. McM., Harrison, Ark.—I am told that pear and cherry trees do better uncultivated than cultivated. Is this statement true?

The cultiavtion of pear trees, after they are of bearing age is likely to cause a rank growth, which is more subject to blight, and for this reason it is generally recommended to get the pear orchard in grass. Cherry trees, however, can stand cultivation all right, and in fact should have the same treatment of other fruit trees. They do well in grass. it is true, but often suffer from drouth

M. T. C., Temple, Okla.—I would like to know if it is advisable to plant a row of grapes or other small fruits, as currants, blackberries, in between the rows of fruit trees, or between the trees in the row?

Small fruits are often planted among fruit trees, while the latter are young. The plan works well, where the plants are cultivated. Of late, however, there has been a tendency to not plant raspberries among the trees, on account of the fact that crown gall often spreads from the raspberries to the trees. Currants are a good fruit to plant this way, as they stand the shade well. In fact, it is likely the only way this fruit can be grown in your section, as it succeeds best in a cool climate.

W. D. H., Troy, Mo.—(1) Would excelsior stuffed in the top of veneer tree protectors in early spring, protect young trees from borers?

Answer by Prof. Stedman: Excelsior stuffed in the top of the protectors is better than nothing, but not as good as cotton.

A Tribute to the Fruit-Grower.

Nurserymen all over the country offer The Fruit-Grower as premium to their customers. They do this, because they realize that one who reads The Fruit-Grower regularly will be more apt to succeed with his trees—and successful customers are good advertisements for nurserymen. A number of the nurserymen are pushing The Fruit-Grower in this way, and thereby helping themselves and their customers. Here is the proposition made by Woodview Nurseries, Mt. Holly Springs, Pa., which shows how this paper stands among reliable nurserymen:

"The Fruit-Grower will be sent for one year with every order accompanied by $7 cash. The Fruit-Grower is better than ever, and worth its weight in gold to every man who owns $7 worth of trees."

NEW BOOKS.

As the long winter evenings approach, farmers have more time to read, and are naturally interested in good agricultural books. A number of new books are offered now, for the benefit of those who want to improve the time reading. Among the books received by The Fruit-Grower recently are the following:

Farmer's Cyclopedia of Agriculture. This book is published by the Orange Judd Company, the authors being E. V. Wilcox and C. B. Smith. The character of this book is well indicated by its title, for it is a "cyclopedia of agriculture." It treats of the whole subject of agriculture, in all its branches —field crops, gardening, fruits, nuts, etc. It also has exhaustive articles on the subject of soils, fertilizers, drainage, irrigation, spraying, principles of feeding live stock, etc. As the publishers say:

"The discussion of each crop includes an account of culture methods, suitable soils and fertilizers, methods of harvesting, storing and marketing, economy of production, uses, feeding value; also descriptions and accounts of all dangerous fungous diseases and insect pests which attack farm, orchard and garden crops, with their remedies. This book thus contains pointed information on what each crop is, when to plant it, how to plant it, what fertilizers to use, how to cultivate, harvest, store and market it, what it is good for, what place it should occupy in farm economy, and what to do to prevent injury from disease and insects."

The book contains about 700 pages and nearly 500 illustrations, and includes over 6,000 indexed topics. In cloth binding it sells for $3.50, and in half morocco for $4.50. The Fruit-Grower will be pleased to send this book to any of its readers postpaid, upon receipt of price.

"The Business Hen" is the title of a book published by the Rural New Yorker, and it was edited by Mr. H. W. Collingwood, editor of that paper, assisted by others who are qualified to offer advice. This book is intended for the practical poultryman, who wants to have a profit from his fowls, and is not intended as a "fancy poultry" book in any sense. Mr. Collingwood, as editor of the Rural New Yorker, has come in close touch with the problems which confront the everyday farmer or farmer's wife who tries to raise poultry. Knowing these problems, and aware of the fact that no poultry book hitherto published covered this ground, he undertook the work of preparing such a book, and "The Business Hen" is the result of his effort and the assistance he has received from others. The book is thoroughly practical, is well printed and fully illustrated. The publishers say: "The owner of this little book will have in a plain and condensed form the best advice that successful farm poultrymen are able to give to those who wish to cultivate the business hen and turn an honest dollar to her credit."

In paper binding, the book sells for 75 cents; in cloth binding for $1. Address orders to The Rural New Yorker, 316 Pearl street, New York City.

What Have You to Advertise?

If you have anything which might he used by the hetter class of farmers and fruit-growers, you will find the advertising columns of The Fruit-Grower the best and cheapest means of reaching buyers of this class.

Nurserymen will find that an advertisement of general nursery stock or plants may be placed before purchasers more cheaply through the columns of The Fruit-Grower than by any other method. Compare the cost of a quarter page ad—$35.00—with the cost of postage and printing of 40,000 circulars—about $500.00 at least.

Try an ad of large size. You will not regret it. Quarter pages $35.00, half pages $65.00, full pages $120.00. In many cases one order will pay the cost of the ad.

While every reader of The Fruit-Grower is a huyer of nursery stock, it should be remembered that hy far the majority of them are general farmers who are intcrested in horticulture, and they are buyers of anything used in modern farming operations.

Every advertiser should be represented in at least the "Big Four" numbers of 1905, namely—

January . . Anniversary
February . Spraying
March . Gardening
April . . Small Fruits

As the **first forms** for the January number will close the latter part of December ,reservations for space should be made at once.

If you want to sell your farm, try the "Farms for Sale" columns of The Fruit-Grower. Note the special rate of 2c a word, cash with order.

If you want any special information about circulation, or any of the four special numbers, write us and it will be cheerfully furnished.

The Fruit-Grower Co., St. Joseph, Mo.

THE BEST COOKING RANGE
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$10 to $20 SAVED.

Your money refunded after six months' trial if CLAPP'S IDEAL STEEL RANGE is not 50 per cent hetter than others. My superior location on Lake Erie, where iron, steel, coal, freights and skilled lahor are cheaper and hest, enahles me to furnish a TOP NOTCH Steel Range at a clean saving of $10 to $20. Send for free catalogue of five distinct lines: over 50 styles and sizes, with or without reservoir, for city, town or country use.
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Scions of the **Great "Black Janet;"** also for sale Scions from choice **Bearing Trees.** Seedlings of all kinds from hardiest seed.

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G. S. CHRISTY
JOHNSON, NEB.

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will not wash off. WARNOCK'S TREE PAINT. The hody of this paint is pure pine tar. First we destroy the astringent properties in the tar. Next we add the essential protective ingredients and hoil all until they become homogeneous. This paint keeps the bark soft and smooth. It protects the trees in time of sleet and hard frost, also in time of extreme heat it prevents evaporation of sap which is the chief cause of sun scald.

One application of our paint has protected the large orchards located at Atchison, Kan., from rahbits, mice, horers, canker worms and San Jose scale for longer time than four years. There is where we sold to our neighhors for three years hefore we advertised our paint to the public. For one year and a half we have sold it all over the United States and it has given universal satisfaction.

The animals and insects named above do not work on pine trees, neither will they work where our paint is used. You ask will it injure trees. We answer NO, and ask, does grafting wax injure the tenderest grafts?

If our paint is applied according to directions and it fails to protect from rahbits, mice, horers and San Jose scale for three years we will return the purchase price with freight charges added.

Agents wanted, in all unoccupied territory. For circulars and full information write

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Experienced Scale, Machinery, or Specialty Men to sell Osgood's Line of Standard Scales. Covers all kinds of husiness and farmers. Good side line. No samples. Beautiful catalogue. Liheral contract. Write now. OSGOOD SCALE CO., 30 Central St., Binghampton, N. Y.

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had the honor o fexhihiting the largest Pecans in the world at the World's Fair Exhihition at St. Lonis, known as the 20th Century Pecans; had also the Paragon (both grafted), and the Port's Select Pecans (seedling). We furnish also trees of the same. The 20th Century and Paragon both grafted on 2 or 3-year-old roots, bear in four years, the Port's Select in 5. Also furnish trees of the Japan Chestnut, Japan Walnut and English Walnut. Send for booklet. TEXAS SEED PECAN CO., Fort Worth Texas.

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Fruit Growers send 25 cents for 6 months trial subscription to THE PEACH GROWER, Savannah, Ga. It is a practical paper for growers of all kinds of fruit, of peculiar interest to peach growers. Puhlished in the greatest peach state in the world, it puhlishes much matter of interest to peach growers everywhere. During the World's Fair, the editor, Mr. R. M. Martin, may be found in section 74 of the Palace of Agriculture, where he is in charge of the Georgia exhibits. Detailed information of the puhlication may he had from him.

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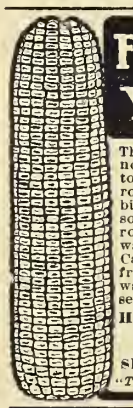

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Is the place to huy your fruit trees, berry plants, roses, flowering shruhs, evergreens, forest tree seedlings, etc. We have the New Cardinal, best raspherry on earth. Apple Root Grafts. Agents wanted. HOWEL & CHRISTIE, Waverly, Kan.

APPLE SEED

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a two-cylinder gasoline engine superior to all one-cylinder engines; revolutionizing gas power. Costs Less to Buy and Less to Run. Quickly, easily started. No vibration. Can be mounted on any wagon at small cost—portable, stationary or traction. Mention this paper. Send for Catalogue. **THE TEMPLE PUMP CO., Mfrs., Meagher & 15th Sts., Chicago.** THIS IS OUR 51st YEAR.

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ST. JOSEPH, MISSOURI

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W. G. Campbell, Jr., General Manager James M. Irvine, Managing Editor

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Entered as Second-Class Matter in the Postoffice at Saint Joseph, Missouri

Volume 15 ST. JOSEPH, MO., DECEMBER 15, 1904. Number 12

The January Fruit-Grower.

The January number of The Fruit-Grower will be our regular anniversary issue. It will have an attractive cover design, printed in colors. Features of the issue will be:

Reports of the annual meetings of the Illinois, Missouri and Kansas Horticultural Societies. At these meetings the fruit-growers of the different states will discuss their problems, and the reports will be interesting and helpful.

Mr. D. Ward King will contribute an article on "Road Dragging," illustrated with some original photographs.

The first chapter of a series of articles on "Plant Propagation"—budding, grafting, etc.—will be published. This is an article by Prof. W. L. Howard, which will be published in book form by The Fruit-Grower, but it will also be published in these columns, the first installment appearing in January.

The spring announcements of seedsmen and nurserymen will appear, and they will tell of the new things which will be offered in the catalogues for Spring, 1905.

The first installment of a special series of articles on "Poultry Raising and Fruit-Growing as Allied Industries" will be submitted by Mr. T. E. Orr, secretary of the American Poultry Association. These articles will run through January, February and March, and will be illustrated.

Arrangements are being made for a special article on the catalpa plantation of Messrs. Yaggy, Hutchinson, Kan., and it is hoped to submit this, with illustrations, in January.

If space will permit, an illustrated article on "Peach Growing in Georgia," by J. H. Hale, will be a feature. If not published in January, it will appear later.

Besides these special features, the regular departments will appear as usual. Answers from correspondents concerning their problems will be published, and much other matter sent in by members of The Fruit-Grower Family. The issue will comprise about 56 pages, and will be a good one in every way. Not the least interesting feature will be the advertisements of reputable firms which use our columns every year.

The January number will be the first of our special issues for the coming spring months, and it will alone be worth the price of a year's subscription.

This month The Fruit-Grower has taken in the subscription list and good will of American Gardening, which for many years has been published in New York City. This publication has stood high among the papers of its class, and had a list of very faithful subscribers. These persons will now receive The Fruit-Grower to carry out the obligations of the old company, and we trust that these new members of The Fruit-Grower Family will appreciate our paper as do the thousands who have been on our list heretofore. This new blood in The Fruit-Grower Family will mean that new ideas will be presented, and reports will be submitted from new fields. And The Fruit-Grower will be made better thereby. To advertisers, this new move will mean that several thousand new subscribers will be added to our list, and there will be an added prestige by reason of the fact that The Fruit-Grower was selested by the publishers of American Gardening to continue all unexpired subscription contracts. Now is the time to subscribe for and advertise in The Fruit-Grower. Stick a pin there.

The Fruit-Grower has recently mailed to every subscriber on its list a little souvenir booklet, "The Evolution of an Idea," which tells the history of this paper, and contains illustrations showing views of our printing plant, with portraits of the members of the company. This booklet, we trust, will be interesting to all our readers, who have taken so much interest in the paper, and who have helped in such a substantial way to build up its present standing. In this booklet we have taken all the members of the Fruit-Grower Family into our confidence, and told them all about the paper, from its beginning to the present time. Many of our readers were acquainted with this history before, but all of them will now, we hope, feel an increased interest in the paper and what it stands for. Many of our subscribers have written us very kind letters since receiving this booklet, and have assured us they will get us a number of new subscribers, now that they know the history of The Fruit-Grower. We shall be glad if everyone who receives a copy of this booklet will feen encouraged to get up a club at our special rate of five for $1.00. Have you received your booklet? And will you get up a club? Now is a good time to do this. Send for some sample copies, and get these new subscribers.

With this issue of The Fruit-Grower will be found an index to Volume 15, the year 1904. Those readers of The Fruit-Grower who have carefully saved their papers each month will appreciate this index, for they can now have their papers bound, and will have an important horticultural volume. Those readers who have not saved their papers should look over the list of articles published, and see what they have missed by not saving The Fruit-Grower each month. We believe everyone will be well repaid by saving the papers, for there will be many times when one will want to refer to the numerous articles. The index will be published every year, and if you have not saved the papers in the past you should start with the January number and save the issues for 1905.

Dr. J. W. McCracken, secretary of the Sulphur Springs (Ark.) Fruit-Growers' Association, sends the suggestion that The Fruit-Grower publish in each issue a list of the various associations of fruit-growers, together with the secretaries of the respective organizations. DrMcCracken suggests that if necessary a small fee be charged for the service. The suggestion of publishing the list is a good one, and The Fruit-Grower will be very glad to undertake the work, without any charge whatever. At one time such a list was published in our columns, but the different associations did not keep the names of their officers corrected up to date, and some confusion resulted. But we believe such a list will be of great benefit to the associations in more ways than one, and we ask that the names of all associations, with the name and address of the secretary, be sent us at once, to appear in our January number. Speak up, gentlemen. It pays to advertise—especially when the advertising does not cost anything, as in this case. Send in the name of your association, with the name and address of your secretary.

Last month we called attention to seevral plans of marketing fruits which are now being worked in various parts of the country. This month a modification of one of these plans has been worked by two different advertisers. One is an apple buyer, E. P. Loomis & Co., of New York City. This firm sells apples in 25-pound and 50-pound boxes, and the prices quoted are enough to make an apple-grower's mouth water. Colorado Jonathans, packed in 25-pound boxes, sell for $2.50. This is the highest quotations we have seen, but other varieties are quoted at lower prices. Space is used in high-class papers to advertise these apples, delivered to the consumers direct. Among other publications in which we have seen the advertisement is the Ladies' Home Journal, the advertising rate of which is $84 per inch; the advertisement occupied several inches, too. The other advertiser seems to be a grower, who sells his fruit at first hands. This advertiser used space in the Boston and other daily papers to advertise his apples, the following advertisement being used:

APPLES.

I am putting up Baldwin Apples as I always want to buy them. Fancy table apples, 112 in a box, each apple papered, each a large perfect apple. These I can sell for $1.50 a box, delivered to Boston & Maine freight here, or can deliver by express anywhere within 50 miles of Boston for $2 a box.

Then I have barreled apples, not as large as the table apples, but in every way perfect. These I can sell for $2.50 per barrel, customer paying freight.

And I have cooking apples also, at $1 a barbel; good fruit, wormless, or nearly so, reasonably sound.

E. W. UPTON, Townsend Harbor, Mass.

That advertisement ought to bring business, and no doubt it will. If Mr. Upton sends out good fruit, which will grade just as he says, he will have a splendid field for next season's business, too. If he deceives the public, then his advertising experience will be very brief. It is remarkable how this matter of selling fruit by the grower, packed in neat, small packages, is growing. There is only one objection to the successful working of this plan, and that is the failure of an apple crop. If a grower advertises in this way and establishes a market for his fruit, with customers who depend on him for their fruit, he is apt to suffer a set-back when his crop fails some season—as it will certainly fail sometimes. But, on the whole, The Fruit-Grower thinks this move is in the right direction, and looks for an increase in this way of marketing fruit. But note this: It must be good fruit, and it must be packed by an honest packer. Any other kind of a man will fail in selling fruit in this way.

In connection with the foregoing, we want to call attention to another thing: Notice the difference in the price between the boxed apples and those in barrels—$2.50 per barrel of three bushels, and $1.50 per box of one bushel. The grower says the apples are the same, except that the barreled apples are not quite so large, but they are just as sound. Does the smaller package secure this increased price? If so, it is a good argument in favor of the box. It would seem, too, on the face of it, that boxed apples can be sold in this way much more readily than barreled fruit. A box can be taken home on the street car, while a barrel of apples would have to be hauled in a wagon, and this is not always convenient.

In connection with the change of political sentiment in Missouri, it would be interesting to know just how many votes were contributed by the new farmers who have moved to the state within the last few years. It is well known that thousands of farmers from Illinois and Iowa have bought farms in Missouri lately, and it is fair to presume that the majority of these farmers are members of the party of the majority of their old states. Perhaps no one not connected intimately with the farmers have appreciated just how many of these new-comers have located in Missouri lately, but they will have to be reckoned with hereafter in all political matters.

Every subscriber is urged to read the announcement in this issue, in regard to subscriptions. Now is the time when a great many subscriptions expire, and we trust that everyone will renew promptly. Don't neglect the matter: Do it now. Look at the date on your wrapper, and send in your renewal at once. Start the new year free from debt to The Fruit-Grower. The sum due from each one is small, but it is quite a sum when lumped together, and therefore it amounts to considerable to us. We feel that we are entitled to this treatment from every subscriber: To have them either renew their subscription promptly, or send us instructions to discontinue their subscription. Of course, if anyone wants to wait awhile and renew later, we will gladly continue their subscription, but everyone who desires this should write us to this effect. Will you, as a member of The Fruit-Grower Family, not attend to this matter at once? Help the office force of The Fruit-Grower to enjoy the holiday season, and also help us to finish the work on those splendid issues for the coming months. Send your renewal and your new subscriptions as a Christmas gift. We count on the reply of everyone whose subscription has expired.

A gentleman who has observed the San Jose scale for some time recently said that it had been his experience that this insect does not spread rapidly from one orchard to another; not nearly so rapidly as has been claimed. This gentleman further gave it as his opinion that the chief source of infestation was nursery stock. This should not continue. San Jose scale is too serious a pest to trifle with, and whenever it is discovered in a nursery, perhaps the best thing to do is to abandon the location and plant nursery stock somewhere else. In an orchard of old, bearing trees, one is justified in trying to save them; but among young nursery stock it would seem to be best to destroy the entire lot. A nurseryman who, for the sake of the money that is in the stock, will knowingly send out San Jose scale to tree-planters ought to be sentenced to a term of imprisonment. Better care of nursery stock is needed. This will necessitate better prices for the stock, perhaps, but the planters will be willing to pay the increase.

Dairy farmers everywhere are aroused over the reported attacks which the manufacturers of oleomargarine will make upon the laws affecting this product at the next session of Congress. The manufacturers of oleomargarine claim that the law does not protect pure butter in any way; that the buttermakers are wrong in opposing the proposed changes in the law. But the buttermakers simply consider that it is sufficient evidence that the manufacturers are trying to have the law charged to justify their own opposition. It is hard to fool the up-to-date farmers in these days. They know what is to their interest—and they are prepared to stand for their rights.

There was much truth in what Mr. Taylor said in the Novenber issue of The Fruit-Grower, to the effect that too many of the speakers at horticultural meetings tell of what they are going to do, and of the plans they will carry into effect. There is too much of this, as compared with the reports of actual experience which are submitted. The past season has certainly been one which should have been rich in experience, and this will make unnecessary any speculation about the future.

I inclose $1, for which extend my time three years. I can't get along without The Fruit-Grower.—R. L. Madison, Big Cabin, Ind. Ter.

If your subscription has expired, renew today. The January number alone will be worth the price of a year's subscription.

Of several fruit and farm papers which I take, The Fruit-Grower is the best, and I will send a club of new subscribers later.—C. R. Boyd, Medford, Ore.

The State of Missouri.

"We won't say 'poor old Missouri' any more. * * * 'Rah for Roosevelt and Folk, and The Fruit-Grower.''

The above is a part of a letter received by The Fruit-Grower from our friend, J. H. Hale of Connecticut. The letter was written the day after the election. We want to use the quotation, 'poor old Missouri" as a text for our Notes this month.

Why should Brother Hale, or anyone else, ever have said "poor old Missouri." In what respect is the state "poor" or to be pitied? Those who have referred to Missouri in this way have shown a lack of appreciation of one of the very best states in the Union, but of course we are gratified to learn that, even at this late date, they have come to a realization of the true position of the state.

Missouri is not "poor." She has never been in need of any forced sympathy, and today the great state occupies one of the foremost places among the American commonwealths. With wonderful resources naturally, and with a history of which every son of the state may be proud, Missouri is all right in every respect.

And now we predict that the state will enter upon one of the greatest periods of development in her history. Brother Hale's kindly letter but indicates a feeling which has existed among a great many people in various parts of the country: That Missouri was hopelessly one-sided politically, and that there was a prejudice against persons of other political faiths. Of course, those of us who have lived in Missouri, and have mingled with her good people of all political parties, know this is untrue, for the people of the state are extremely hospitable and have welcomed all good citizens of every political and religious faith. But, still, this feeling has existed, and nothing but a change of political sentiment would remove this false impression.

That is the reason, we believe, why Friend Hale and others have changed their opinion of Missouri. Not that the state is changed—for it is the same great state it always was—but simply the opinions of these good people concerning the state have changed.

And, really, the late election has done much to advertise Missouri. In too many states the people are partisans in their politics, and follow the leaders of their party blindly into whatever paths they are led. A bad man on the ticket of their party receives the party vote, regardless of the character of the candidate. Look at some of the Eastern states, for instance, and see how true this is. But Missouri has taken a high position in this regard. It is a hopeful sign in American politics when the people of any state are able to select candidates of various political parties and put them in office at the same election.

Massachusetts was carried by the Republican national ticket by about 100,000 plurality. And at the same time the Democratic candidate for governor received about the same plurality. Minnesota, a strong Republican state, cast its vote for the national candidate of this party, but at the same time elected Mr. Johnson as governor, because the people of the state thought he was a better man for the office.

And old Missouri has taken a place among the states where the voters have shown themselves independent, and where they will vote for what they believe is for the best interests of the state. Of course, The Fruit-Grower is not a political paper, and does not deal with political problems. It is not prepared to say who is right on any of these matters. But this much we do say: It is a sign of progress when the voters shown an independent spirit. This condition will make both political parties very careful in the selection of their candidates, and the result is bound to be helpful. And it's fine advertising for Missouri, to be able to set at rest the criticisms which have been directed against the state.

With the advertising which Missouri will receive from this source; with the wonderful showing which the state has made in every department at the World's Fair; with the new blood which has been added by the immigration of good farmers from Illinois, Iowa and other states—with all this to direct attention towards Missouri, we believe the state will be "born again."

And it is a wonderful state, peopled with as good people as ever lived. Its resources are boundless, and are just beginning to be developed. There is room for lots more good citizens in Missouri, and nowhere will they find a warmer welcome. The Fruit-Grower is a national paper, and perhaps we ought not to pay too much attention to Missouri. But we feel, as loyal Missourians, that we ought to say this much in reply to some of the objections which have been made to "poor old Missouri."

Missouri is not "poor." It is an empire within itself, and the people are sovereign. The state is just now coming into possession of her own. Great is Missouri, great are her resources and her possibilities, and great are her people. J. M. I.

The Family Circle

The January issue of The Fruit-Grower will be our regular "Anniversary Number"—The Fruit-Grower will be eight years old on January 1. Seems like more than eight years ago when we issued the first number of The Fruit-Grower, but it was on January 15, 1897, that it first appeared. Lots of the members of The Family can remember the first number, and can tell just how the title page looked. We can remember that title page as long as we live. Let us tell you, confidentially, that when we issued the first number of The Fruit-Grower we wanted an engraved title page, and at the same time we had no money to pay for a good drawing. So what did some of the members of the company do but try to draw one themselves! None of them had any experience along that line, and the result was a very crude drawing, as was natural, but we were very proud of that title page, just the same.

Now, next month we are going to have a good title page, drawn especially for the anniversary number. Not only will the title page be a good one, but the contents, too, will be out of the ordinary. The January number will be a big one. Last January we printed 52 pages, and this year we expect to do fully as well, and will likely have a greater number of pages.

The special features of this number will be reports of the various horticultural society meetings—Illinois, Missouri, Kansas, etc. Very interesting and helpful papers will be discussed at these meetings, and to those who cannot attend all of them the next best thing will be to read the complete reports which will be published in The Fruit-Grower.

Another feature of the January number will be the opening announcements by the nurserymen and seedsmen of the new things they will have to offer for the first time next spring. This feature of our anniversary number is always an interesting one, and this year it will be fully up to the standard of previous years.

The article by Mr. D. Ward King, in the September number, on "Road Dragging," was so much appreciated that we have arranged with Mr. King to supply us with a special article for the January number, telling more about this work, and especially the need of work being done during the winter and early spring months. This will be illustrated with special photographs.

In the November issue reference was made to the catalpa plantation of Messrs. Yaggy, near Hutchinson, Kan. This article attracted much attention in all parts of the country, so that next month we will have some more information concerning this plantation, illustrated with special photographs.

Fruit and poultry go so well together that we have arranged with Mr. T. E. Orr, secretary of the American Poultry Association, for a series of articles on growing fruit and raising poultry on the same ground. Mr. Orr is an experienced poultryman, and as he handles his fowls among fruit trees and plants his articles will be much appreciated.

The regular departments will be maintained, and will be strengthened a little on account of the season. The questions department will be larger than usual, and altogether the January number will be a good one. It will be worth the price of a year's subscription—we guarantee that.

Now, let us tell you what we want the members of The Family to do: We want them to renew their subscriptions at once, and to send as many new subscribers as they can.

In telling what the January number will contain we have shown that every member of The Family is justified in making an effort to pay up his subscription and also to get as many new subscriptions as possible. And there is another reason why you should do this:

The Fruit-Grower needs the money.

Have you any idea what it costs to issue a big number of The Fruit-Grower, like we will have next month? If you have, you will appreciate our position—and you will hustle to send as much subscription money as possible.

It costs lots of money to publish The Fruit-Grower. In the first place, we use a more expensive quality of paper than most farm papers. Compare a copy of The Fruit-Grower with other farm papers, and you will find that not one uses a better quality of paper, and few use as good quality. Good paper is necessary to make our illustrations print up well, and we have spared no expense.

And think of the quantity of paper it takes to print one issue! Say we have 60 pages in January—and we may have that many—it will require about twelve tons of white paper to print the edition. Then when you consider the extra price we pay for this better quality of paper, it will be seen that the expense for paper alone is very great.

Think what the postage will be on twelve tons of mail matter. And each paper is wrapped separately, requiring more work, but insuring its reaching the subscribers in better condition.

See how expensive it is to print this large edition? And all without any expense to our readers. All we ask is that they renew their subscriptions promptly and add as many new members to The Family as possible. Lots of our readers tell us The Fruit-Grower's subscription rate is too low; that it is worth $1 a year. Well, maybe it is—but we have not increased the price.

But under the circumstances do you not think we are justified in asking our readers—the members of The Family—to help us by an extra effort at this time? No one is asked to do much, but if everyone does his part the results will be most gratifying. Will you help us to this extent? Look at the address on your wrapper, and if your subscription has expired, renew today. Send new subscribers if you can, but at least renew your own. Remember you can send four new names and your own renewal, all for $1. You have been promising yourself you would attend to this matter; that you would renew and get up a club. Now, will you do it, and start the new subscriptions with the anniversary number next month? Much depends on your work just now.

Listen to what two of our faithful friends say, and then follow their example:

R. T. Chew, Ottumwa, Iowa, writes: "Having been a subscriber of The Fruit-Grower or five years, I am not ashamed to recommend it to my neighbors. The four names sent with my own are all large fruit-growers and know a good thing when they see it, but only one of the four had ever seen a copy of The Fruit-Grower, and I guaranteed the first copy to be worth more than the year's subscription."

Another letter is from one of our best workers, Mr. Wallace Berryhill, Bellbrook, Ohio, who writes "I herewith inclose you list of eleven names for The Fruit-Grower. This list, with those I have sent heretofore, runs my club up to about 130. This, I think, is about all I can do for you in this vicinity, so far as new subscribers are concerned, as nearly every farmer in the township has been solicited. No trouble to get subscribers when we go at it right, for The Fruit-Grower talks for itself. To people who are interested in such topics as are discussed in the paper, it is worth ten times the price."

Now, just one other word, at the close of the year: Send for some sample copies and try to get up a club. You may not get 130 members, but you can get five, at least. Don't look for farmers who grow fruit exclusively. Get those who have a home orchard and a berry patch. They will get help enough to justify their subscribing—the addition of one bushel of apples or one crate of berries to their crop will more than pay the bill. We will send whatever copies are needed, and would like to hear from every member of The Fruit-Grower Family with a club of nw subscribers, with their own renewals.

Now, friends, can we depend on you? We believe The Fruit-Grower is entitled to your help. Now is the time to give it. BRO. JONATHAN.

TEXAS TREES.

A million of them growing on new prairie land. A hundred best varieties of plums, over a hundred of peaches. Fortunes in some new Texas varieties. Big stock of Arp Beauty. I introduced the Chilow and Weaver peaches, and the Wooten, Gonzales, Red October, Happiness and Welcome plums. A tree taken from the South to the North becomes totally dormant, stands any winter, bears younger and fuller. Please write for new catalog. Ex. paid. Agts. wanted. F. T. RAMSEY, Austin Nursery, Austin, Texas.

Kansas City Nurseries

A general line of Nursery Stock, WHOLESALE and RETAIL. GRAPE VINES, a heavy stock of Concord and Moore's Early, one and two-year, Worden Niagara, etc., one-year. Small fruits, Rhubarb, Asparagus, Ornamental Shrubs, Cal. Privet, etc.

We publish the best and cheapest 80-page Co-operative illustrated descriptive Catalogue in the market of which we have just issued a new edition.

This is the great Railroad center of the West, and we can ship direct to almost any point without transfers.

Blair & Kaufman

Office 233-34 Rialto Bldg. Kansas City, Mo.

LOGANBERRIES

Let every fruit-grower plant some Loganberries. They are proving more productive and profitable than Blackberries and ripen at a season before summer drouths. **Strong, well-rooted plants, $1.00 per dozen, postpaid.** Write for illustrated circular. Special prices in quantities.

J. B. Pilkington, Nurseryman

Portland, Oregon.

The Loganberry

(Blackberry-Raspberry)

Enormous bearer, fine fruit. Write for price list.

W. W. CLARK

R. F. D. No. 1. ATCHISON, KANSAS.

Iowa Grown Trees

Hardy, well-grown, true to name—just the kinds we have been planting for years—nursery established in 1878. We make specialty of Wragg Cherry, Stoddard Plum, Iowa Raspberry, Hartford Pear, and Evergreens of all kinds. Send for catalogue.

Central Nurseries, Waukee, Iowa

J. WRAGG & SONS CO., Props.

None Better Than the Best

Our field-grown Budded Roses are the best on earth, and our Fruit and Shade Trees, Evergreens and Hardy Shrubs, Vines and Small Fruits, etc., are unexcelled. Immense stock. Oldest nursery in Texas. Write for catalogue and prices.

Bon Ayr Rose Gardens, Mt. Selman, Tex.

The ROGERS

in the earliest of all Dewberries; bears heavy crops of large, firm fruit, that ships well and sells at fancy prices. It's flavor is unsurpassed.

THE ROGERS has passed the experimental stage. It has been sold in nearly every state in the Union, and is fast becoming the most popular Dewberry now in cultivation. My prices are reasonable and I guarantee all my plants to be genuine. Write for descriptive circular and prices. JAS. W. HAMLETT, Alvin, Texas.

P. J. BERCKMANS CO.
AUGUSTA GA
TREES AND PLANTS
FOR EVERYBODY
CATALOG FREE
FRUIT TREES

Iowa Horticultural Meeting.

The thirty-ninth annual meeting of the Iowa State Horticultural Society was held at Des Moines, Dec. 13 to 15, and was one of the best the Society has ever held. This was no doubt due to the fact that the Iowa fruit-growers generally had good fruit crops this season, and also to the fact that Iowa made a reputation as a fruit state through her horticultural exhibit at St. Louis, which must be "lived up to." The society met in the old rooms, which were originally fitted up for the organization, and the members were in most excellent spirits all around.

The meeting was called to order on Tuesday morning, when the reports of the president, secretary and treasurer were presented, and some routine business transacted. In the afternoon of that day the society met with the farmers' institute workers in the agricultural department, and that evening the meeting was a joint one with the Park and Forestry Association, so that the real work of the society was taken up in earnest Wednesday morning. The reports of the directors fro mthe various congressional districts were very hopeful, indeed. Mr. C. E. Blodgett, from the First district, reported that peaches had been killed in December by a rain, followed by sleet; small fruit crop generally was good, although prices were rather low. Trees, plants, etc., have made a fine growth, have ripened up well, and prospects for next season are very flattering at this time.

William Langham of Cedar Rapids said the fruit crop varied, but apples were especially good crop; vineyards gave a fine crop, for the first time since the cold winter of 1898-99. The peaches were just enough not to forfeit their homestead rights, but other crops were good. A number of new seedling apples are being tested. Spraying is coming into more general use and would become more general if it were not for the number of poor machines now on the market. Prospects for next year's crop are good, everything having gone into winter in good shape.

Being asked to name a good sprayer, Mr. Langham said he used the Morrill & Morley pump, and finds it satisfactory. One member suggested that success with spraying was more in the man than in the machine. Still another member suggested that one fault is that manufacturers do not test the sprayers before they are sent out; every machine should be tested, to see that all joints are tight and that everything works smoothly.

Mr. Tatum asked about the dust process; he has tried it and has had good results . Used a small hand machine, for it was used on a small scale. Asked to name some of the good machines, he recommended that the members read the advertisements in The Fruit-Grower.

W. O. Willard, Grinnell, reported that cherry and other tender fruits were hurt by a sleet storm, but other fruits were good crop, especially apples; prices not satisfactory. Native plums bore well, but Japan varieties are not safe so far north. Grapes were largest crop for many years, and gooseberries and currants were plentiful. Among red raspberries the Iowa succeeds best on black soil.

M. J. Graham, Adel, reported that fruit crop was heavy. Cherries were heavy crop, bringing low prices generally, principally on account of poor system of marketing. Mr. Graham had received good prices for his crop, but some of his neighbors who had not investigated the markets did not fare so well. Burbank, Abundance and Red June plums were as abundant as the natives, selling at $2 per bushel, while the natives sold for $1. Peach crop varied; pears good crop. Season has been ideal, and prospects for next year are very good, so far as one can judge by the growth and condition of trees and plants.

The subject of Japan plums brought forth an interesting discussion. Mr. Ferris of Hampton said they must not be planted too far north. He planted Abundance and Burbank; the former died, while Burbank has grown and borne well, and he likes it very much. Several other members paid tribute to the Japan varieties, and Mr. Blodgett said he believed Burbank and Abundance should be more generally grown. Mr. Monroe of Jones county said his location was about the center of the state, and his experience with Japan plums has not been satisfactory. Another member reported that his planting had all gone out in a test winter. Mr. Patten of Charles City said he had experimented with Japan plums, trying to get them established for the purpose of cross-fertilization, but he cannot recommend the varieties for the northern puart of the state. He believes attention should be turned to the improvement of the natives, rather than to waste time with the Japans.

J. S. Trigg said he believed the Rock Island road, running from Davenport to Council Bluffs, marked about the northern limit of the Japan plums in Iowa, as a general thing. Mr. Ferris dissented from this, for he lives farther north than this, and his experience leads him to believe that the Burbank is safe to try farther north than Mr. Trigg's boundary line.

Silas Wilson, Atlantic, reported concerning fruit conditions the past season in that section. Apple crop varied; many trees failed to bloom at all, this condition being due, he believes, to the wet season of 1903. Crop of native plums was good, Japs and European about 30 per cent. Had some splendid peaches in southwestern Iowa, and he believes that the Missouri River hills are admirably adapted to the growing of this fruit. He received some magnificent specimens for the World's Fair exhibit from this part of the state, and would have received a great many more had there not been a misunderstanding at about that time.

The discussion of peach growing in Iowa brought forth some interesting facts. A number of members are experimenting with seedlings. One member said that several years ago he had planted a lot of pits in a nursery row, intending to sell the trees to a neighbor. The latter did not take them, for the winter after they were a year old they were killed to the ground. They came up from the roots, however, and were allowed to stand. There were about half an acre of them, and in 1903 the speaker sold over $100 worth of fruit from the trees, besides what was used at home. The past season the crop was about as large, but prices were lower.

J. P. Jackson, Glenwood, presented some figures from a peach orchard in that section. The trees are 22 years old, and the owner has made more money from his five acres of peaches than from the remainder of his farm of 160 acres. He has both budded and seedling trees, the latter being more sure; has had ten crops of seedlings in eighteen years, and three crops of budded fruit in same time.

C. H. True, Edgewood, reported that leaf spot of cherry trees has been a serious pest in that part of the state; some nurserymen even lost trees in the nursery row. Rust on apple leaves has also been bad, particularly on trees grown near red cedar trees. Oyster shell bark louse is also quite common, and Mr. True believes it is really more threatening to Iowa orchards than San Jose scale, the latter never having found lodgment in the state. He had sprayed for the louse with lime-salt-sulphur, but wind was strong, and only one side of trees was sprayed. The insects were held in check, for most part, where the mixture reached them. Latter part of May he had used kerosene emulsion, but believes this was rather too early, as the greater portion of the brood had not appeared at that time; a little later would have been better.

The members discussed rust on apple trees as connected with rust on red cedar. Messrs. Patten and Gardner believed there is no connection between them, while other members thought differently, and they are cutting down their red cedar trees.

G. A. Ivins, Iowa Falls, reported that fruit crop generally was good and sold well; prospects are very good for next season. Cherry trees have been greatly injured by leaf spot. Plum aphis was quite plentiful last spring; best remedy seems to be to cut off the infested twigs and burn them. Strawberry crop was the best for years; prices good, none selling for less than 10 cents quart.

L. A. Clemons, Storm Lake, reported the fruit crop as uneven; prices for apples were low.

J. S. Trigg, Rockford, reported the fruit crop as one of the best for many years. There is more interest in fruit culture in his district than ever be-

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NEW HAVEN, MISSOURI

The Fruit-Grower, St. Joseph, Mo.: You will find enclosed remittance for Block of Five new subscribers. I can not do without The Fruit-Grower, and everyone who is interested in fruit growing should read it. Every number seems to be better than the preceding one. I don't see how you can furnish it at the price, but will recommend it at every opportunity. Yours truly, Lee Van Arsdale, Bethel, Ky.

It is probably not known to many of our readers that the price at which we are selling The Fruit-Grower to trial subscribers will hardly pay the cost of **white paper alone** used in twelve issues. To a great extent, in the present day of low subscription prices, most publications must depend on their advertising columns for the bulk of revenue. So we hope all our friends will send in as many "Five for $1.00" clubs as possible, for we want to finish the season of 1905 with 50,000 names on our subscription list. If we can do this, the increased revenue from advertising will make up the loss on the new subscriptions. It has always been the aim of the publishers of The Fruit-Grower to build in this paper an institution in the cause of horticulture, which will be second to none in this country, regardless of expense, believing that should we be successful, the profits would be forthcoming later. To a great extent our readers are partners in this enterprise, and many of them have sent in from five to a hundred names during the past several years. How many will send in a "block of five" by April 1st? If you desire extra sample copies, let us know how many, and they will be mailed at once. Will you co-operate with us?

The FRUIT-GROWER CO., St. Joseph, Missouri

Wooden Veneer Tree Protectors

will protect your trees from rabbits, mice and borers; will also protect the trunks from sunscald. Can be left on throughout the year, and will last for years. A cheap, effective protection. The accompanying cut shows the protector as applied to a tree. This is the protection recommended by most of the horticultural societies, and millions of them are in use. We are headquarters for them. Write for prices.

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HAVE A SURPLUS OF
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AMERICAN PLUM TREES
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Thurlow Willow, 5 to 6 ft. and 6 to 8 ft.
Russian Mulberry, 4 to 5 ft., and 5 to 6 ft.
All styles of Root Grafts made to order.
WILL MAKE LOW PRICES
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Ready for mailing about January 1st, is **FREE.** We want **you** to have a copy. **A postal card written now** will insure prompt mailing. The book contains some valuable things.
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1905 WICHITA, KANSAS. 1905

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Seventy-five Thousand Apple 1 and 2-year-old, budded and grafted. Also Peach, Pear, Plum, Cherry, Raspberry, Blackberry, Currant, Gooseberries, Strawberries, etc. Write for prices, or mail me a list of your wants, and will tell you exactly what your list will cost at your nearest station. If you want 10 trees, write me; if 1,000, write me. I sell direct to planters. Stock guaranteed. Certificate with every shipment.
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GRAPE VINES
OUR STOCK of Vines and Plants are strong, healthy, well rooted and in excellent condition for spring delivery.
Moore's Early, Concord, Worden, Niagara, Moore's Diamond and Campbell's Early, 1 and 2-years.
Currants—Red Cross, North Star, Red Dutch, Cherry and Fay's.
Blackberries—Early Harvest, Snyder, Kenoyer.
Raspberries—Cumberland, Munger, Kansas, Gregg, Cardinal, Miller Red, and Thwack.
Strawberries—45 Varieties.
Don't fail to send a postal for our new spring Cat. Ready Jan 1. We can supply your wants at prices that are right.
ELMHURST NURSERY
M. E. CHANDLER, Argentine, Kan.

WANTED
The undersigned wishes to superintend a large peach industry in a section of Georgia, where fruit of best quality can be raised and put on market two to three weekks earlier than in the Fort Valley District. Write me at once and get full particulars.
James M. Rogers, Macon, Ga.

fore, and more planting and better care given to trees and plants. The borer is the greatest enemy of apple trees. Mr. Trigg said he believed that ten acres of land planted to Wealthy apples and others of that type will prove profitable in Northern Iowa; in fact, that part of the state is now producing great quantities of apples commercially. Northwestern Greening is a good variety for winter; will keep until April or May in ordinary cellar. It is a good, hardy tree, but slow in coming into bearing; will not bear for ten years; fruit is not of the highest quality, but it is good, and a most excellent apple for Northern Iowa . The Wealthy is a good storage apple, good enough for anybody. Mr. Trigg said that prices for apples had not been satisfactory, but the suggestion was made that perhaps this was due to the fact that until this year the growers have not had enough apples to sell, and therefore have not prepared to handle the crop. Mr. Patten reported that he has sold Duchess at $2.35 per barrel and Wealthy at $1.50. The statement had gone forth that he had lost 2,000 bushels of fruit because of no buyers, but he said this was a mistake; that he had perhaps lost as many as 200 bushels, but his crop, on the whole, had been satisfactory. Mr. Ferris reported that he and his brother had marketed their own crops and those of their neighbors to advantage . One member said he had kept Wealthy apples until March; kept them out of doors until freezing weather, and then placed them in an ordinary cellar.

All through the reports of the directors from the various congressional districts a hopeful tone prevailed; every member reported that conditions for next season's crop are most excellent, with everything in fine shape for winter.

W. T. Richey, Albia, read a paper on "Gooseberries." This crop has been profitable with him. He prefers a cool soil, plants in rows six feet apart, with plants four feet apart in row, using two-year-old plants. Prune off half of each season's growth. A plantation will last about ten years, and then should be renewed.

One member asked about mildew; what should be done to combat it. Mr. Harrington recommended spraying with Bordeaux mixture.

Mr. Richey grows Downing and Smith's Improved; these varieties do not mildew when pruned severely. Mr. Moyle of Wisconsin suggested that where Downing and Houghton will grow, the English varieties might be tried. Chautauqua is a good one, as is Lancashire Lad; Industry has been largely sent out, but his experience with it has not been satisfactory; bush is tender and the variety is very subject to mildew.

Mr. Richey said Lancashire Lad will not stand in Monroe County. The Pearl was recommended as another good variety, and also Champion, the latter being prolific and free from disease.

C. G. Blodgett, Mt. Pleasant, gave his experience growing seedling strawberries. He planted 300 in spring of 1903, kept runners off and they fruited last spring. Many of them were very good, and twenty-five have been marked for further trial. Results will be reported later.

J. P. Anderson, Lamoni, read a paper on strawberry growing. Mr. Anderson plants in rows four feet apart, with plants eighteen to twenty-four inches in row; this is for field culture. He believes in planting a new bed every spring, for the most profitable crop will come from the first year's yield; the second crop is seldom as satisfactory. Mr. Anderson's list of varieties is a good one, on his soil, which is a prairie loam. Concerning varieties, he said:

"The Senator Dunlap is by far the best berry with which I have had to do. If given my choice between the Dunlap and all other varieties I have tried I should choose the Dunlap. It is large, firm, of good color and fine flavor and very productive. A row 285 feet long the past season yielded about 300 quarts of finest fruit, or at the rate of about 12,000 quarts to the acre. This was nearly twice the yield of the next most profitable variety, and about two and one-half times the average of the whole bed. The August Luther is the best early berry. Medium size, quite productive, and of fine flavor. The Aroma is one of the best late varieties. In the season of 1903 I had Aroma and Gandy growing in rows side by side. The Aroma was of about the same size as the Gandy, of longer season, a smoother berry, and produced about four times as much. The Brandywine is another late variety that has done well for me. The Sample is a very large fine berry that is fairly productive. The Bismarck is a good variety, as is also the Warfield, but the latter is excelled in every respect by the Dunlap, the two being of the same type.

"I am ready to abandon the following varieties, for the reasons stated: The Bederwood gives a few large and many small berries; it is too soft and rots badly. The Clyde is very large and an enormous cropper; the stems are not strong enough to hold the berries from the ground, and being a soft berry it rots badly; the color is too light also. The Jessie is a large berry of excellent quality, but is not productive enough. The same may be said of the W. J. Bryan, although the latter variety is not quite so large. The Kansas is of fine color, but is rather sour and the fruit lies on the ground. Excelsior is too sour. Nick Ohmer, Rough Rider and Sharpless have almost been failures with me. Cohden Queen has been rather indifferent. Tennessee Prolific, Lovett, Buhach and Glen Mary have done quite well, but are not equal to the varieties first mentioned in this paper."

A member asked about sowing oats between the rows in late summer, to serve as a mulch during winter; he had tried it this season, sowing the seed the 10th of September, but this was too late.

A. Branson said oats will not do; the straw will fall and mulch the center, but will not cover the row. Still another member said, "Don't."

In a paper on "Improvement of Our Native Plums by Crossing and Selection," Charles F. Gardner gave directions for the work. Plant varieties so the branches will interlace, which will secure cross-fertilization; select the best plums, then plant seeds from these. Mr. Gardner said that in this work one will often get varieties which will not be perfectly hardy, but cut them off and let them grow up a new top, and the second growth will be more hardy. This is true of other fruits, apple particularly.

Another member reported that his Miner plum trees were broken off; they sent up a new growth, which now bears plums two weeks earlier than other Miner trees. Mr. Patten reported that he had had other trees which were not hardy, and tops killed back; the tree put forth a new growth, it was moved to a new and more exposed location, and it has proven hardy. The killing back and the putting forth of a new growth will make the trees more hardy.

Being asked when the trees should be cut back, Mr. Gardner said in spring.

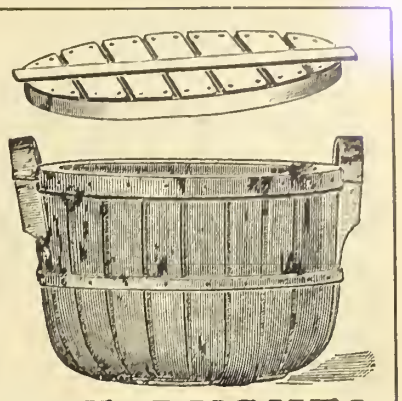
Someone suggested just here that the fruit-growers should not pay so much attention to new fruits, but work with the older sorts. But Mr. Phillips, delegate from Wisconsin, and who was formerly secretary of the Wisconsin State Horticultural Society, dissented. He told of the great work which is being done in Minnesota and by some of the growers in Iowa .

"Our society has planted a test orchard," said Mr. Phillips, "in which we have planted a number of varieties which were recommended by the best growers. Of a list of eighteen varieties of apples, there are only four which were known as far back as 1873, showing that the sorts which are recommended in our state are all of comparatively recent introduction. We do not want to shut out the newer sorts, but should keep on the lookout for better things than we have."

"Peonies," was the title of a good paper which was sent by H. A. Terry of Crescent. Mr. Terry recommended this flower for everybody. One of the most popular sorts is Festiva Maxima, white with crimson center; another good one is Grover Cleveland, dark crimson with lighter center, the blossome of which keep a long time after cutting. Peonies should have deep, rich soil and should not be allowed to be overrun with weeds. Mr. Terry believes they should be taken up after about five years and divided, else the blooms will run down in size; divide in October, and set plants with about five inches of soil above them.

Secretary Greene was asked about

(Continued on page 14).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The San Jose Scale Problem in the Eastern States.

Treatment Recommended by the Economic Zoologist of Pennsylvania.

During the past two years we have had oportunity to see the San Jose scale in almost every county of the State of Pennslyvania and to learn what measures have proven successful in suppressing it. We know that there is a widespread belief that it is impossible to win in the fight against it. This is true if persons do not intend to be in earnest and thorough in their applications of insecticides. We have already published elsewhere a record of remarkable success attained by Governor Pennypacker with one spraying of young fruit trees about three or four years old with only kerosene, whale oil soap and water mixture in the month of July. Many persons in Montgomery county will testify to their having seen these trees almost completely rid of San Jose scale by this application. It could never have been done, however, excepting by the most careful thoroughness of application and this mixture has never been recommended by us, excepting as a means of holding the pest in check until the leaves fall.

As soon as the foliage is off of the trees is the time to apply such remedies as will prove most effective. The insects will continue to feed upon the trees until sometime in December, and consequently the sooner the proper remedies are applied the better will be the effect in saving the vitality of the trees. While the leaves were on the branches it was impossible to apply remedies thoroughly for the reason that many branches were protected by foliage in such a way that the material could not cover them. If a single spot as large as one's finger nail be left unsprayed or untreated, it will be the place where thousands of scales may safely continue their lives, and from which their progeny will spread over the tree next year. The one great objection to fall spraying is that the material does not stay on the trees until next summer when the young insects are active. The best possible method is to make one application this fall, and as soon as it is made go over the trees again to cover the spots that were missed, and next spring just before the buds burst repeat the operation.

As to the best insecticide to use, there is but one thing to say. We are still of the opinion expressed by us last January 1, that the lime-salt-sulphur mixture is the most effective remedy. It is better than the caustic soda mixture.

Another year's work in the orchards of this state has proven the truth of the above and letters from such practical and expert fruit-growers as Dr. Funk, who has been spraying with the lime-sulphur-salt wash for three years, express the same opinion. We recently received a letter from Dr. Funk, in which he wrote as follows:

"Where the soda and water alone were used, the results have not been at all satisfactory. Where the unboiled lime-surphur-salt wash was used, only a few scales have been killed. Where the lime-sulphur-soda wash was used the results have been good, but, as a rule, not entirely satisfactory. Where the lime-sulphur-salt wash, properly made and boiled, was applied in a thorough manner, the results have been all that can be desired."

The formula for making this wash varies more or less, but we find the following to be reliable:

Salt, 15 pounds.

Sulphur (ground or powdered), 20 pounds.

Lime, (fresh or unslaked), 30 pounds.

Water 60 gallons.

In brief, these ingredients are to be boiled together in enough water to keep them boiling for at least three-quarters of an hour, and then enough water added to make the mixture equal to sixty gallons. The methods of preparing this are given in such excellent detail in the report of Prof. Fletcher, the Canadian Entomologist, that we here quote from his correspondent, Mr. G. E. Fisher:

"There are a great many ways of preparing lime and sulphur wash for spraying, and nearly every one who does it prefers his own way. When large orchards are to be treated it is not practicable to cook the material to be used, by boiling it in kettles over the fire. In my practice I have found that, with the aid of steam from an ordinary threshing engine, this most effective spraying material could be supplied in large quantities perfectly cooked and at a cost of from one cent to one and one-half cents per gallon. A 12-horse power boiler will not furnish steam enough to cook twelve barrels at once, without extra heavy firing, and, with ordinary firing, such a boiler will not properly run more than eight or nine barrels which will cook probably about 1,200 gallons of spraying material in ten hours. The greatest drain upon the steam is in starting, when the water is all cold, and, to expedite matters and get some of the barrels under weight, I found it considerable advantage in starting about one-third of them. We fill four barrels one-quarter full and then turn on the steam. With steam at from 80 to 100 pounds pressure, these will be boiling in five minutes, when the steam is turned off of these and on to the four more barrels, and all the time and sulphur are put into the first four as quickly as possible without making them boil over. It is best to turn off the steam while the lime is being slaked as it lessens the danger of making the mixture boil over. When the lime is all slaked the steam is turned on again and the mixture is left boiling until cooked. When the second four barrels are boiling, the steam is turned on to the third lot, as with the first two, always returning the steam to the barrels as soon as the lime is all slaked. Managing in this way, we always had some material ready for use. That which was prepared late in the evening will still be warm enough in the morning, even in cold weather. In order to make up for the loss of liquid from boiling and to gradually fill the barrels to the proper depth, a small stream of cold water was kept dribbling into them at a rate which allowed the barrels to fill in the course of the two or three hours' cooking necessary to reduce the sulphur. In this way the mixture was kept boiling all the time and the necessary amount of liquid was added. For boiling the mixture in the barrels, we have a quarter-inch pipe, which reaches down to within four inches of the bottom of each barrel, and each pipe is provided with a stop-cock.

"When using a kettle, if I have only one, it is filled about one-third full and brought to a boil. The lime and sulphur are then added, and an old tin pail with a small hole in the bottom is hung over the kettle, and cold water dribbling from it into the kettle replaces the water which evaporates with boiling and increases the quantity. When kettles are used, if there are two, one may be used for heating water, for, while the mixture is cooking, cold water should not be added in sufficient quantity to check the boiling. I have generally slaked the lime in the barrels or ketties, as it was required, but on some occassions we slaked it in another barrel by throwing boiling water over it and with just as good results. We certainly got our best results where each gallon of the wash contained one pound of the lime and half a pound of sulphur which we cooked from 2 to 3 hours. It is true Dr. Forbes got his wonderful results from a less quantity cooked 1¼ hours. Mr. Pease, the California scale inspector, says it must be cooked at least three hours, and that more cooking is better. He believes that this wash is of little use unless sufficiently cooked. We had good results and, perhaps, should be satisfied, but I think we have good reasons for using the larger quantity of material and cooking a long time. In Michigan, again, they used less material even than Dr. Forbes. A very common proportion in the United States is 40 pounds of lime, 20 pounds of sulphur, 15 pounds of salt in 50 imperial gallons of water.

"Dr. S. A. Forbes, who has been very successful in fighting the San Jose scale, uses the Oregon wash and is quite satisfied with it. Writing at the end of the season of 1903, he says: 'I am still using the ordinary Oregon wash of 15 pounds of lime, 15 pounds of sulphur and 1½ pounds of blue vitriol, dissolving the lime and sulphur by boiling about an hour and then adding the blue vitriol, which has been dissolved in hot water, and boiling for 15 or 20 minutes longer.'"

If the lime be perfectly pure, good and fresh, according to theory and science of chemistry, it would combine with equal parts of sulphur, and, consequently, no more of the former should be used than of the latter, but

ATTENTION, FRUIT GROWERS

How to Rid Your Orchard of San Jose Scale

The result of a half million dollars in experimental work.

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LIME, SULPHUR AND SALT.

Write for booklet. Valuable information on Orchard Spraying

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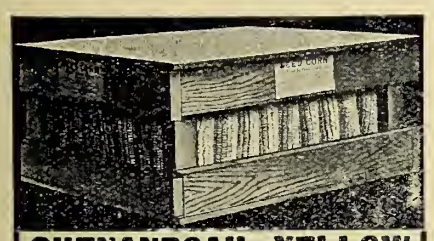

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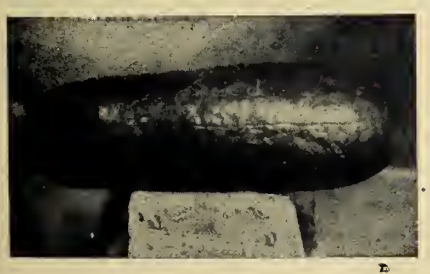

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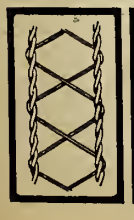

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an excess of lime should be used in order to make sure there is enough to unite with all the sulphur. Twice as much sulphur as lime, however, is not necessary. We insist that the boiling ought not to be less than forty-five minutes but would add that the salt is not necessary, excepting to raise the temperature of the boiling point of the liquid, and, consequently, bring about a better union of sulphur and lime, and also make the mixture stick better to the trees. It is not necessary to stir all the time, and it is also unnecessary to apply it while boiling hot. Recent experiments have shown that this mixture may be permitted to stand, especially if covered tightly, and diluted and used at any time in the future. If long, yellow sulphur crystals form, dissolve them in hot water, and pour this solution back into the mixture. When ready to apply it, dilute with warm water to the required amount and apply it upon the trees while warm. The heat does not kill the insects, but causes the liquid to flow better through the nozzle in this condition, and therefore makes a better spray.

The lime-sulphur-soda wash made without boiling can be prepared in a vessel, such as a barrel, with less time and trouble, but with slightly more expense. Upon the day of this writing we have been talking with Mr. Jacob Rife, of West Fairview, Cumberland County, Pa. We know that many of his trees died last year with the San Jose scale, and others were in a dying condition this spring. They were as badly infested as any orchard in the state. He atended the meeting of the State Horticultural Association in Lancaster expressly to see the lime-sulphur-soda mixture made, and went home and tried it in his orchard. His report to us is most highly gratifying, and we consequently give it in detail.

"I used 4½ pounds of caustic soda, such as is prepared and sold for making soap, 17 pounds of sulphur and 33 pounds of lime and 50 gallons of water. I put the unslaked, fresh quick lime into a barrel, and mixed the sulphur in hot water to a paste, and poured it over the lime, and then put in enough water to slake the lime well. This made it boil fearfully, but I kept the barrel covered with heavy carpet to keep in the heat, and at the same time making a much more intense heat than could have been obtained by ordinary boiling. As soon as this boiling from slaking the lime had ceased, I added the caustic soda, and it again boiled harder than ever. As soon as all the boiling had stopped, I added enough water to make the entire mixture equal to 50 gallons and then sprayed it on my trees, going over the trees from the same direction the second time, immediately, in order to cover the spots that were missed the first time; and then again when the wind changed, I went over them and sprayed from the opposite direction in order to be sure that the entire surface of every part of every tree would be properly covered. I applied six barrels of this mixture to two hundred trees in two thorough sprayings and two hasty re-sprayings. That is six barrels in all, but if the wind had not been blowing so that considerable material was wasted, it might have been possible to have done the same work with only four barrels.

"The results were so gratifying that I wish nothing better. Every person, who saw the miserable condition of my orchard last year, and saw the same orchard this year loaded with the finest fruit and scarcely a scale to be found anywhere, says that it is simply remarkable, almost marvelous. While it may be slightly more expensive than the lime-sulphur-salt wash, boiled, it is certainly less troublesome, and the slightly increased expense is not enough to be important. I sold a first-class crop of peaches from those trees this year and it appears that I shall not have to spray again for the scale inside of two years; yet it was such a tonic, cleaning up all kinds of diseases as well as insects that I shall repeat the spray with this mixture even though the San Jose scale does not develop in great numbers."

We wish to add that we saw Mr. Rife's peaches, and they were among the finest that were brought to the Harrisburg market. Of course, the fact should be pointed out that he was exceedingly thorough and careful in his application. This, however, is as everyone should be who intends to do anything for this pest. Similar reports have come to us from other persons as given in the following article:

Boyertown, Pa., Oct. 25, 1904.

Prof. H. A. Surface: Your letter is at hand asking for a statement of my belief for or against the lime-sulphur-salt wash for the San Jose scale. I will try to answer as concisely as possible.

First where the preparation is properly made and applied in a thorough manner it is infallible, as a remedy for the scale louse. As a fungicide, it has no equal. For peach leaf curl it is specific. These are broad assertions, but I do not say I believe them to be true, but that I know them to be true. This knowledge is acquired by several years of actual practical experience in the orchard.

In the fall of 1903 I had scores of trees, peach, apple, pear and plum that were not only slightly affected, but were completely encrusted. Red spots were no longer observable, but the entire inner bark was red, and the poison injected by the lice had penetrated and affected the cambium and even the wood to the depth of one-half inch. The entire crop of fruit was so badly encrusted as to render it unsalable. These trees I expected to lose, but thought them good subjects for experiment. I applied the lime-sulphur-salt wash thoroughly, completely covering every part, going over them from every direction, with the result—every tree so treated is not only alive, but the red has disappeared from the surface, the cambium is restored to perfect health and performs its function as nature requires. The foliage on these trees is the richest green of any in the orchard. New wood from six to eighteen inches has been added, and a heavy crop of the most perfect apples, smooth, clean and highly colored, rich in flavor, was borne by them this season, and not a living scale can be found on either the fruit or twig. Is this evidence of the effectiveness of the wash?

Others fail I will admit, but where such is the case, I will guarantee it is the fault of the man and not the wash, unless the wash was improperly prepared, when this again falls back on the man.

In regard to the formula, this is a serious and difficult part. Did you ever see an unskilled person capable of taking a cook book in which even the most minute details were recorded, and make a success of cooking? There are certain little things that can not be expressed or conveyed to the average mind in writing. Yet small as they are, they are so essential that their presence or absence means success or failure. Formulae in numbers have been given, all differing in the quantity of each ingredient. Yet when rightly prepared each one will do the business. Some are wasteful in material, which if a man has a large orchard means "dollars." But the rock upon which the majority perish is lack of knowledge in preparing this wash. Therein lies the secret. When you ask me just how I make and apply this mixture you do not think you are asking me anything very hard. In theory this is very simple, they all tell you, take so many pounds of lime, so much hot water, add so many pounds of sulphur, keep stirring and boiling for so long, then add so many pounds of salt, and boil so much longer. Surely they are all explicit enough. Why do they not all succeed? Why do some of the would-be scientists and leaders come out in articles and say the lime-salt wash is not efficient on the Eastern coast? Because they do not understand their business in preparing the wash. Last spring I applied this wash to some badly infested trees just before and during a shower until we were compelled to quit. Yet this application was thoroughly effective and cleaned the trees. Why? Because the wash was rightly prepared and it did its work. Now why is it not easy to tell how I do it? Because I have no schedule to follow in my own practice, and I fear my statements may be misleading to some who will always take the plan requiring the least work. No schedule of time can be set down. One man will manipulate and boil his ingredients two hours, and still not have his sulphur all dissolved. Another man will accomplish the same thing in less than one hour. The last will be effective, the former will not. Do you see how hard it is to give the fixed rule when we do not know the environments of the other fellow? We know nothing of the quality of his material, we know less of the man.

At the Paragon Fruit Farm we boil our ingredients from 45 minutes to one and onehalf hours. Yet if I were to give such indefinite directions as this, you would say that I did not know my business. Yet I assure you I have no set time, but get the best material possible, mix it in the most scientific manner and boil—(I mean actually boil) until the proper chemical change takes place. If this is accomplished in 45 minutes or less, I stop at once. I never stop boiling for one moment until this change has taken place, if I have to boil for three hours. The wash is not good unless you have the proper combination, and this can only be told by actual experience, carefully watching the various changes as they take place. Thus you see how difficult it is to give fixed rules. We see the truth of this by past experience. Have you not given the different formula again and again with plain direction for mixing? Yet how many have succeeded? Forty-nine out of fifty are failures or only partial successes, yet we know by having the practical experience, and feel satisfied that failure should be the exception and not the rule. Before closing let me again assure you that every case of failure to not only hold in check, but to fully exterminate this pest is attributable to one or all of three causes—

1. Poor material.
2. Improperly manipulated or prepared.
3. Imperfectly applied.

Hoping that this conveys my views in regard to this once dreaded, but no longer feared pest, I am very truly yours,

J. H. FUNK,
Fruit Specialist.

We have received dozens of other leters as emphatic as this, and all show that there is a brighter day dawning for the Eastern fruit-growers, many of whom have become discouraged by this worst of all fruit pests.

H. A. SURFACE.

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Iowa Horticultural Meeting.

(Continued from page 11).

the tree peony, and said it was not advisable to plant it far north; even at Davenport the blossoms were often caught by frosts. A recommended list is Richardson's Superba, Festiva Maxima, Golden Harvest, Floral Treasure, Rubra Triumphans, L'Esperence.

Prof. L. H. Pammel sent a very exhaustive paper on "Climbers," which recommended a list which are suitable to Iowa conditions.

Silas Wilson, superintendent of the Iowa fruit exhibit at the World's Fair, made a report which was gratifying to Iowa fruit-growers. He first read a letter from G. B. Brackett, of the United States Department of Agriculture, in which the latter said it was perhaps the best fruit exhibit Iowa has ever made, and one of which the state may well be proud. Mr. Wilson said that while the storage fruit from crop of 1903 lasted the exhibit included about fifty varieties of apples. About September 1 new apples came in, and during the exposition Iowa showed over 300 varieties of apples, which was more than any other state had shown, Mr. Wilson believed. Varieties of pears numbered 70; plums, 61; 12,000 plates of fruit were shown, two-thirds of which were scored for premiums.

Messrs. Murphy and Garrett, Mr. Wilson's assistants, were called upon for a few remarks, and then G. H. Van Houten offered a motion that the thanks of the society be tendered to these gentlemen and to others who sent fruit and thus helped to make the exhibit a success. This passed unanimously, and on the last evening of the meeting Mr. Wilson was presented with an elegant gold watch by the members as a slight token of their esteem and their appreciation of his efforts at St. Louis.

M. J. Wragg, who had served as one of the judges of fruit at St. Louis, told of the splendid showing Iowa had made. He said that Iowa's installation came in for unstinted praise; it was unique, and being open allowed one to get a view of the entire exhibit. "It was the best installation in the building," Mr. Wragg added, "except California's which cost many times as much as ours did."

Iowa received two grand prizes, eight gold medals, thirty-three silver medals and thirty-nine bronze medals. In addition, Mills County received one gold medal, five silver medals and six bronze medals. Mr. Wragg was asked about the relative standing of Iowa, as compared with other states in the awards. Mr. Wragg said that, for the space used and the kinds of fruit entered, no state stood higher than Iowa and few as high. Iowa received a grand prize on apples; no state could do more. Iowa also received a grand prize on cherries.

"One thing I want to say just here," added Mr. Wragg, "and that is that for correct naming of fruits Iowa stood above any state in the building. It was common talk throughout the building that the men in charge of the Iowa exhibit were the best authorities on nomenclature, especially of apples, in the building." At the close of the exposition Mr. Murphy was presented with a testimonial letter, from most of the exhibitors, testifying to the service he had rendered in helping to straighten out nomenclature.

W. D. F. Lummis, Des Moines, presented a most excellent paper on "City Lawns," recommending a list of shrubs and climbers which should be more generally grown in Iowa.

Wednesday evening the session was largely given over to the ladies, and the following papers were read: "Phenological Notes," Miss Charlotte M. King; "Domestic Science," Miss Georgietta Witter, of the Iowa State College; "Relationship of Domestic Science to Horticulture," Miss Bess Blackburn. These were all good papers, and the latter was especially interesting for it dealt with cooking tests of different varieties of fruits. Jellies, marmalades, etc., were made of different varieties and quality compared.

Another good paper was by Miss Harriette S. Kellogg, "Folk Lore in Medicinal plants." A feature of the evening program was the musical numbers, a song by Miss Ora Brandt, a violin solo by Mr. Mosier, and a quartet which sang two songs, the words of which were composed by Mr. Eugene Secor, one of the honored members of the society. These were "The Hum of the Bees and the Apple Tree Blooms" and "Buckwheat Cakes and Honey." This was a surprise to Mr. Secor, and was much enjoyed by him and the members.

The officers elected were as follows:

President, P. F. Kinne; vice president, W. A. Burnap; secretary, Wesley Greene; treasurer, Elmer Reeves; directors, C. G. Blodgett, J. W. Murphy, W. O. Willard, W. B. Chapman, G. A. Ivins, Chas. A. Gardner. These officers were all re-elected, except that Mr. Murphy succeeded Silas Wilson, who will be out of the district; Mr. Chapman succeeds B. Shontz, who has left the state, and Mr. Gardner succeeds J. S. Trigg, who has left the district.

At the conclusion of the program Wednesday evening the members and their wives and the visitors were the guests of Secretary Wesley Greene at a dinner at the Hotel Elliott, which was a most enjoyable affair. The menu was excellent, the crowd was congenial, and everything passed pleasantly. Silas Wilson acted as toastmaster, and the following toasts were given: "The Ideal Orchard," W. A. Burnap; "The Ideal Nurseryman," J. C. Ferris; "Alaskan Horticulture," G. H. Van Houten; "Inspiration That Prompts Tree-Planting," M. J. Wragg; "The State of Wisconsin," A. J. Philips; "Minnesota," Frank Yahnke; "The State of Missouri," James M. Irvine; "The Country Beautiful," T. H. MacBride; "Inglenook," Wesley Greene; "Experimental Horticulture," C. G. Patten; "Iowa Ladies," W. J. Moyle of Wisconsin; "Science Put Into Practice," A. T. Erwin; "The Press," J. S. Trigg; "A Bit of Greene," was the title of a little poem by Eugene Secor, as follows:

A BIT OF GREENE

We stretch our legs beneath the board
With greatest satisfaction
When someone else assumes the bills
That drive men to distraction;
And hence, tonight, these fruit-tree cranks—
Who turn their own heads, chiefly—
Will linger where this gratis grub
Has tickled them too briefly.

Men who have lived on Russian fruits,
And they who eat Ben Davis,
Have come to poach on Greene's preserves,
And get a taste of Avis.
Plain Johnny-cake and apple-sauce
And home-cooked pork and beans
Will seem like twenty-seven cents
Beside this feast of Greene's.

Our appetites, like Christmas socks,
Were extra large tonight,
But Wesley, playing Santa Claus,
Filled everything in sight.
But since we can't prolong this joy,
And the time of parting nears,
We pray our kind and honored host
May live a thousand years.

Thursday morning the members were late getting together, the banquet of the previous evening having lasted until about 2:30 a. m. Delegates to the horticultural meeting of sister societies reported, as did Elmer Reeves, delegates to the conference of horticultural society workers, which was held in St. Louis.

J. C. Ferris read a paper on "Confidence Restored," telling of the planting of apples in Northern Iowa. A committee in 1884 reported that only four varieties of apples were hardy in Northern Iowa—Tetofsky, Whitney, Duchess and Wealthy. Now a great many more varieties, including winter sorts are successfully grown.

W. A. Burnap conducted a very interesting conference on spraying, whih developed the fact that most of the members are convinced that spraying is not only practicable, but neoessary. Only one man reported that his experience had not been sufficiently satisfactory to justify the expense—and and this man was from Wisconsin, Mr. Moyle. Most of the members preferred the liquid spray, although Mr. Tatum, Elmer Reeves and several others had had good results with the dust.

A visitor at the session was Mr. T. B. Macauley of Montreal, Canada, who made an interesting talk concerning conditions in his section.

Prof. R. P. Baker read a paper on the work which is being done in various states along the line of forestry, and William Langham followed with an interesting and humorous paper telling of his experience with strawberry pickers.

J. S. Trigg read a paper on "Profitable Apples for Northern Iowa." For commercial planting he recommended Yellow Transparent Tetofsky, Duchess, Wealthy, Patten's Greening, Malinda and Northwestern Greening. With this list any farmer can raise apples for his own use, at least, and have the fruit from one crop until the next crop comes in. Mr. Trigg called attention to two plates of apples from the exhibit of Mr. Harrington, one Gano, the other Black Ben Davis, and asked if there is a difference or if the apples are one; from the specimens he had seen, he thought they were not the same.

Mr. Harrington was called for, and said he had grown them both, and be-

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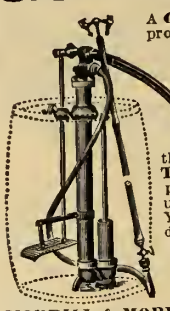
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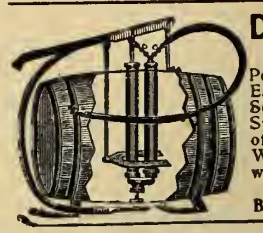
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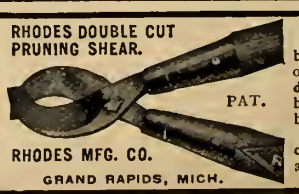
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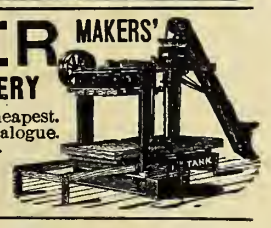

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lieves they are distinct varieties. Mr. Philips of Wisconsin said he had investigated the matter, for his own satisfaction, and believes they are different.

Mr. Wilson was called for and said he had not desired to get mixed up in the controversy. He called attention to the fact that years ago he had bought wood of the Worden grapes, for purpose of introduction. A little later some one sold to Mr. T. S. Hubbard, a good, honest man, some cuttings said to be Worden, but which were only Concord. When Mr. Hubbard's vines came to bearing he persistently claimed that Mr. Wilson was selling Concord vines as Worden. This continued for some time, but all the time Mr. Wilson claimed he was right, and that Mr. Hubbard was mistaken, not having the true Worden. Time proved the correctness of this contention.

"Now, Mr. Hubbard was an honest man," said Mr. Wilson, "But he was certainly mistaken. Now, I think there is much the same condition here. I attended the Missouri meeting in 1901, and was one of the judges on fruit; the Black Ben Davis was shown there, and I could see that a prejudice existed, and I did not get into the matter. But this season Mr. Harrington sent us some Gano, Ben Davis and Black Ben Davis for our exhibit, and when they were placed on our tables they attracted much attention. There was a very buzz around the place. Now, from what I know of the matter, I believe there is unquestionably a difference, as much difference between Gano and Black Ben Davis as there is between Gano and the old Ben Davis."

M. J. Graham, Adel, said he had both varieties fruiting and had no doubt they were different.

Mr. Murphy was asked for his opinion, and said he thought that question was settled so far as Iowa was concerned some time ago. "If I know varieties of apples, there is no question of the difference—as much in fact, as Mr. Wilson says, as between Gano and the regular Ben Davis."

Mr. Murphy was asked as to the difference in quality, and said that all are of the Ben Davis type, but he believes that Black Ben is a little better quality than either of the other two.

One of the important matters of the entire meeting was brought up the last afternoon. Mr. Bomberger told of the discrimination against Iowa growers in the matter of freight rates. A motion carried to appoint a committee on transportation and markets, and a resolution was passed indorsing the recommendation of President Roosevelt to the effect that the power of the interstate commerce commission be increased so that it could more effectively deal with the question of rates.

The discussion brought out the fact that last fall the growers in Iowa were unable to market their apples in many cases on account of excessive freight rates. An instance: The freight rate from Rochester, N. Y., to Watertown, S. D., a distance of about 1,100 miles was 70 cents per hundred for apples in bulk. From Glenwood, Iowa, to same point, a distance of about one-third the distance, the rate is 62 cents per hundred. The rate from Glenwood to points in Nebraska, about 200 miles away, is 60 cents per hundred pounds, while the rate from Rochester to Glenwood is only 49 cents per hundred, this distance being many times the former.

Mr. Van Houten told of the move which is being pushed by the agricultural interests of the state, and urged the fruit-growers to co-operate with them, and also to have men appointed on this committee who will investigate the matter of rates, so they will be prepared to present facts and figures.

Mr. M. De L. Parsons read a paper giving his experience with top-working, which was very interesting.

Mr. Philips of Wisconsin gave an interesting talk on Wisconsin seedling apples, showing perhaps two dozen different varieties which have been originated in that state, including Northwestern Greening, Wolf River and others.

Thursday evening's program included several good papers, but The Fruit-Grower representative was compelled to leave on an early train, and did not get to hear them.

The apple exhibit was one of the best, if not the very best, ever made by the society. To encourage the fruit exhibit in other years, the society recommended to the board that the sum appropriated for premiums be increased from $65 for each district to $100 for each, or from a total for the three districts of $195 to $300. A premium was awarded to a seedling shown in 1903 by Mr. Winfrey which bears his name. Several other seedlings were shown this year, and will be watched and reported upon next year.

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The Fruit-Grower is the best paper of the kind I have ever seen.—G. P. Turner, Yukon, Okla.

Fruit Exhibit at St. Louis.

World's Fair, St. Louis.—I have been here three weeks; have met many friends, among whom was Hon. W. H. Ragan of Washington, D. C. The last time I met him was on the trip with the American Pomological Society in 1887. Mr. Parker Earle was the president and Mr. Ragan secretary. Some 200 of the advanced horticulturists were of the party. Of the party there was Ridpath, the historian, Hale of Connecticut, Munson of Texas, Barnard of Nebraska, Buckman of Illinois, Prof. Budd of Iowa, Furnas of Nebraska, Hubbard of New York, Ohmer of Wisconsin, J. M. Smith of Wisconsin, Van Deman of Washington, D. C., Veal of Texas, Watrous of Iowa. These are some of the illustrious, who formed part of the organization in 1887, and of whom I can remember. It was a real pleasure, then, to meet Secretary Ragan after so long a time and talk over the pleasant times had in California. Mr. Ragan is quite well preserved. He acted as a juror in the fruit department.

The last days of the Fair were quite a surprise in the fresh fruits shown. Iowa had a great show of 265 named varieties of apples and a faultless show they were. The varieties were not only faultless as show fruit, but all upon plates so they could be inspected. I think the time of pickled and preserved fruits should pass. Some states had at great expense a large collection of fruits in jars that magnified. Then there were representation of fruits in plaster, that like Dead Sea fruits were pleasing to look upon but alas when examined were ashes. I noticed one man looking upon them admiringly. The usual cards of "Hands Off" were in evidence, yet the temptation to handle was so great he picked it up. "The blamed thing is as light as a feather." He shook it to his ear, "and it rattles." A more disgusted individual I did not see at the Fair.

My impression was that Iowa had the cleanest show of all until Oregon unloaded a car of apples in bushel boxes. I doubt if the world ever saw such a show. Every apple was simply perfection. All joined in singing the praise of Oregon fruit.

Colorado and Washington, too, had a wonderful collection. In the Washington collection there was possibly the largest apples ever shown, one of which weighed 40 ounces, another 36 and several 32. The variety, Spokane Beauty, while large, was withal fairly edible. A seedless apple was in evidence, but I think of little or no value except as a curio.

This reminds me that I have a crab that is quite long. By cutting it through the middle there are no seeds visible, but still it contains seeds at the base of the stem. The committee on examining a specimen found one seed in those shown.

The Black Bens shown by Colorado and Washington attracted considerable attention for size, uniformity and high color. As an object lesson Iowa had Ben Davis, Gano and Black Ben all grown by the same party and side by side. I heard many say: "Well, that settles it with me. There is a decided difference."

It was my intention to remain until the close of the show, but coming home to vote took a severe cold and have been laid up for repairs much of the time since. One thing that was unsatisfactory to some of the states, was in the selection of the jurors. Many of the states had three, while the West, Missouri excepted, had a single representative—many states none. It shall, while memory lasts be a bright spot in my memory that I could enjoy this the greatest Fair ever held. FRANK HOLSINGER.

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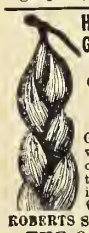

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Gardening Department

This department is conducted by Henry Field, a market gardener and seedsman of Shenandoah, Iowa, in the southwest portion of that state. Besides his regular garden work, Mr. Field has extensive test grounds, the reports from which appear exclusively in The Fruit-Grower. Those of our readers who desire information concerning any garden problem are invited to write to Mr. Field and tell him their troubles. He will be glad also to receive samples of vegetables and flower seeds for testing in his trial grounds.

Planning for Next Year.

The main work of the gardener now is to plan the garden for next year. You know by this time what has paid and what has not. You know what your soil is fitted for and what your market wants. You can form a pretty good idea of whether you want to grow crops on the intensive or extensive plan. In other words you can figure out whether it pays you best to put lots of work on a small amount of ground, or as little labor as possible on a considerable acreage.

Here, where land is high priced, $125 per acre, or $7.00 per acre rent, I prefer to use fewer acres and more labor, but in situations where land is cheaper and labor scarce and high I know it pays better to put in lots of land and get along with as little labor as possible. It is for every man to choose which suits him better. Either one can be made a success. I have always gardened on the intensive plan, having in perhaps forty acres of small stuff, and hiring lots of help. A little farther back in the country my main competitor in the garden business was a man on a rented 60 acres, of rather thin land, that he got for $3.00 per acre. He hired much less labor than I did, and while he got smaller yields than I did, he made fully as much profit and now owns a farm of his own.

Some Paying Intensive Crops.

Onions.—One of the most paying crops, where a man wishes to put a good bit of labor on a small piece of land, is onions. I have always made a profit on them and often a good big profit. They will do well on almost any land, but of course will do best on good rich land. A yield of 300 bushels per acre is about an average, but I have had them up to 750 bushels per acre and have known of cases of even bigger yields. Price onions in the stores now and they will ask you fully $1 a bushel. You can figure out for yourself what there is in it.

Onion Sets.—Small onions for sets are also a very paying crop. I had some this year that made 400 bushels per acre and they are now worth $2 per bushel. Some years I have known them to sell down to a dollar, but never less than that. The worst drawback with them is that it takes 50 pounds of seed to the acre and it costs from 50 cents to 80 cents per pound. The profits are, however, proportionately large. The seed is sown in rows a foot or 14 inches apart the same as the big onions, but about ten times as thick in the row, and later in the season. We sow it in May. After they are thoroughly cured they can be stored in any dry, cool place.

Celery.—Probably more money to the acre can be made from celery than from any other garden crop. Try a block of it next year. It can be grown on any rich, moist soil that would grow good, late cabbage. Mine is in rows four feet apart and the plants about four inches in the rows. We are now feasting on better celery than ever came out of Kalamazoo, and it was grown right here in the corn belt.

Radishes.—If you have a market for them you can make big money out of early radishes and make it quicker than with any other crop. I have often sold $150 worth in three weeks from an acre sown broadcast with a grass seeder, and after they were off in May I had the ground for late cabbage. You are out practically nothing but about five pounds of seed to the acre and perhaps an hour's time sowing them and harrowing them in. If you find a market for them, all right, and if not, you are not out much. I would advise you to sow a pound each of five different varieties and then you stand a better chance of pleasing every one. Be sure and make the Crimson Giant one of the number, for it is positively the best radish I have seen.

Early Peas.—For the man who wants something he can tend with a riding cultivator, I would recommend early peas. They can be planted with a bean or corn drill set to sow very thick, and can be tended with a common cultivator. Not much work, but the picking, and we hire that done at 20 cents per bushel. A good yield is 100 bushels per acre of green peas in the pod, and I have often had 200. The first will bring $1.25 to $1.60 per bushel and later when they get plenty will sell down to 75 cents per bushel. The great secret is to get them in very early. I have often put them in on fall plowing, when the drill would grate on frozen ground every little ways. Of course you cannot plant wrinkled peas early that way. It has to be Alaska or Fillbasket or some such smooth early sort. They are not as sweet as the wrinkled peas, but they are the first to come. They always bear enormously and will grow and do well in spite of anything. If they are early enough they will sell all right.

Early Sweet Corn.—If you have a good market, early sweet corn is a paying crop. It can be planted thick and an enormous number of ears grown to the acre. I have had as high as 1,000 dozen ears to the acre and it generally sells at 8 cents to 12 cents a dozen. While the later sorts are much bigger and sweeter ears they do not as a rule pay as well as the earlies. Plant Cory, White Mexican and Early Minnesota. They will be done and off the ground by the last part of July and you can get another crop in after it. I generally drill sorghum in between the rows when I lay it by and by the time the corn is picked and the fodder cut off the sorghum is knee high and by fall will make several tons of the finest of feed for horses or cattle. We grow all our fodder for the horses that way, i nearly sweet corn and early peas.

Plan the Home Garden.

For the man who has only a small garden for home use, now is the time to be planning it and getting ready for next year. Haul out a lot of rotted manure on it now and if possible get it nicely plowed up yet this winter. It will be in much better shape to work next spring. Map the garden out on paper and have it all figured out where you will plant each vegetable. If you have not already got a bed of strawberries and one of asparagus, leave a place for them and set them just as early in the spring as you can get to them.

Mulch the Strawberry Bed.

Now is the time to mulch the strawberry bed, whether it is an old one, or a new one set last spring. Almost any kind of mulching is all right just so it does not contain too much weed seeds or hay seed. I have used strawy manure, cane fodder, corn fodder, leaves, slough hay, and straw at different times and all with good success. Put it on any time after the ground is frozen and put on plenty of it. There is no danger of smothering the plants till they start to grow in the spring, and if there is too much on then, part of it can be raked off. While you are about it, mulch the asparagus, too. It does not really have to be mulched, but it is better for it.

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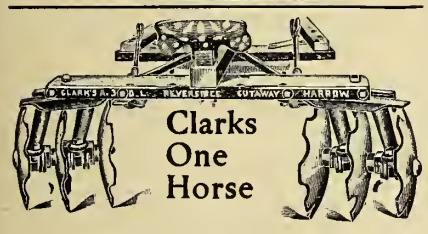

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Cleveland, Ohio

for advice to growing pickles for a factory. As others may be interested in the same subject, I answer it here.

I am afraid I cannot give you the exact information you want, as I am unacquainted with your soil and I have never grown pickles for a factory. I have grown lots of them for market, but it was always on strong soil. The managers of the pickle factory ought to be able to give you the best advice. It is a rule with all of the melon and cucumber family that they must have a warm, rich soil and if yours is not that way you must make it so. I would advise that you lay the land off in checks six feet apart by marking each way with a stirring plow. Where the furrows cross, scoop out say two feet across and a foot deep and put in a half bushel or so of well rotted manure. Of course less would do, but you can't get in too much. Then throw a furrow from each side in towards the row and you will have a series of low, broad ridges six feet apart, with the old cross furrows showing where the hill is to come. As for the time of planting, you will have to follow the directions of the factory people as they may want the pickles to come in at some certain time. They will also specify the variety to be planted. Pulverize and work over the ground thoroughly where the hill is to go and plant the seed about an inch deep well scattered over the hill. After they show the third leaf, thin out to three in a hill. Of course it is unnecessary to tell you to keep them tended clean. You know enough to do that Being checked they will be easily tended. After the vines begin to set pickles you will have to stop tending and you may have trouble with weeds after that, but you can't help it then.

HENRY FIELD.

The Cabbage Snake Scare.

More than a hundred letters have been received by the Missouri Agricultural College asking for information concerning the so-called "poisonous cabbage snake," and the collection of snails, centipedes and other creeping things received from these inquirers would form the foundation for a splendid collection of Missouri's lower animal life. The most peculiar thing about this scare that has swept the state from one end to the other is that it has no foundation in fact. Prof. J. M. Stedman, entomologist of the college says, "Not a thing is to be found on cabbage that could not have been found any fall for the last twenty years. And more than this," he continues, "there is not an animal in the world that will poison cabbage so as to injure the person eating the cabbage alone or both cabbage and animal. The whole scare seems to have started from a fake report concocted by a correspondent of one of the St. Louis papers. Being hard pressed for news one day, he wrote of a whole family that had come to a painful death from eating cabbage upon which a new reptile resembling a small snake was present in large numbers. Other papers copied the story. People read it and began to carefully scrutinize their cabbage patch, and of course were rewarded by finding upon it bugs and worms that can be found any fall. The most common specimen I have received is a nematode worm, somewhat resembling a horse hair, that lives as a parasite in crickets and grasshoppers and is perfectly harmless. Not a single one of the seventy-five specimens I have received is at all injurious. This so-called cabbage snake is a myth pure and simple, and people should cease bothering about it."

Forcing Rhubarb in the Dark.

Reference has been made in these columns many times to the new method of forcing rhubarb in the dark, which has grown in popular favor within the last few years. The plan is very simple, and whether the rhubarb is grown for home use or for market, the plan is a good one. The quality of rheubarb is very fine, better than that grown out of doors, and the plan is worthy of trial by every farmer. A member of the Columbus Horticultural Society read a paper on the subject some time ago, telling of his experience, as follows:

Usually only crowns from three to five years old are used for winter forcing. In the experiment reported, seedlings obtained by sowing seed in April in drills two feet apart were used. The seedlings made a remarkably good growth during the summer, many leaves attaining a foot across, with stalks fifteen to twenty inches long and an inch thick. After the ground had been frozen and thawed out once in the fall the roots were plowed out and placed in a dark cellar. They were packed closely together, with the crowns up, and soil sifted between until the roots were covered two or three inches deep. They were then thoroughly soaked with water and the room made perfectly dark. The stalks pushed rapidly into growth, and within four weeks an excellent growth of rhubarb was secured. These seedling roots furnished two pullings of first-class stalks, two more of fair stalks, and two or three more pullings of rather small and spindly stalks.

In all, the one crop lasted about four weeks. The exhausted crowns were then removed and a new supply grown in like manner. It is stated that in this work the temperature should never be allowed to go above 60 degrees F., unless quick results are wanted at the expense of quality and quantity. The crop grown in this experiment sold for from 60 to 75 cents per dozen bunches, and there were from four to six stalks in each bunch. From an area of 370 square feet of cellar space rhubarb to the amount of $35.55 was sold, and it is believed that the yield obtained in this experiment can be materially increased when more attention is given to the growing of the seedlings. Special mention is made of the desirability of growing the roots in absolute darkness, since by this method the strength of the root is directed into the stem of the rhubarb rather than into the production of foliage. "By planting the seed on heavily manured loam soil and thinning the plants to a distance of one foot in the rows, with proper cultivation and mulching if need be, we believe roots can be grown in a single season which will give twice the yield received from our experiment. If it can be done with certainty from year to year the question of obtaining crowns for forcing purposes will be solved."

Oklahoma to the Front.

Almon Hall, Choctaw, Okla., writes: "Election returns are in, and the country is 'saved' again. Although not much of a politician, I used the opportunity to get a few subscribers, using the handsome September number as a sample. Find inclosed $3 and fifteen names, which I secured in about two hours. Could have secured as many more if I could have stayed until evening. This is coming to be more of a fruit country every year. Five and ten-acre orchards are common, and fifty-acre orchards are numerous. We have the proper climate, soil, slope, altitude—everything, in fact, in the way of natural conditions. And we also have good markets. Good railroads will take away our fruit, but our home towns provide most excellent markets. Apples are selling at $1 a bushel and upwards in Oklahoma City now. In the North apples are raised at 50 cents a bushel on land worth $50 per acre. Here we raise apples which sell for $1 per bushel on land which can be bought for $10 per acre. Figure on that. This is the section which furnished the premium Oklahoma apples at the World's Fair, and it has a bright future."

I want to approve of your trade-mark, Bro. Jonathan. This is the apple for me, first, last and all the time. I would not try to do without The Fruit-Grower.—M. Johnson, West Fork, Ark.

I am in my seventy-sixth year, and have been in the fruit business for thirty years; have sold my farm, but feel that I cannot do without the best of all papers.—A. F. Brumback, Hamburg, Iowa.

Cancer of the Breast—How Mrs. Elizabeth Worley's Life Was Saved.

Warnock, O., April 28, 1904.

Dr. D. M. Bye Co., Indianapolis, Ind.

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Questions and Answers

Oregon Evergreen Blackberry Again.—J. W. C. Gray, Atwood, Ill., sends the following concerning this fruit, which has been discussed in these columns: "Mr. Wilcox has told the truth of the matter, for the variety is no good. Mr. Wilcox was lucky to get his plant for $1—I paid $2.50 for the plant I got. The agent would not sell me any more; said one plant would furnish all the berries any family needed. It is evergreen and a rampant, slender grower; differs from all other plants in foliage; plant is a very shy bearer of very poor fruit, and it is not frost proof."

David Emerick, Paris, Ill., sends his report as follows: "Although some things said about the Oregon Evergreen berry by advertisers are not true, the fruit is not a fraud, nor is it worthless, as it has points of real merit for family use, as it is in season for a long time and though the berries are not early nor large, they are sweet and free from core and not so watery as other blackberries; they are as large as Snyder. It is not perennial, vines dying each year, but a commendable thing about it is that it remains where planted for years; it does not sucker. It is not hardy here and needs winter protection by laying down and covering lightly with leaves, straw or other material. The vine has not produced "bushels annually," as some advertisers assert, but it has yielded more fruit annually than is possible for any other variety, averaging from ten to twenty quarts after canning, besides what the birds got. It must be properly treated as regards cultivation, fertilization and pruning, and it will not bear neglect. The failure to fruit in California was no doubt owing to want of pruning to check growth and induce fruiting. Here it needs summer pruning and cutting back of young vines to ten or fifteen feet. The first few years my vine was allowed to grow thirty or more feet, and there were few berries. Like the Ben Davis apple, the variety may be disappointing where too much is expected of it or not given proper care."

Munson's Grapes in the North—In answer to C. B. P., Albany, Mo., will say that I live 39 degrees north latitude, and have had some of Munson's seedling grapes for the past ten or more years and have found Rommel, Brilliant and Carman hardy in this section notwithstanding that we have had several very severe winters. Brilliant is a very fine grape for table use and for jellies, etc. Carman is very fine and also suits my taste for eating. One thing must be borne in mind, that is, that most of Munson's grapes require more room than other grapes, as they are nearly all strong growers. Munson's catalogs give the distance that each variety should be planted. I have several other varieties of Munsons, but not yet old enough to bear.—Chas. G. Miller, Boonville, Mo.

Another Report.—In reply to the query concerning the Munson grapes, will say I have five of them, America, Carman, Beacon, Brilliant and Presly, neither of which I would think is equal to Concord as an all-around grape. America is perhaps a very good wine grape, but grows so rampant that every few days I sickle off a crop of suckers, etc., above the top wire that would astonish anyone. Beacon I thought more of, much like Concord; in fact, it is half Concord, but this year rotted the worst of any on my place. Carman is late, not good for table; good for wine, maybe, but did not ripen this year when first frost caught them. Brilliant needs cover in winter, does otherwise well, but in my opinion it is not equal to Brighton as a table grape. Presly, a cross of Delaware, is a strong grower (in fact, all five are strong growers), the fruit smells elegant, but that is about all. I consider it no match for Delaware, with which it ripens. If Mr. C. B. P. wanes something better than Concord, I think Worden "Concord's best child," is the only one I would suggest. Unfortunately, however, Worden ripens very unevenly, indeed so much so at times that it is hard for me to recommend it, but for quality (I am only speaking for myself), when fully ripe has no superior in all the long list of grapes. Add to this its large size of bunch and berry, strong, healthy growth, etc., and you have a vine worth cultivating. For twenty-five years I have tried to find something "better than Concord," but Concord is hard to beat. Mr. Edwin Taylor says in the last issue of Western Fruit-Grower: "Concord is only poor because its cheap." Perhaps he is right, taking all points into consideration. I most heartily agree with an old Swiss neighbor of mine who told me twenty odd years ago, "Concord isch de bescht."—Otto Lueddecke, Pilot Knob, Mo.

S. N. J., Blackwater, Va.—When and how often should I look for borers in peach trees? (2) Will soft soap, applied to the tree keep them out? If so, when and how often should it be applied?

Answer by Prof. Stedman: You should look for borers the latter part of August or first of September, and dig them out with a sharp knife. A wash consisting of a very strong soap solution containing enough slaked lime to make it thick, if placed upon the trees twice in the spring and early summer will keep the great bulk of adult borers from depositing their eggs there, but in spite of this application, one should dig them out as suggested.

A. H., Choctaw, Okla.—Please tell me what causes the enlargement of my plum twigs, as per sample enclosed. (2) How shall I prune Kieffer pear trees, four years planted; getting too high, and I am afraid of blight? (3) How are Red Trumpet honeysuckles propagated? Crimson Rambler rose? Bush honeysuckle? (4) How can I grow Chinese Umbrella from seed? Is it identical with Japanese Palm?

Answer by W. L. Howard: (1) The twigs have been injured by insects, but whether by grasshoppers, crickets or others is impossible to say. It does not seem to be dangerous. (2) If your pear trees are shapely, no pruning at all should be done, as cutting them would cause many sprouts to form and make them more susceptible to blight. (3) The Trumpet Creeper is readily propagated by means of layers. Drag down a bunch in early spring and cover it at intervals with earth. If the branch is slightly twisted so as to break the bark at the points covered, sprouts will form more readily. Crimson Rambler Rose is readily propagated from cuttings made and planted in boxes of sand, with mild bottom heat, in late winter or early spring. The branches may also be layered in spring. Cuttings from 6 to 8 inches long from wood of last season's growth of the Bush Honeysuckle may be made in early winter, packed away in green sawdust or moist sand in a cool cellar during the winter and planted in rows in the garden with only one or two buds above ground in spring. It will grow very readily. (4) The common Umbrella Plant, or Umbrella Palm, which I presume is what is inquired about, is usually propagated by a division of the root stocks, as it sprouts readily, but may be grown from seed, which may be handled in much the same manner as any other flower seeds which are grown in the house. A shallow box with a rich well-drained soil would make a good seed box. It must be kept moist. Have not heard these plants called "Japanese Palm."

G .D. C., Glen Ellyn, Ill.—What is the value of sifted coal ashes as a fertilizer on new orchard land that will be planted in potatoes in the spring?

Answer by W. L. Howard: Ashes from soft coal contain less than one-half of one per cent potash and about one-half this amount of phosphoric acid. The former is one of the essential ingredients in fertilizers needed in an orchard, but it would require very large quantities of the ashes to supply it in amounts that would do much good. When the coal ash is fresh it contains over 8 per cent of sulphuric acid, which might injure shallow-rooted plants. If the land be very clayey and inclined to bake and run together, coal ashes will improve its physical condition.

F. C., Paris, Texas.—I am to get grafts of a seedless grape about February next, and as they will not root, I wish instructions as to best method of grafting them on year-old vines. Would I be likely to succeed by cutting vines off below the surface and cleft graft, tying with twine and wire over twine, and using a little clay and cow manure mixed instead of wax? Please describe the method you think best for an amateur.

Answer by W. L. Howard: The most successful way to graft grape vines is to cut them off below the surface and cleft graft, merely tying with cotton twine, but using no wax. The materials you mention would do to use in lieu of wax, as they would not have the same effect as the grafting wax.

G. W. L.—How should a four-year-old apple tree be pruned, after a severe cutting back a year ago? The main stubs have sent out shoots from all the buds, from two to five feet in length, and from three to five on each limb cut back. This makes considerable brush in the top, and the question is how best to thin them out, and which ones should be removed. Fruit spurs are coming along the main limbs, and fruit trees here are apt to overbear. (2) In grading our orchard for irrigation we removed the dirt from about some four-year-old trees from twelve to fifteen inches, leaving them standing on a mound, though the root system was not disturbed, the trees having been planted deep. The roots are now close to the surface. Could these trees now be safely taken up and set deeper? If so, would fall or spring be best? Will they root down if they remain as they are?

Answer by W. L. Howard: Remove branches which seem to be in danger of crowding each other, as they should never be allowed to rub together. Leave one branch as near the center of the tree as possible to grow into a leader. It may be necessary to clip the others back slightly in order to let this one have the lead. Try to plan the branches so that they will be well distributed but far enough apart so that there will be free circulation of air throughout all parts of the head. (2) Four-year-old fruit trees may be lowered deeper into the soil any time during the winter. If taken up with large quantity of earth adhering, the principal roots will not be disturbed and the trees may be lowered into the new position without any trouble. The roots of the trees would scarcely strike deeply enough into the soil while standing on a mound to make them substantial or to prevent their drying out even if irrigated.

F. M. N., Chillicothe, Ohio.—I have a fine Japanese chestnut tree, about ten years old, which blossoms full each year and develops a good crop of burrs, until they are about half grown,

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when most of them fall off; very few go to full maturity. Soil is a stiff, heavy clay, with bluegrass sod. Never been fertilized much. What is the trouble?

Answer by W. L. Howard: Most species of nut trees are bisexual, that is, the staminate and pistillate flowers are both found on the same tree. However, exceptions have been noted where they are unisexual, that is the staminate and pistillate flowers are produced on different trees. In such cases as the last mentioned, the two trees would have to be grown together to produce fruit. Lack of fruitfulness in nut trees, especially the chestnut, is probably due to the different dates of blossoming of the staminate and pistillate flowers, or to a deficiency in the number of staminate flowers or a lack of potency in the pollen produced by them It is quite probable that the soil has nothing to do with the failure to produce fruit.

E. K., Washington, Mo.—I planted an apple orchard six years ago, on land sloping north and east: cultivated the orchard every year and planted potatoes and berries in it; painted the trees every spring with a mixture of fresh lime, crude carbolic acid, sulphur and soft soap. Trees are doing fine, except some which have root rot and died. What is the cause of this, and what the remedy?

Answer by W. L. Howard: Root rot is an affection which sometimes destroys fruit trees regardless of how well the orchard may have been treated. It is supposed to be a fungous disease, but very little is known about it definitely. No practical remedy has yet been produced.

H. H., Chicago, Ill.—Is the waste from cider presses of any value as fertilizer? I can get all I want of it, but as I have never read in The Fruit-Grower of its ever having been used in this way, I did not know about the value, and did not care to take any chances?

Answer by W. R. Howard: Apple pomace is rich in nitrogen, which is the best fertilizer for gardens and many of the farm crops, but not for fruit trees unless the soil be very thin. Wood ashes would be the best for the orchard if old enough to fruit.

S. N. J., Blackwater, Va.—(1) Is stable manure good to mulch apple and peach trees with? If so, when must it be applied? (2) Is sawdust of any value as a mulch for fruit trees?

Barnyard manure is certainly a good mulch for fruit trees. If soil is already rich, the manure may cause too rank growth of peach trees sometimes. The manure can be applied at any time, but fresh manure should not be placed next to trunks of trees. (2) Sawdust is not recommended as a fertilizer, except it be thoroughly rotted; green sawdust has some disadvantages as a mulch.

W. D. H., Troy, Mo.—(1) When is the best time to prune young fruit trees which were planted this fall? (2) Should peach trees planted in spring be pruned back to stubs about one and a half or two feet from the ground, thus securing a new growth?

(1) The trees can be pruned at any time before growth starts in spring when wood is not frozen. (2) Commercial planters usually prune their peach trees as you suggest, forming the head where it is desired.

Answer, by T. C. Johnson, W. Va. Exp. Station.—An orchard such as you describe should receive clean cultivation for a few years at least Plow the entire orchard in the early spring with a turning plow, getting as close to the trees as possible without injury to the roots. Sow broadcast 200 to 400 pounds of high grade phosphoric acid and 20 to 30 pounds of muriate of potash per acre and work into the soil with a disc or spring-toothed harrow. Repeat the harrowing at intervals of two weeks or after every rain, in order to prevent the formation of a soil crust and to conserve moisture. The tillage may cease at the middle of July, when ow peas should be sown. The peas should remain on the ground over winter and be turned under the following spring. The treatment should be repeated as long as good results follow. However if the trees seem to make too much growth it may be necessary to set to grass for a year or two or grow an occasional crop of grains to check the excessive wood growth. Sod should not remain in the orchard more than two or three years. Subsequent cultivation may be modified to meet the requirements of the trees. Wooly aphis on the roots of the trees may be successfully combatted by scattering a quart of tobacco dust (pulverized stems) around the base of the tree and working it into the soil.

S. B., Huntington, Ark.—I have a problem I would like to have The Fruit-Grower readers to help me solve. My farm and the Dixie Fruit Farm are on the same ridge, about half a mile apart. The altitude is about the same. The Dixie farm lies about two or three degrees more west of north than mine. The Elberta peaches on the Dixie farm ripened ten days ahead of mine. Some say I cultivated too much. I gave perfectly clean cultivation till the middle of June, then sowed to cow peas, broadcast. Other persons say the ground has too much nitrogen, yet when I bought the farm in 1899 I was advised not to buy it, as the land was so poor that a crow could not live on the products of the soil. The top is a sandy loam with a dark red clay subsoil, from four to ten feet thick. The Dixie Farm is a sandy top soil, but I do not know how much red clay this farm has, but I do know they shot out some holes with dynamite when they planted the peach trees. Yet this soil produces as fine peaches as one would wish to see. Mine, too, were fine. but what caused the difference in ripening?

Answer by Dr. Whitten: It is impossible for one to say positively without seeing the two orchards in question what might cause the difference in the time of ripening of the Elberta peaches in the two places. Usually fruit grown on very young, vigorous trees ripens later than fruit grown on older and more mature trees of the same variety. A difference in the drainage conditions of the subsoil sometimes allows one piece of ground to warm up faster than another. In these well drained, so-called "quick soils" fruit will ripen sooner than in heavier, colder land. Even at the same elevation a difference in the subsoil may make sufficient difference in the water drainage that one piece of ground may be later than another. The stock from which trees are selected has something to do with their time of ripening. Buds taken from trees which habitually ripen their fruit early will usually produce earlier trees than will buds of the same variety taken from trees which habitually ripen their fruit later; but in the same variety and in the same orchard is frequently a difference of a week or more in the time of ripening of the fruit. If a tree is heavily overloaded so that its energies are extremely taxed, it will not ripen its fruit at the same time

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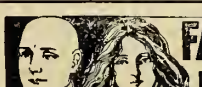

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This department is for the benefit of Fruit-Grower readers who wish to buy, sell or lease farm lands. All advertisements of this nature will be inserted for a charge of 2 cents per word, each initial and number to count as a word. No display type will be used in ads which are accepted at this reduced rate, and all charges must be paid in advance. The rate of 2 cents per word is for each insertion. Count the words when sending your advertisement, and the cost can be easily ascertained. THE FRUIT-GROWER CO., St. Joseph, Mo.

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Large bodies of land and ranches; timber land, fruit and truck farms in Kansas, Oklahoma, Texas, Old Mexico, Louisiana, Arkansas, Southern Missouri, Colorado, New Mexico and California. Tell me what you want and where you want it and how much money you will invest if suited and I will send you list of bargains of the kind you want in that locality. I also have small farms and ranches in all parts of said States. I am working above mentioned territory thoroughly. Write me and see how well and how promptly I will serve you. I have land at 35 cents to $35 per acre.
GEORGE W. MORRIS, Lyndon, Kan.

TWO BARGAINS.

No. 6. 160-acre improved farm 6 miles from county seat of Osage County, Kans., and 4½ miles to Quenemo, a good R. R. town, and ¼ mile from Deaver Station, which is simply a platform, a switch and stock yards. Farm is fenced and cross-fenced into four fields; 110 acres in cultivation and 50 acres in prairie and timber pasture, which is part rocky and rough, but a large creek runs through corner of pasture; 7 acres of prairie grass mow land and 25 acres in tame grass; 24 acres in timber. Large hog lot fenced with woven wire; fine 4 acre orchard, grove of maple trees around house, 3 roomed house, good new barn 20x32 ft. and 12 ft. posts, plenty of other outbuildings; school one mile. Enc. $1,200 at 6½ per cent, due Jan. 1st, 1905. Price $3,650; $2,400 for equity.

No. 1. I have a well improved 160-acre farm in Osage county, Kans., described as follows: Well fenced with a well trimmed hedge on outside. Cross fences of posts and barbed wire; 100 acres in cult., 20 acres of timothy and clover used as meadow; 8 acres of prairie grass mowland; 50 acres of prairie grass pasture; a smooth farm. Owner says 155 acres, at least, are plow land; 3½ miles to a good railroad town, and 6 miles to Lyndon, the county seat, and ½ mile to a good school and rural route; also phone to the house. Good 5-roomed frame dwelling all on the ground, with two covered porches; new barn 32x34 ft. and 16 ft. to the eaves; room for 8 horses, 8 tons of hay, crib room for 800 bushels of corn, and bin for 250 bushels of grain, and a driveway 8 ft. wide whole length of barn; also cattle barn 33x52 ft. and 16 ft. to eaves; room for 35 tons of hay. Barn arranged for hay fork. Henhouse 9x30 ft., smokehouse 9x12 ft., implement shed and hog houses. Buildings all new or nearly new. Price $5,800 cash. Can loan $2,500 to $3,000 on this farm. I consider this one of the best bargains on my list on account of the good buildings thereon and the good neighborhood in which it is located. I feel sure it will suit anyone. It was held at $6,400 last year, but party is anxious to make a quick sale and buy half interest in an implement business here in town.
GEO. W. MORRIS, LYNDON, KANSAS

Fruit Farm for Sale—In the Arkansas River Valley, 2 miles south of Mulvane, Kans., of 120 acres; 20 acres planted to apple and peach, half each, and 4 to cherry, pear, apricot and plum; house 4 rooms and barn. Price $3,200, half cash, interest 6 per cent; apple trees ready to plant 40 more. Apply to J. H. D., Box. 23, Parkville, Mo.

For Sale—25 a. smooth land 3 miles S. W. of Bentonville, Ark., 1 mile from station; 500 Ben Davis, 500 Gano, 250 Etris Apple trees; 500 Elberta peach; all 2 years old. Price $1,500 if sold by Feb. 1; otherwise not for sale. Owner, 705 Joplin Street, Webb City, Mo.

SEE THESE FARM BARGAINS—For Sale—A 36-acre young orchard, trees set five years and have had the best of care; good fences, fair buildings, near good town, good roads, rural free delivery; varieties are Ingram, Gano, Ben Davis and Champion. Price and terms on application. Also, 80 acres 2½ miles from town, close to school, 50 acres cleared and fenced, 10 acres bearing orchard; 22 acres young orchard; 5-room house. Price, $1,500, if sold soon. W. S. Widmoyer, Seymour, Mo.

FOR SALE—40-acre fruit farm, 2 miles from Olney, Ill.; 25 acres in good hearing apple trees, besides other fruit; near school and church; good 6-room house and cellar, new barn and outbuildings, all in first-class condition; plenty of good water. Price $2,800. J. H. MITCHELL, Olney, Ill.

A GOOD PLACE TO LOCATE—On platean of Cumberland Co., Tennessee, where fruit, corn and potatoes grow to perfection. No cyclones, no floods, no great storms of any kind; less wind than any place you ever lived in; no mosquitoes; perfect natural drainage, best freestone water; very healthy, delightful summers; can plow all winter; abundance of free range for stock. Land $3 to $10 per acre. Write A. E. Payne, Crossville, Tennessee.

FOR SALE—Fruit, Poultry and Dairy Farm. This farm is situated in Lincoln County, Mo., 68 miles from St. Louis, on the great Burlington Ry., and is only one mile from the growing town of Elsberry, with a population of 1,200. It contains 159 acres all fenced, two houses of 3 and 5 rooms each, new barn, fine wells and two never-failing springs; plenty of timber for farm use, good pastures, 60 acres in clover, 40 acres in orchard—1,200 apple, 6 years old; 500 peach, 6 years old; 700 apple, 5 years old; 1,600 peach, 1 and 2 years old; apples, scattering crop this year; peaches, full crop; pears, plums, cherries, berries, etc. All trees in splendid condition. The soil is a clay loam and is very fertile. All land is tillable. Clover is a sure crop, with blue grass everywhere. This is an ideal site for orchard, and was selected as the best location in the whole state, soil, transportation, markets, etc., considered. There will be $1,500.00 worth of soil products sold from place this year, not counting live stock. This is a great opportunity for a man with a large family of boys and girls able to do all their own work, or it is a fine investment. The future prospects for money making on this place are very promising. The farm is in the Elsberry school district. The town is fast growing in the direction of this farm. Land adjoining it sold for $100 per acre last spring with no improvements. I offer this farm for sale at $60 per acre, and invite anyone desiring a splendid farm to write me, or better, go at once, to see it. Address, ROGERS, care The Fruit-Grower, St. Joseph, Mo.

FOR SALE—Farm of 480 acres, one and a half miles from Winchester, Kan.; any quarter section will be sold separate if desired. The north quarter is all under cultivation; price $45 per acre. On the southwest quarter is a house of 8 rooms, a cottage; a barn 24x40, corn crib 10x40, driveway between, all under shingle roof; hog pens, smokehouse, 5-ton scale, two wells, cistern, corn crib; 500 Missouri Pippin, 250 Gano apple trees, set out nine years ago; 550 Jonathan set out two years ago; 12 acres in strawberries, blackberries, red and black raspberries, two packing sheds; price, $70 per acre. On the southeast quarter are 6,000 Ben Davis, 1,800 Gano apple trees, set out ten years ago; 500 Gano, set out two years ago; price, $70 per acre. Living water the year round on every 40 acres if wanted. Timber on the two quarters. For particulars write WM. BOOTH, Winchester, Kan.

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An Oklahoma Bargain.—For Sale: Two acres (one block, 24 lots), in county seat of banner county of Oklahoma; 300 bearing fruit, nut and shade trees, grapes and berries; five blocks from court house, one from church and school; ideal property, choice neighborhood, good water, healthy location. For particulars, write Mrs. M. E. Merritt, Tecumseh, Okla.

If you are looking for land in the Fruit Belt of Southwest Missouri, address H. Hogendorn, Farmer and Land Agent, Neosho, Mo.

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in South Missouri and North Arkansas fruit farms and fruit lands. Thousands of acres paid $125 per acre net profit from peaches alone this year. Berries cleared from $40 to $90 per acre. These lands well located, sell from $5 to $8 per acre in wild state and from $7 to $100 when improved. Send for my up-to-date list of wild and improved lands—Free for asking. Let me know as nearly as possible what you want in first letter and I will forward list special bargains. Have 240 acres for $4,800, 1¼ miles railroad town; big house, barn, lays smooth; 60 acres commercial apple and peach orchard. This is Webster Co., Mo. 'Twill pay you to get busy on this beautiful pocket map. Missouri, Kansas, Arkansas, Oklahoma and Texas, 10c stamp or silver, for each state desired. Let's do business.
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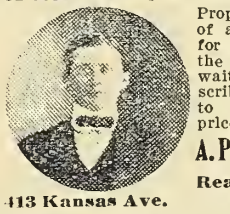

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as a tree carrying a normal crop so that it can easily carry its fruit. The difference in the time of ripening of the fruit in these two orchards may be due to anyone or to a combination of the above factors. The statement that the Dixie Farm has a sandy top soil and that the holes were shot with dynamite where the trees were to be planted indicates that better drainage was secured in this orchard and that the soil was warmer and quicker than in the other farm referred to.

R. L. K., New London, Mo.—Can I fertilize my pear trees in any way to prevent the fruit from being small after they have borne a few crops? I have pears that run as large eighty to the bushel (Methodist measure). I would like them to continue as near this size as possible. What about sulphate of iron as an orchard fertilizer, and how and when to use it?

Answer by Dr. Whitten: If the pears on the trees referred to are small on account of the trees having carried an overload of fruit, larger fruit might doubtless be secured by thinning the fruit early in the season after it is set, so the trees will not overbear. If the trees did not set too much fruit and it was still small, this fact may be due to the cold, unfavorable season which prevented the perfect development of much of the fruit in this section this year and with favorable seasons from now on, the small size of the fruit may not be repeated. If it is known positively, however, that the fruit is small because the trees are improperly fed, a little dressing of barnyard manure is one of the best ways to fertilize the trees. It should be applied sparingly to pears, however, and spread uniformly over the top of the ground. If too much manure is applied so as to promote very vigorous wood growth the trees are more likely to blight.

W. T., Walker, N. C.—I have a large apple orchard in the mountain section of North Carolina, located on the east side of the mountains. The land is very rocky and rough, but it can be plowed. The trees are fourteen years old. Last year I got 2,000 bushels of fruit, but this year if the crop amounts to 1,000 bushels, it will be doing well. What I want to know is what kind of a fertilizer will be best suited to my trees. Also, will it do any good to apply salt about the tree?

Answer by Dr. Whitten: It would be impossible to advise the North Carolina correspondent with regard to what fertilizer to use for his orchard without knowing more of the character of the soil, whether sandy or clayey, whether old and worn out or comparatively new, and what is the condition of his trees. It is safe to say, however, that an application of salt is not likely to in any way benefit h's trees. In many soils, particularly the light, sandy ones in North Carolina, the commercial fertilizers may be profitably used on fruits. A well balanced fertilizer containing nitrogen, phosphoric acid and potash is used on such soils. In other cases, where cow peas will thrive, a crop of cow peas grown in the orchard and turned under the following spring gives excellent results.

C. B., Clay Center, Kan.—(1) Will you please give a description of the Wonderful peach. I bought some trees of this variety; the fruit is a small yellow peach, ripening the last of September; tree grows in irregular shape, with small, willowy branches. The peach here was affected with some disease this year; the leaves curled up in the spring, and through the summer they partially lost their leaves, the fruit became scabby on one side, cracked open and did not color up right, and it dropped off before ripe. Our apples were affected the same way. What is the trouble, and what the remedy? (2) Will it help keep the peach buds from killing by planting deep or banking earth up around them? (3) Please tell me how to treat asparagus through the winter. I followed advice I saw in a paper and cut it off the first of September, and now it is as high as it was. Did I injure it any?

Answer: (1) The Wonderful peach is described by the American Fruit Culturist as follows: "Large; globular; yellow, covered with carmine, flesh yellow, red at pit; rich; freestone; tree vigorous and productive; late." The willowy growth can be corrected by cutting back the branches before growth begins next spring, thus inducing the making of a new growth near the trunk. The trouble with the peach leaves was doubtless leaf curl, which was very bad in this section last spring; this is a fungus disease and can be readily controlled by spraying with Bordeaux mixture before growth starts in spring, and after growth starts the spraying can also be done, but with half-strength Bordeaux. The cause was doubtless the wet, cold weather, and this condition is also responsible for the trouble with the apple trees. The latter were attacked by fungus diseases, for which the remedy is to spray with Bordeaux mixture before the spores of the disease get a foothold. (2) No, the banking of earth about a peach tree, or mulching with straw or manure, will not keep the buds from swelling in early spring, nor will it protect them from injury by very cold weather during winter. (3) You doubtless cut the tops from your asparagus too soon. Most growers do not cut the stalks until the ripened seed pods threaten to burst, when they are removed, to prevent the seeds from dropping to the soil, and thus seeding the bed with seedlings, which are as bad as weeds. The second growth which was made can either be cut this fall or early winter, or removed early next spring. Some persons prefer the latter, but there is less time to do this work in the spring than in the fall.

R. W. M., Pittsburg, Kan.—I bought some fruit trees at a high price, many of them costing 60 cents each. In order to plant them I dug out some old peach, plum and cherry trees, and planted the new trees in the same places. The trees dug up were all seedlings, and they have ruined my new trees, for the latter have become inoculated. I believe. The plum trees began to throw up sprouts from the roots, which proved to be peach sprouts. I thought it was old seeds coming up, but when I dug down to the roots I found the sprouts came out of the plum root. The cherry trees also went back to the little red cherry, as before, and the Catawba grape went back to the little old black sour grape as before. How can I prepare this ground, so this will not occur again?

Answer: It is possible that the plum and cherry trees have sprouted from below the bud, these sprouts producing inferior fruit, but it is hard to see how anything of this kind could have happened with the grape, which is on its ow. roots, and has had no connection with any other stock. There has been no "inoculation" from the former trees; the sprouts have come from the stocks on which the new trees were worked, or else from the stumps of the old trees. The grape vine may not be the variety you ordered, but it has not produced a poor quality of fruit because of the fact that wild grapes may have been at one time grown in the same soil.

W. A. E., Helena, Ark.—I am located on the southern extremity of Crowley's Ridge, where Ben Davis becomes a summer apple. This is said to be no fruit country, for two reasons: First, because the planter puts the tree in the fence corner and forgets what variety it is supposed to be and second, because it is impossible to get a tree true to label, or very nearly so, even from our largest nurseries. Now, I am trying to conduct an experiment orchard. in order that I may discover the varieties suitable for this country and climate. Crowley's Ridge produces as fine-flavored fruit as grows in the world. Now, can anyone tell me where I can get trees that are reasonably true to name? Then I want to know an apple that hangs longest on the tree. (2) What is the best October peach for the South? (3) I want a bucket spray pump of great power. On the hillsides I cannot use a large pump and the automatic pumps have not power enough to make a fine mist-like spray that is necessary for good work. I want a spray that may be used with a rod for elevating the nozzle.

Answer: (1) Any of the well-established nurseries will be able to furnish trees which are reasonably sure to be true to name. Every good nurseryman takes great pains to have his stock true to label, but of course errors occur sometimes. It more frequently happens, however, that the trees are mixed by salesmen, who sometimes sell one variety and then fill the order with a different kind. If Ben Davis becomes a summer apple with you, the finding of a good winter variety becomes a more serious matter. Who can advise the subscriber as to the variety of apple and peach which will fill his wants (3) Why not try one of the knapsack sprayers, if a larger pump is not wanted? The Deming Company, Salem, Ohio, make a good one. Or, better still, why not mount one of the barrel pumps on a cart, which can be pushed through the orchard by hand, or a horse can be utilized for the purpose. For our part, we would rather use a pump of this kind than to have to carry a knapsack or bucket pump. The Hook-Hardie Company, Hudson, Mich.; Morrill & Morley, Benton Harbor, Mich.; the Field Force Pump Company, Elmira, N. Y.; Rippley Hardware Company. Grafton, Ill., and the Deming Company, Salem, Ohio, all handle pumps which can be readily mounted on a two-wheel cart.

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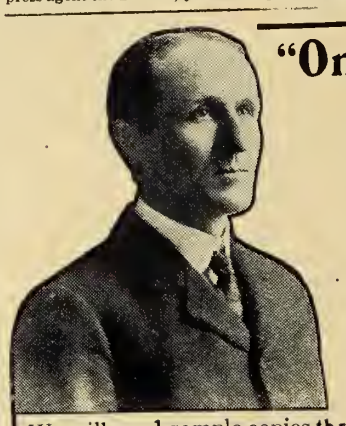

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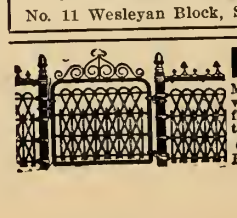

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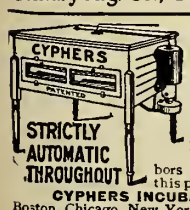

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Poultry Department

Fruit and Poultry as a Combination.

Next month will begin a series of articles in The Fruit-Grower on the growing of fruit and raising of poultry as a combination which can be worked to advantage. This series will be written by Mr. T. E. Orr, secretary of the American Poultry Association. To show that this combination is a profitable one, we quote from an article in American Poultry Advocate, concerning the farm of Gardner & Dunning, Auburn, N. Y., who raise fruit and poultry together:

"There are about twenty acres of land in the farm, some two-thirds of it occupied by tree and bush fruits, which makes an ideal place for old and young chickens to range. The combination is most advantageous for both the chickens and fruit; the trees and bushes furnish much desired shade together with numerous bugs and worms for the chickens, and the fruit gets the benefit of the droppings which enrich the soil, together with the added advantage of insects and weeds destroyed and the surface of the ground stirred by the scratching. Cherries, plums, pears and apples are the chief tree fruits, while raspberries, blackberries and strawberries are the small fruits, and we should not forget an acre of thrifty asparagus; there is about half an acre in strawberries and an acre and a half in blackberries and raspberries. Mr. Gardner told us the income from the fruit and garden paid a handsome profit, with the advantage of the cash coming in during the dull season from sales of poultry; they sold about two hundred and forty bushels of cherries this season, at an average price of $3.00 per bushel, some of the trees were pointed out which gave as high as six bushels apiece. Part of the land is very favorable for garden crops, and on this part late cabbages, sugar beets and mangel wurzels were growing, following early peas and other garden crops; another section produces the clover for winter green food, and about half an acre is in alfalfa, from which three cuttings have been made this season."

Fattening Poultry.

Everyone knows that the great packing companies buy great quantities of poultry of every kind—in fact, they are the largest handlers of this product. But not everyone knows that many of these packers make a good profit by buying fowls from farmers and fattening them before killing. Why should not this fattening be done by the farmers, so they will get the profit of the feeding? What would we think of a farmer who habitually sold his cattle or his hogs to the packers in an unfinished state, and allowed the latter to finish them up, putting on extra weight, at a good profit. The fattening of this poultry is a simple matter; it is not necessary to "cram" the fowls, as many suppose, but simply confine the fowls in small crates and feed them all they will eat is the method usually followed.

The Reliable Poultry Journal is publishing a series of articles on the subject of feeding chickens in crates, and some of the facts brought out will be astonishing to those who have not investigated the matter. There can be no question that every farmer who sells any poultry can increase his profits by fattening the fowls before marketing. The chickens are confined in small crates, with barely room for the fowl to stand up and sit down; there is no room for exercise, for muscle-movement uses up the food which would otherwise produce fat. In a series of tests it has been found, according to the publication named, that the average cost of fattening chickens in the crates is from 4½ to 6 cents per pound of live-weight gain. One crate of twelve Barred Plymouth cockerels weighed 39 pounds when they were placed in the crates. At the end of four weeks' feeding they weighed 78¾ pounds, a gain of 39¾ pounds for the twelve chickens, or an average gain of 3 pounds, 5 ounces. The cost per pound of gain in live weight was 4.3 cents. The profit of the feeding can be ascertained, of course, by deducting the cost per pound of gain from the price at which the chickens were sold. These chickens put on more flesh as a result of the four weeks' feeding in crates that they had grown in the previous three months, running at large.

Another test was made of fattening chickens in crates and in pens. The chickens in the pens had five square feet of floor space; the chickens in the crates were confined as closely as possible. The results proved conclusively that the gains in weight of the crate-fed chickens were greater and the cost of food consumed to make each pound of the gain was less than the gains and food cost of the chickens in the pens. One lot (fifty) of crate-fed chickens gained 142 pounds in four weeks, or 2.8 pounds per chicken. The cost of the food consumed to make each pound of live-weight gain was 5.6 cents. The corresponding lot of fifty chickens fed in a pen on the ground gained 83 pounds in the same period, or 1.6 pounds per chicken. The cost of food per pound of live-weight gain was 10.4 cents, or almost 5 cents per pound more than the crate-feds. These experiments were conducted with chickens of uniform age, weight and breed, and show conclusively that it is far more profitable to fatten the fowls in small crates than in pens, and of course there would be still more profit from this method of fattening than in the old-fashioned way of trying to fatten the fowls while running at large. And yet is it not a fact that most farmers who have chickens to sell simply catch them some night, after they have gone to roost, and next morning start off to market with them?

Note the difference in cost of fattening in crates and in trying to fatten them on the range. And also consider the fact that the weight can not only be increased more cheaply in crates, but a greater weight can be added:

A lot of 350 chickens three months old was divided; half were placed in the crates and the remainder were free to roam around. The chickens in the crates gained in weight more rapidly than the chickens outdoors, and the food they consumed cost $4 less per hundred pounds gain in weight. In this experiment the value of the vegetable and animal food gathered on the range was not considered. Had it been, it is safe to assume that the difference in the cost of putting on flesh during absolute confinement and on the range would be from $8 to $10 per 100 pounds less for the crate-feds.

Is this difference of 4 to 10 cents per pound not worth saving? Will it not often mean the difference between a profit and a loss in the poultry business? The crates in which the fowls are to be fed can be easily made on any farm, and here is one case, at least, where the farmer who markets only a dozen or so chickens can prepare himself for the work as well as the poultryman who has a large lot of fowls to market.

It may be added, in conclusion, that there is all the difference in the world in the quality of meat produced, the crate-fed chickens being infinitely better table fowls, as all who have ever tried the plan will testify.

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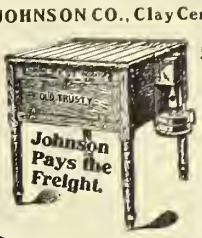

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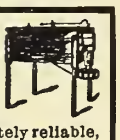

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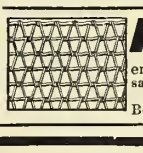

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This Cut Loaned us by Courtesy of Chicago Gasoline Engine Co.

The above group of photographs which we have selected from a collection kindly loaned us by one of the prominent manufacturers of gasoline engines, illustrate only a few of the almost unlimited nses for which the gasoline engine is available and can he used with great convenience and profit. The question of a power suited to meet the requirements of all has occupied the thought and attention of the inventive genius of the world for many years. While the steam engine has proveu a reliahle power and is extensively used, trere are many objections to it for the use of the farmer, blacksmith, small manufacturer, miner, and for small boats and vehicles. It consumes a large amount of fuel for the power actually used; it requires some one to fire the boiler aud an engineer of experience to operate the engine. It takes time and fuel to gt up steam, and when the work is finished, whatever steam and fire is left on hand is a total waste. If the machinery is stopped for a short time, the steam must he kept up and the expense goes on just the same. The steam engine, on account of the danger of fire, makes it very unsafe to use around farm buildings, therefore many other kinds of power have been devised and used, such as the horse power, both sweep and tread, the wind mill, hot air engine, electricity, etc., all of which having their objectionahle features came short of fulfilling the requirements.

The sweep power, on account of the large amount of room uecessary to operate it, must generally be used outdoors and only in pleasant weather, and requires a driver for the horses. The tread power is very hard work and ruinous to the muscles of the horse. The wind mill is a very unsteady, unreliahle power. For pumping during the summer months, when water must be had, the wind refuses to blow and thus the user of the wind mill finds himself out of water, which must he pumped by hand.

The power wind mill is so unsteady, so ruinous to machinery that they have never proven satisfactory. The gasoline engine, therefore came at an opportune time, and is now rapidly superseding all other forms of power. The cost of power obtained from them is less than from any other source, and it has proven a satisfactory and convenient power for all uses. It requires no expense when out of use; they do not require a skilled engineer; start and furnish their full power instantly; they are light as compared with other powers and convenient to be moved from place to place; are clean, free from ashes, dirt or smoke. They furnish a steady, even power, are perfectly safe to use anywhere; are always ready, night or day, wind or calm, rain or shine, and they are now sold at prices that bring them within the reach of anyone requiring power. The expense of running a first-class gasoline engine is less than a gallon of good, ordinary stove gasoline for each horse power per day of ten hours, which is less than the cost of feeding a horse and consumes fuel only in proportion to the power it actually furnishes, therefore they are economical. We have taken a synopsis of the letters written direct to the manufacturers of the engines shown in above photos, which gives the experience of the users,

Photograph No. 1 represents a 3 h. p. engine running a grain elevator, which the owner says elevates 50 bushels of grain in 7 minutes, and the engine in this case saves him the labor of four men in threshing, and the cost to him of gasoliue for ten hours' run is only 42 cents.

No. 2 shows the 3 h. p. engine used for running a washing machine, and its owner says his wife thinks it is the finest thing for washing, because she can start it and stop it, and do other work while the engine is working.

No. 3 shows a hay unloading outfit. August G. Graf, Good Thunder, Minn., states that this engine gives him one man and the team every day he uses it in unloading hay in the barn with sling. This engine is a 3 h. p. and each sling takes up about 1,300 pounds of hay.

No. 4 is a photograph of the power plant owned by John M. Merkel, Fleetwood, Pa. The power is a 2 h. p. eugine, which pumps 15 barrels per hour from a well 65 feet deep; also runs the Cooly Home Creamer, washiug machine, churn, a wood saw, cider mill, etc., without moving the engine. He says he would not give this 2 h. p. Chicago engine for two wind mills; that it is the simplest engine he has ever seen and is always ready for use.

No. 5 shows a 2 h. p. engine running a sawing machine. W. F. Franzen, Bensonville, Ill., states that he can saw with it from one to two cords of four-foot wood into stove lengths per hour, and as fast as three men can handle it.

Photograph No. 6 shows the engine at work spraying fruit trees. Mr. J. W. Birks, of Olney, Ill., the owner, writes in part as follows: "I can truly say the engine is a little 'Dandy.' We have hauled it all over out orchard on all kinds of rough ground, across ditches, spraying with it, and it will run just as well on a farm wagon as on a solid foundation. We run two lines of hose with 12-foot canes with four nozzles on each and hy keeping 110 to 120 pounds pressure can spray out our tank of 200 gallons through very fine nozzles in 40 to 50 minutes. The engine is far ahead of anything I have ever used or seen used for spraying.

No. 7 is a 6 h. p. engine mounted on common farm trucks. Mr. Joseph Byers, of DeKalh County, Ill., says: "I have been using this 6 h. p. engine to run my Champion hay press and was surprised at the way it pulled and the power it developed. It certainly does deliver the goods. I believe that I haled more hay in the same length of time than any other baler of the same size on the market. I am especially pleased with the way my engine runs and its simplicity, and on account of its having no surplus weight it is ported on heavy roads."

The Chicago Gasoline Engine Co., 57 North Jefferson St., Chicago, Ill., who kindly loaned us the above photograph, publish a very handsome catalogue showing many large photographs of the engine at actual work. This book gives a large amount of information on gasoline engines, and all interested parties should write for it.

ST. LOUIS EXPOSITION CREAM SEPARATOR AWARDS.

The De Laval Company comes out proudly in this issue with the announcement of its Grand Prize award just given at the St. Louis Exposition, showing that the De Laval easily holds its old position at the top of the separator ladder. The New York Sun, in reviewing the Exposition awards, pertinently says:

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In reality the De Laval won double highest honors, since the Creamery Package Mfg. Co., chief agents for the sale of its factory machines, also carried off a Grand Prize for its magnificent exhibit of creamery and dairy apparatus and supplies.

The De Laval machines are very much in evidence at St. Louis. Aside from their own large display one is used in the operation of the Exposition Model Dairy, one in the Jersey Barn, one with the Shorthorn Herd, another is found in the Educational Building, and still another in the United States Experimentation Station.

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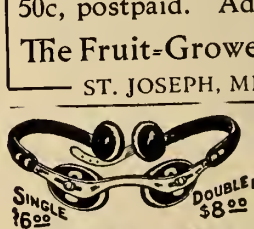

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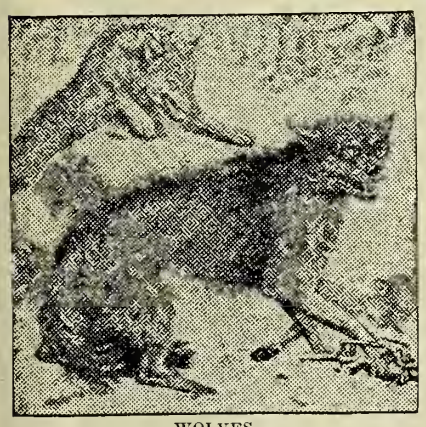


WOLVES.

From full-page illustration in Andersch Bros., Hunters' and Trappers' Guide. The illustrations in this book alone cost $2,500.

That some raw wolf skins are worth as high as $4.25 shows the desirability of being posted on fur values.

All the fur-bearing animals of North America—what they look like; their habits; how to trap them and how to handle and sell their skins—is told about in full detail in Andersch Bros.' Hunters' and Trappers' Guide, the most valuable work of its kind extant.

Hunting and trapping for profit is set forth in plain language; the kinds of traps, trappers' secrets, decoys, snares, when and how to set traps; game laws of all states; all about skunk farms, oppossum farms, fox farms; how to skin cattle and horses, and a thousand and one things of inestimable value to all who wish to know about things outdoors.

This is a $5,000 book, but the price is only $1.50, or to shippers of hides and furs a special price is made of only $1.00, express or postage prepaid.

Andersch Bros., Dept. 42, Minneapolis, Minn., are the publishers. This is the firm that pays the highest price for cattle and horse hides and all skins and furs, and the one that remits without tedious delays.

They ship the guide promptly on receipt of price.

JOHNSON AND HIS OLD TRUSTY.

We are confident that our readers all heartily join us in welcoming "Incubator Johnson" back to our advertising columns for another year. It did not take Johnson long to make his "Old Trusty Incubator" famous. Our readers will remember that "Old Trusty" was his new machine that he brought last year. But Johnson was already well known to poultry raisers in all parts of the country—to many of them personally, to others by his common sense, helpful articles contributed from time to time to the poultry press.

His "Old Trusty" at this time is almost as well known. This can be attributed to two causes. First, Johnson's typical western push, which makes a success of anything he undertakes; and secondly, the machine itself—Johnson's greatest, the result of his many years' experience with poultry and incubator making. The people have been familiarly calling Johnson "the incubator man" for many years. This while he was engaged in building the 50,000 incubators he sold before he perfected his "Old Trusty." He is connected with no other incubator or incubator concern now, and no one else has any connection with the "Old Trusty" or its manufacture.

Johnson is standing entirely alone, working hard to make the greatest success of his life of what he considers to be by far his greatest machine. It is worth while for poultry raisers to become acquainted with "the incubator man." It is good to know the plan of his machines and to be familiar with his practical suggestions about the poultry business. His new machines go out on 40 days free trial and with Johnson's guarantee for five years. We advise our readers to get Johnson's catalog—written by his own hand, in his peculiar style, with all the enthusiasm of a man who has made a success of poultry raising—a rather remarkable book and full of common sense. Of course, Johnson sends it free. You can write to him about any of your poultry troubles and get a personal reply. Look up his advertisement and proceed to get acquainted on the introduction of the publisher.

THE HAWKEYE SPECIAL INCUBATOR FOR 1905.

The old and well-known Hawkeye Incubator Co., who own and operate one of the best equipped incubator factories in the United States at Newton, Iowa, announce a special machine at a very reasonable price for 1905 known as their Hawkeye Special.

They send this machine out on their regular 30 days' free trial plan, which gives the purchaser an opportunity of testing the machine very carefully and taking off a hatch of chickens before he fully decides to keep it.

These special machines are made in two sizes—100 and 200 eggs—and the company announce that these machines have all the late improvements of the Hawkeye Factory and that they are first-class in every respect.

They are backed by their Bank Bond, and every one who has had anything to do with the Hawkeye Incubator Company knows that whatever is put out by this company can be depended upon.

Their guarantee is good, and their free trial plan is a fair method of selling goods.

The Hawkeye Special 100-Egg Machine sells for $12.00.

Owing to the fact that the Hawkeye Incubator Company is a very responsible concern, we recommend to our readers that if they are contemplating buying an incubator, they should most certainly send and get the Hawkeye Catalogue and also the special catalogue on the Hawkeye Special before they buy the other machine, as these two books have a lot of useful information in them regarding the successful raising of poultry, besides giving prices and descriptions of the different incubators and brooders manufactured by the Hawkeye Incubator Co. A postal card to the concern will bring these books at once. In writing, address the Hawkeye Incubator Co., Box 28, Newton, Iowa.

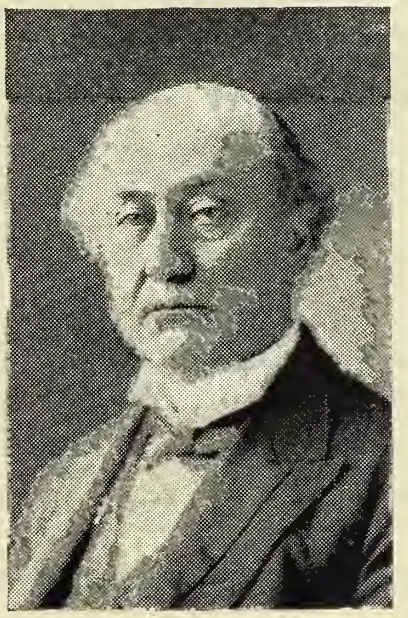
A NEAT PUBLICATION.

The Fruit-Grower recently received a copy of a little magazine, "Among Ourselves," which is published by Montgomery Ward & Co., Chicago, for circulation among the firm's employes. This is a very neat publication, and very interesting in its contents. Montgomery Ward & Co. employ several thousand persons in different departments, and this magazine is intended to help to make these employes more efficient and to give them more of a personal interest in the work of th firm. This is a most commendable move on the part of the firm.

One thing which was impressed upon us by this first isue was an article giving names of some of the employes who have had years of service with this firm. Many of the employes have been with the firm for upwards of twenty years, and now occupy positions of importance. Perhaps this faithfulness and loyalty on the part of the employes, and their reward by the firm, is accountable for much of the success of the firm. Certain it is that any firm which has such a strong hold on its employes is prepared to serve its customers better, for every employe will feel a personal interest and a personal pride in his work.

This new magazine is one of the best things of the kind we have seen, and it cannot fail to result in much good for the firm and those connected with it.

No man should let as good a paper as The Fruit-Grower slip by him, at the price of its subscription.—M. C. Beam, Alton Park, Tenn.



An Article on Wills and Will Making by no less an authority than an Associate Justice of the United States Supreme Court, Hon. David J. Brewer, is one of the important features announced to appear in the Youth's Companion during 1905. This is but one of some fifty similar contributions by men and women who are experts and authorities in some special branch of knowledge. Besides these there will be seven serial stories of the widest variety and interest, seven tales by Jack London of adventures of the Fish Patrol with the pirate fishermen of San Francisco Bay, two hundred and fifty short stories by the cleverest and most popular of American writers of fiction, all in addition to some thousands of anecdotes, fresh bits of humor, character sketches, poems, notes on current events and happenings in the world of nature and science, the weekly article on the care of the health, children's page, and so forth. The Companion "Carnations" Calendar for 1905 given to every new subscriber for 1905.

STUDEBAKERS PRIZE-WINNING EXHIBIT.

Among the exhibits at St. Louis, perhaps none attracted more attention than that of Studebaker Bros. Mfg. Co., South Bend, Ind. This was so for two reasons: First, because the name of Studebaker is known everywhere, and all those persons who saw the exhibits felt a personal interest in and acquaintance with the exhibit; second, the exhibits in themselves were worthy of the closest inspection. It is not to be wondered at, therefore, that this exhibit received the grand prize, the highest award. The award covered the well-known Studebaker wagons, for city or farm use, and also the different styles of harness and other accessories which are manufactured by this firm. The winning of this prize by the Studebaker goods was but continuing the line of victories which have been won at not only every exhibition of this kind, but also in the good will of the people generally.

THE "ACME" PULVERIZING HARROW.

The Fruit-Grower has received a copy of the catalogue of D. H. Nash, Millington, N. J., manufacturer of the Acme harrow. This harrow is used on a great many fruit farms, and it would be used on a great many more of them if the owners but knew of the good qualities of this implement. The Acme, in the first place, is not a plow. But it is a pulverizing harrow, clod crusher and leveler par excellence. By its use one can keep the soil in perfect condition, free from weeds, and with the dust mulch which is so much desired. It is so constructed that it can be extended, to work under the limbs of orchard trees, while the horses work out in the open. This makes the Acme especially suited to the cultivation of orchards, etc., but it can be used anywhere on the farm, in the preparation of a good seed bed, in the maintaining of a perfect state of cultivation. It does its work quickly and well, and where it is used properly there will be no complaint of weeds getting ahead of the farmer, and the soil will not be allowed to bake or form a crust.

The Acme catalogue tells all about this and it will be sent free to all who apply for it. Remember the Acme can be shipped from Kansas City, Chicago and other convenient points. For catalogue, address D. H. Nash, Millington, New Jersey, mentioning The Fruit-Grower.

THEY WANT TO SHOW YOU.

The Page Woven Wire Fence Co., Adrian, Mich., has long claimed that it used a very good quality of steel wire in the manufacture of its wire fencing. As proof of this fact, photographs have been submitted, showing the fencing put to all sorts of tests, through which the fencing has come uninjured. But now the Page Company has another plan to demonstrate the truth of its claims. It has a lot of paring knives made from the No. 7 steel wire used in its fencing, and offers to send one of these knives free to anyone who will ask for a catalogue. The Fruit-Grower has received one of these paring knives, which certainly bear out all the claims the company has made for the quality of wire used in its fencing. The knife is made from a piece of wire flattened, and well illustrates the quality of the steel. Readers of The Fruit-Grower who need wire fencing of any kind should send for the Page catalogue, and secure one of these knives showing quality of steel wire used. Address Page Woven Wire Fence Company, Box 3218, Adrian, Mich.

Another evidence of the continued growth and prosperity of that well-known firm of commission merchants, Coyne Bros., 161 So. Water St., Chicago, is the announcement of a new addition to their staff. The business of their Butter, Egg, Poultry and Veal department has reached such proportions as to require the undivided attention of an experienced man to look after the correspondence, posting, etc. They have secured such a man in the person of Chas. E. McNeill, who has spent over twelve years in the business and knows it thoroughly. Mr. McNeill was with Coyne Bros. for three years, when they first started in business, going from them to one of the largest poultry and egg houses of Chicago, and now returns to his old employers. He was secretary of the Chicago Butter and Egg Board for two terms, has a large acquaintance on the market and in the country, and will undoubtedly prove quite an acquisition. This department will now be pushed stronger than ever, and shippers of these goods will do well to get in touch with the house and learn what they can do for them. They will extend every accommodation possible in the way of paying reasonable drafts on bills of lading, loaning coops, etc.

ICE HARVESTING MADE EASY.

The John Dorsch & Sons advertisement, which appears on another page of this issue, fully describes the Dorsch all steel ice plow, etc., which is manufactured in five different sizes, each cutting and marking two rows at a time. The Dorsch plow is as complete an implement of its kind as modern ingenuity and experience can make.

A complete and fully illustrated Catalogue, just issued, will be mailed free, on request to any reader of this publication who writes to John Dorsch & Sons, 258 Wells St., Milwaukee, Wis.

STARK TREES BEAR FRUIT

A Record of 80 Years

Is Behind the Reputation of

STARK BRO'S NURSERIES & ORCHARDS Co

Capital Stock 1,000,000--all paid up

GENERAL OFFICES, NURSERIES and PACKING HOUSES, LOUISIANA, MO.
BRANCH NURSERIES: Starkdale, Mo. Fayetteville, Ark.
Portland, N. Y. Dansville, N. Y. Atlantic, Iowa

APPLE: An immense stock, perfect trees, both 1-yr. and 2-yrs. old. We are sole owners of BLACK BEN (Trade Mark) now acknowledged and recognized to be not only **distinct from Gano** but **superior**—the best apple of the Ben Davis family; and KING DAVID (Trade Mark) which **surpasses** Jonathan and Grimes Gol. in beauty and quality. Also CHAMPION (Trade Mark), DELICIOUS (Trade Mark), SENATOR (Trade Mark), L. RASPBERRY and all leading commercial sorts.

PEAR, STANDARD: Our stock includes such sorts as FAME, ALAMO, OZARK, LINCOLN (true Lincoln of Illinois,) etc., all valuable additions to the pear list. Also all tbe best old sorts such as BARTLETT, KIEFFER, GARBER, SECKEL and others.

PEAR, DWARF: DUCHESS, ANJOU, HOWELL, FAME, BARTLETT, etc.

CHERRY: One of the surest crops that can be grown and one that always brings good returns. We have a splendid stock of DYHOUSE, EARLY RICHMOND, **true** MONTMORENCY (the best of all), SUDA, WRAGG, GER. OSTHEIMER, etc.

PLUM: A full assortment. **GOLD** (Trade Mark) which bas proved of wider adaptability than any other plum; GONZALES (scored 98 points in competition at World's Fair); Burbank's latest products—COMBINATION, LAST, FIRST; and such well known sorts as ABUNDANCE, BURBANK, WILD GOOSE, LOMBARD, RED JUNE, WICKSON, SHIRO, CLIMAX, SULTAN, DAMSON, POOLE PRIDE, etc.

PEACH: The largest and finest stock in the U. S. Our leaders are ELBERTA, BELLE OF GA., GREENSBORO, CARMAN, ALTON, ELBERTA CLING, KRUMMEL OCT. We offer all the new introductions of value such as EARLY BELLE (Hiley), ARP B'TY, EDGEMONT B'TY, FRANCES, LATE ELBERTA, OCT. ELBERTA, WADDELL, KLONDIKE, MAY LEE Cl'g, CHILOW Cl'g, RED BIRD Cl'g, and the **hardy Neb. productions,** RUSSELL, WOOLSEY and WRIGHT.

MULBERRY: If for no other reason, plant a few to attract birds from other fruits. We offer the splendid new sorts, ABUNDANCE EVERB'G, MONARCH WHITE, as well as BLACK ENGLISH, DOWNING, HICKS, NEW AMERICAN.

QUINCE: VAN DEMAN (Trade Mark), MEECH, MO. MAMMOTH, ORANGE.

APRICOT: SUNRISE, SUPERB, E'Y MAY, MOORPARK, ROYAL, ALEXANDER.

GRAPE: Our vines are grown in the celebrated Grape Belt, Chautauqua Co., New York which produces the very finest. A complete assortment of 1-yr. and 2-yr. vines including HICKS which far excells Concord—ripens earlier, better quality, better grower, better bearer; and STARK-STAR (Trade Mark), "an important addition to the Grape list, filling a place occupied by no other." **We are prepared to meet all competition in quality, grades and prices.**

SMALL FRUITS: FAY, CHAUTAUQUA, LONDON MARKET, POMONA, RED CROSS and VICTORIA Currants. HOUGHTON, DOWNING, JOSSELYN, SMITH and PEARL Gooseberries. CUTHBERT, CARDINAL, CUMBERLAND, HAYMAKER, KANSAS, KING, LOUDON, MILLER RED, THOMPSON and THWACK Raspberries. BLOWERS, E'Y HARVEST, EARLY KING, ILLINOIS (Trade Mark), KITTATINNY, MERSEREAU, SNYDER, STONE HARDY, TAYLOR and WILSON Blackberries. AUSTIN, LUCRETIA and PREMO Dewberries.

SHADE & ORNAMENTAL TREES: WHITE WEEPING BIRCH, SILVER MAPLE, NORWAY MAPLE, CAROLINA POPLAR, CRIMSON-LEAF PLUM, ROSE-TREE of CHINA, BECHTEL and PARKMANNI DBL-FLOWERED WILD CRABS.

BUDDED LILACS: Botb single and double. Colors, pure white, light and dark purple, purplisb red, rosey red, satiny rose, etc. Every garden should bave one or more of these superb sorts. Far superior to the old fasbion lilac.

SHRUBS: HYDRANGEA, SNOWBALL, SPIREA VAN H., HONEYSUCKLE, etc.

ROSES: BALT. BELLE, BARON PREVOST, CRIMSON RAMBLER, GEN. JACQ., MME. PLANTIER, QUEEN OF PRAIRIES, RED MOSS, YELLOW RAMBLER.

SEEDLINGS & STOCKS: We offer a fine lot of APPLE SEEDLINGS, Iowa grown from Vermont Seed. Tbese not only give the best stands but grow the tbriftiest, cleanest, most perfect blocks of apple trees practically free from Crown Gall. In PEAR SEEDLINGS we offer French Imported, also some extra fine Japanese; CHERRY SEEDLINGS, QUINCE STOCKS, PLUM SEEDLINGS.

ROOT GRAFTS we are prepared to furnish in any quantity, either whole-root or piece-root. Our men are experienced and we guarantee perfect workmanship.

"FACTS ABOUT BLACK BEN."—Officers of the Mo. Horticultural Society and members of the Black Ben-Gano committee have acknowledged the society in error and a great wrong committed. We will send FREE on request a booklet giving much information of the methods and inside workings of the Society for the last several years—interesting reading.

STARK FRUIT BOOK, "WORLD'S FAIR FRUITS," shows in natural colors and accurately describes 216 varieties of fruit. Send 50¢ and we will send the book, post-paid, and a REBATE TICKET permitting its return within 60 days when the 50¢ will be refunded. Or the Rebate Ticket is good for $1 part payment on a $12 order for trees.

WE PAY FREIGHT on Orders of $12 and up, Box & Pack Free

The Western Fruit-Grower

An Illustrated Monthly Magazine For Progressive American Farmers.

Volume Sixteen ST. JOSEPH, MISSOURI, JANUARY, 1905. Number One

Missouri Horticultural Society

The forty-seventh annual meeting of the Missouri State Horticultural Society was held at Neosho December 20 to 22, in the hall of Scarritt Collegiate Institute, which had been beautifully decorated for the occasion, with southern smilax and bitter sweet.

Neosho forms a part of the greatest strawberry growing district in the world, and unusual local interest was shown in the meeting. Fruit growers from all parts of the state were in attendance; also delegates from Illinois, Kansas and Arkansas. About 750 plates of fruit were on the tables, giving evidence, if any were needed after the great display at St. Louis, that Missouri does not recognize any "failures" in fruit growing. Apples of the crop of 1903 were shown in almost perfect condition. All of the present officers were re-elected for the ensuing year and are as follows:

President—Dr. J. C. Whitten, Columbia.

First Vice President—C. H. Dutcher, Warrensburg.

Second Vice President—W. G. Gano, Parkville.

Secretary—L. A. Goodman, Kansas City.

Treasurer—W. T. Flournoy, Marionville.

The office of third vice president, which was the most honorable gift within the power of the society, was changed by unanimous vote to "honorary vice president." This office was created for, and first held by the late Samuel J. Miller, as a token of appreciation of long years of service and the affectionate regard in which he was held by the society. He held the office during the remainder of his life, and was succeeded by C. W. Murtfeldt, whose death last summer again left the office vacant, and at this meeting the honor was bestowed upon Norman J. Colman, who is regarded as the father of the society, having helped to organize it in 1859 and forty-five years given it his loyal support.

A resolution was passed relating to a proposed amendment of the present statutes regarding the South Missouri Experiment station, asking that only practical fruit-growers shall hereafter be appointed upon the board of trustees. This resolution was passed two years ago, but got laid over and was called up and re-enacted by unanimous vote of the society.

The committee on obituary gave a touching tribute to the memory of Charles W. Murtfeldt, who was a member of the society for many years, and widely known throughout many states. Of high character, and deeply religious, his work will go on for many years.

The program and discussion were practical covering nearly every phase of fruit growing. The welcoming address by Mayor Lamson, gave special emphasis to the educational features of horticulture, as practical lessons are demonstrated with the work of each day. He believes in organization, with the best business men at the head, thus placing the growers' products in best possible shape for marketing. J. W. Graves, on part of the fruit growers of the community, welcomed guests to the city and gave an account of the rapid growth and improvement of this industry in the state, paying eloquent tribute to the pioneers of horticulture.

In the response, President Whitten said he would not have us think that the commercial success of fruit growing is all there was to work for, but the benefits derived in an artistic and esthetic way are well worth striving for. The profession of horticulture should contribute much to home life, in this country of ours where "home" means so much. House surroundings, grounds, orchards, and fields are all embraced in that word. The manner of home in which the young are reared, materially determines what kind of a man the boy will become, and we cannot too strongly emphasize the importance of home life and surroundings.

E. H. Favor, from the horticultural experiment station at Columbia, spoke on spraying, and said, in part: "The grower of today never expects to get much from his orchard without spraying to destroy insects and fungi which so seriously interfere with the health and productiveness of the tree. Liquid sprays are the most common, though many mixtures of later years that may be applied dry, are being tried, the ease of application being its greatest credit. Experiments with both liquid and dust are still young, and we have much to learn. Have arrived at some conclusions, but not of great importance as yet. Experiments at Columbia tried new dust spray, but had some trouble in preparing compounds."

Dr. Bird's demonstrations last December, not being considered practical in a large way, requiring too much time to prepare, more rapid methods are being found, and a bulletin will be issued giving results. In special work last year the liquid spray gave a larger per cent of perfect fruit. Growers should not stop spraying, even though scab has formed, as continued work would kill much fungus growth and show good results in succeeding years.

"Culture in the Home," by Mrs. Asa Chandler of Randolph, was a beautiful tribute to home influence, and a plea for more pleasing surroundings. Only cultured homes can supply the proper environments of youth, and the necessary requirements are, first, order, and would study and follow nature. Then comes cleanliness and system as co-necessities. Would have plentiful supply of good books and magazines, with but little of daily news; horticultural journals supply one very best line of reading.

"Educational Aspects of Fruit-Growing," by Prof. S. A. Hoover of Warrensburg, was very interesting, naming horticulture as first work given into hands of man. We work first for our necessities, then for our pleasures, and fruit-growing combines both. Ought this not to be taught in the public schools? We teach many things never used by ordinary man, and leave out those things both in daily use and necessary for his welfare. Public and high schools are not the place to train specialists, but in the university. He made a plea for more care in the selection of books placed in the hands of the young, whose absorbing minds thus form many undesirable ideals. Just as well give something that shall be of real use in the future and leading to purer lives. Commercialism is the great factor in civilization and should not be condemned. Then the esthetic value of fruit growing is a great factor in education as well as the ethical.

"The Apple Orchard" was the title of a paper by A. T. Nelson of Lebanon. He would start with one and two-year trees. It is as necessary to prune the root as the top. Prune to five or six inches, cutting off all bruised roots. Prune top, leaving center branch, conical shape, and cut out forked limbs, thinning if necessary. After planting do very little pruning for three or four years, cutting out only forks and broken limbs. Have 18 to 20 inches from ground to lower limbs. Soil conditions have much to do with pruning. Cultivation begins by getting ground in good condition, then keep it so, not only to grow the trees but for fruiting. A loose, friable condition of the soil will counteract drouth. Keep fruit growing, and to some extent prevent fruit from falling. He plants young orchards in corn; at first five rows between tree rows, dropping off a row at a time until at seven years only have three rows, thus leaving plenty of room between corn and trees for cultivation. Corn acts as shade in summer and shelter in winter.

"Treatment of Orchard After It Comes Into Bearing" was discussed by D. Lowmiller of Parkville. A good orchard should be started right; much depends on selection, and we need to adapt trees to soil, climate and special planting. Some years we get knocked out in spite of best efforts, but if orchard is in good condition it will stand a season of adversity. He finds liquid spray far superior to dust; adheres better and can reach each part better. Use Bordeaux and paris green; good sprayer and thorough work leaves orchard looking like it was painted. Spray first before buds open, then just when calyx closes. Cultivate till middle of season, six or eight times, plowing to and from trees alternately to keep ground level.

S. Y. Thornton of Blackwater has hill orchard land. After trees are 8 years old he seeds to clover and pastures with hogs. Finds it of great advantage after trees are large enough so they won't bend when hogs rub them. When hogs begin to eat apples from trees take them out and return after picking season, leaving in all winter. Mows clover and cuts out in tree row with scythe, and doesn't like to delay this part of the work on account of weeds seeding. Mow later in season, and if machine knocks off apples, use a scythe. Disc or cut in clover and let it reseed itself.

Captain Lincoln, of Arkansas, believes in clover, cultivating, good trees and doctoring. With a load of barnyard manure and ashes mixed he goes through the orchard, doctoring every tree that looks sick. At 12 years old he would like to have limbs coming out horizontally from trunk, some 4½ to 5 feet from ground.

Mr. Barnes, of Kansas: "Judge Wellhouse says it will not pay to pick apples from over twelve-foot trees. After that height, it pays best to shake off."

Mr. Francis: "Pruning is the one thing within control of man. We can put limbs where we want them. We should not ridge up trees. Never cut out center stalk. Prune to check growth and force fruit buds; keep sun from body in winter time by setting up a board. Sun does no harm in summer, when protected by foliage and sun is going straight over head."

Colonel Love would prune whenever tree shows need of it. No bad effect is seen when limbs do touch the ground. No difference in color of apple, and after picking, limbs rise to former condition in a few days.

Mr. Mendenhall, Illinois: "Prune when handiest, which with us is February and March. Pruning takes time and study. Watch cross limbs closely and cut smooth, coating over the wound to exclude air."

General discussion endorses Clark's Double Cutaway Harrow as one of the very best implements in the orchard.

Colonel Evans said the general tendency is towards more thorough cultivation; can double profit on all our orchards with right care. Cultivation of tree means washing, protecting, etc., as well as cultivating the ground around it.

N. F. Murray believes more failures come from lask of study o findividuality in trees and soils. He prefers low-topped trees; don't believe it pays to renovate old trees; cheaper to grow new orchard.

The question was asked as to what is gained by turning the soil? Prof. Whitten said turning the soil kills weeds, airs soil, pulverizes and slacks soil, takes in moisture better, lets air down to roots, stores up water and holds it better and improves mechanical condition of soil in every way. Turned at right time destroys many insects and fungi by burying them deep. The warming of soil is a great advantage. Roots should begin growth soon as the top does so. If not, the top lives on food stored up in buds, and when that is exhausted becomes weakened.

Mr. Hitt, Koskonong: "We grow peaches, having one of the best soils for the purpose. We never turn the soil on account of its getting so hard. It is impossible to use a Cutaway on account of stones. We hauled 3,500 loads of stones off 20 acres."

Secretary Goodman said we must not lose sight of the fact that we must have rotation in cultivation. On much of this Ozark land thorough cultivation alone would soon burn out the soil. He plows all winter. Let weeds grow where no other crop is grown, to act as shelter in July, August and September. Rotate with winter plowing, summer fallow, corn, clover, etc.

G. T. Tippin, Nichols, has not been an advocate of spraying, but must admit success comes more often to those who spray. Canada is using a formula, endorsed by the government, with great success. Michigan and New York growers are also using it. This is the formula: 20 lbs. blue vitrol, 1 lb. white arsenic, 1 lb. paris green, 2 lbs. sal soda, 87 lbs. lime, 250 gallons water. Prepare arsenic by boiling one pound arsenic with two pounds salsoda in two gallons of water for 45 minutes. Dissolve vitrol and strain into tank filled two-thirds full of water. Slake lime in barrel, adding water for other third. Strain this through wire screening into vitrol. Keep well agitated while adding paris green dissolved in water. Add arsenic solution and again agitate. Use soon as made. After standing two days the mixture is considered valueless. Spray apples, first as buds swell, second just before buds open, third when blossoms fall.

Is Your Subscription Paid Up?

We hope that all members of "The Fruit-Grower Family" whose subscriptions are not paid up will send remittance by February 1st. The tag on the wrapper in which the papers are mailed will show the time to which you are paid according to our books. If you find that date is not correct, let us know at once and we will make the necessary change.

On February 1st we shall mail notices to all readers whose subscriptions expire with the April number, 1905, as well as to those who are in arrears, and if payment is made **before February 1st**, you will save us a large amount of work in the subscription department.

The Fruit-Grower for 1905 will be worth **at least a dollar** to any one interested in horticulture, but the price is only 50c a year or 3 years for $1.

If you will send the names of four new subscribers with your renewal, we will enter **all five names** one year for a dollar. So you may renew on this basis for twenty cents—less than the cost of the white paper. This offer will hold good for a short time only, or until we reach the 50,000 mark. As a friend of The Fruit-Grower, will you not put forth an effort to send at least one "block of five?" Remit dollar bills, postoffice or express money order, bank draft or stamps, **at our risk.**

If you want your paper discontinued, notify us by postal card. This will cost you only one cent, and your paper will be stopped at once. Our policy for the present is to continue the paper till ordered discontinued. If you desire paper to stop when your time is out, notify us and the letter "S" will be placed after your date tag, signifying that paper will be stopped when time is out.

But The Fruit-Grower is going to be so good this year that you cannot afford to be without it. So we ask that you kindly remit if you are in arrears. If you are not in arrears, send a "block of five" anyway and thus contribute to "a prosperous new year" for The Fruit-Grower. We wish all of our readers a most prosperous season.

The FRUIT-GROWER COMPANY, St. Joseph, Mo.

Need not fear burn ng foliage if properly made and agitated.

Secretary Goodman: "Hardly can see how one could go to all that work in making quantity enough for large orchards."

Champions of dust spray claim there is no difference between liquid and dust processes except in conveyor, one being water, the other lime. They claim dust is cheaper and much easier to apply, with results just as good.

Not considered wise or desirable to spray when in bloom. Liable to injure tender parts of the bloom, and injure bees as well.

Rev. John Brereton of Springfield had a fine paper on peach seedlings. He would select those fruits having size and quality, etc., and retain them even though "seedlings." Believe each locality will have a variety best suited for it, which we should foster, and not rush into unlimited planting of any variety because of its name. Selection is pretty sure to give us something we can rely upon. Let Missouri stand up for her own productions.

W. G. Gano on "Peach Growing" calls attention to the "loess" formation of soil in his part of the country, that is especially adapted to fruit growing of all kinds. Recent culture of peaches on high Missouri River bluffs surprisingly successful.

"Peach Growing in Southern Missouri" was a paper by J. W. Hitt's sons, of Koshkonong. This town was named after a noted lake in Wisconsin, and is an Indian name, but now the name makes people think of peaches. The industry is still in its infancy, all the orchards having been set in the last ten years. There are now some 5,000 acres, almost entirely Elbertas. They prefer ground that has been cultivated two to four years. If new ground is used, break and cross-break it with double team, using a bull-tongue and coulter. It is a slow process, but does the work better in our rough country than any other method. We trim roots closely, but not to a straight stick, and dig and set tree at same time, using a pick-mattock for the work. First two years cultivate thoroughly until middle of summer, after that time give one or two cultivations, according to conditions, after crop is set. Growing the peach is the smallest part of the successful management of a large orchard. Picking, packing and marketing so as to get profits are more difficult. Hitt's Sons use a six-basket carrier, but are not fully satisfied. Some talk of trying bushel baskets next season. Marketing is the hardest problem of all, and growers are looking forward to the time when we will be compelled to devise a cheaper method of handling the crop. Transportation rates bar us out from many points, and some remedy is needed. Trees have gone into winter with a good supply of fruit buds, and bid fair to yield a fine crop."

J. C. Evans made answer to the subject: "Is the Cycle of Bad Years Complete?" first defining the word cycle, and then deducing reasons to show that our "off" seasons had about passed the limit and good times were approaching to gladden the heart of the fruit-grower.

Mr. Louis Erb, Memphis, presented an able paper on "Transportation." He said in part: "No matter how much progress the grower may have made in producing higher grades and larger quantities of fruit, but little benefit can be gained without proper market for it. Nothing is gained by simply denouncing transportat'on companies. Often the blame lies in delay in transit, or profits gone in some other way. My experience has been the railroad companies are not unfriendly to fruit-growers, and are generally inclined to encourage the industry. Interests of railroads and fruit-growers are largely mutual. We should have same privileges of watermelon growers: a reasonable through rate on full cars, with privilege of stopping off and supplying the needs of small towns. Proper distribution and cheaper transportation is the great question."

Mr. Young, of the Missouri Pacific, spoke on the same subject. He said there was a happy medium where fruit-growers and railroad companies could meet. When growers have grievances it is necessary to go to the proper people and let them understand what is needed for mutual benefits. Railway companies are beginning to appreciate the great value of horticulture as allied to their own interests.

"Growing and Marketing Strawberries," by L. J. Hartman, St. Joseph, gave the varieties best adapted to that section. Choose southern slope for early, northern slope for late when possible, but plant anywhere rather than not plant at all. Best soil is timber land well cultivated. Mr. Hartman prefers to plow late in fall, harrow in spring and plant in rows 3½ to 4 feet apart with plants 12 to 15 inches in the row for horse culture. Would not set plants on windy day. Plants need careful nursing till they start growing.

"Experiences in a Strawberry Field" was given by H. G. Richardson, Neosho. He prefers a row two feet wide. Thin out weak plants in fall, leaving them stand 6 to 8 inches apart over the row. Fewer varieties are easier to handle than many. He has been forced to discard Warfield on account of smallness. Pickers won't pick them. Grading of berries is done in the field by the pickers.

"Marketing the Commercial Crop" was discussed by Dr. E. L. Beal, Republic, who considers this the most important part of the strawberry business. Results so far are not satisfactory. Commercial shipments must have large berries, uniform in size, good color and firm enough to carry well. They must be picked properly and honestly crated. The present plans of marketing are still faulty, but the best so far are the associations that govern themselves by uniform rules, work in harmony and ship carload lots together. But the twenty or more associations in one locality still work to disadvantage. It is of the highest importance that all the organizations get together and market their entire product from one fountain head. Have tried to bring this about, but so far failed, but must keep trying. Excessive rates need adjustment. Ordinary mileage rate for refrigerator cars, with reasonable price for ice, would make a wonderful difference in width of gap between market price and net returns. Get all associations under one head, and sell on track is the only rational method of disposing of the crop.

H. S. Wayman of Princeton made a strong argument for more and better home planting and education along horticultural lines in school, as did J. W. Robinson of Springfield, both papers being valuable.

Mrs. G. E. Dugan of Sedalia, on subject of "True Value of Flowers" places flowers as one of the greatest gifts to mankind, lifting us into a higher plane of life. They have a higher office than the mere practical value, commercial value being the smallest part.

C. A. Chandler, Kansas City, read a paper on "Landscape Gardening at the Fair," giving valuable information of the gigantic undertaking so successfully carried out through the past months, and which was the wonder and admiration of the world.

Vice-President Dutcher read a history of the society, dating back to the year 1859. Of the original members of the society only two, Messrs. Norman J. Colman and J. C. Evans, are now living. This history was very interesting, covering as it did the period of the war, during which time the society held its regular meetings. The society is forty-five years old, and the fact that the present meeting is the forty-seventh is accounted for by the the fact that two meetings were held in a year on two different occasions.

Secretary Goodman's report was an important one, covering many details of the work done at St. Louis the past season. No more remarkable year in the history of the society. Valuable lessons and new ideas were brought out by the fair, and the work there gave general satisfaction. Missouri got fifty medals more than any other one state. Owing to the limited crop in 1903 and 1904 extra expense and work were necessary in making exhibits. Missouri received three grand prizes, one for large and complete exhibit, one for beauty of installation, and one for educational features. Also 23 gold, 157 silver and 199 bronze medals, 382 in all. All awards were given on a scale of points. The finest award was that given by the people, who gave Missouri first place. There were shown 2,400 jars of fruit. In maintaining the exhibit there were used 1,200 barrels of apples, crop of 1903, and 400 barrels, crop of 1904; 300 bushels of peaches, 64 varieties; 1,000 plates of grapes, 124 varieties; 1,000 plates pears, 36 varieties; 1,500 plates cherries, 12 varieties; in all 650 varieties of fruits and 48 varieties of nuts. Much variation was noted in fruit from different localities in the state.

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The Berries are 3 inches long by 3½ inches in circumference; they will ship 1,000 miles easily; acres and acres are being planted in California for cannin purposes, and plants are in great demand. Send for Photo and Description and Prices. Ready to ship from January to April.

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We want you to get our prices on Nursery Stock before you place your order. Prices cannot be published in this paper, but send us your name and address, and if convenient state about what your needs will be, and prices will be quoted low enough, considering quality of goods, to secure your trade. We pay freight and guarantee satisfaction. No nursery establishment in the West is better equipped for the careful rapid handling of mail orders.

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Write us and give us the opportunity to "show you." Write today for Catalogue and Price List.

The New Haven Nurseries

NEW HAVEN, MISSOURI

Northern Missouri grew Yellow Transparent, Early Pennock, Jeffries, Duchess and Wealthy apples which were notable in size, color and quality. Southern Missouri had Sops of Wine, Benoni, Lowell, Maiden Blush and Fulton, as specially adapted to planting on high uplands, river bluffs and tops of mountains, giving fine size, quality and color. For early fall, Jonathan and Grimes Golden were shown. Then came York, Gano and Ben Davis, followed by Black Twig, Winesap, Clayton and Ingram; new ones, Nixonite Payne's Keeper, Hopewell and Givins; these should be tried in a general way. Gano proved best in storage, and fruit from crops of 1901-04 kept and were all shown on tables throughout the month of November.

The special finance committee, appointed last June to examine the special fund of the society which was on deposit in St. Louis, reported. The report showed that the money was deposited several years ago and has been drawing interest since that time. No withdrawals were made from the fund until December 21 of 1903, when $100 was spent for chairs and desk for use in the Missouri horticultural exhibit at St. Louis. Later on, other sums were drawn from the fund in the way of providing help to maintain the exhibit at St. Louis. The fund is in charge of the treasurer of the society, and in the annual report of Treasurer Flournoy the condition of the fund was reported in detail, as well as the general fund of the society.

Some of the "Suggestions Made for the Good of the Society" by N. F. Murray, of Oregon, Mo., were: Questions of any nature not easily agreed upon should be thrown out entirely and left to the verdict of the people. We need a home for the society and a library for collections, and the speaker mentioned Columbia as the most suitable place. We should add more good horticultural books to the library. Mr. Murray gave enthusiastic support to the horticultural industry throughout the state, specially emphasizing the Ozark region.

"Ozarks for Fruit" was discussed by G. T. Tippin, who believed firmly in the future greatness of the Ozarks as a fruit producing region. This assurance is based upon success already obtained and the multiplied advantages that are at hand. We are surrounded with the natural elements of success, but awaiting the application of intelligent selection of soils and varieties, the culture and method best suited to the environments of this region. The great advantages to come to the Ozarks from this industry will be the rapid increase of population in Western cities, increase of railroad facilities, proper adjustment of freight and refrigerator rates, the thickly settling up of Ozark lands and the planting of diversified fruits upon smaller farms. He called attention to the pride we should take in the character of the fruit we grow and the marketing of it attractively.

J. A. Durkes of Weston, one of the most successful pear growers in the state, gave methods used in his orchard. Has had but one failure in many years, while apples failed four times in the same eriod.

The subject of grapes was opened by Louis Zellner of Granby, who is making a success in this line. A general discussion showed much variation, and in the northwestern part of the state this is one of the most certain crops. Mr. Zellner also proves that Southwestern Missouri can grow many varieties successfully, many varieties in other parts of the state rot badly, and some of those with many years of experience fail to make a success in commercial growing.

Mr. Erb believed we must depend largely on varieties with native blood in them for Southern Missouri. The Eaton grape was generally condemned.

On the last evening of the meeting Prof. Howard told how he is handling a new orchard which he is planting. Having to pay cash for all the work done, Mr. Howard was in position to give some figures as to the actual expense of planting an orchard where one must hire the work done. Part of the orchard was planted on upturned sod, and Mr. Howard now believes this was a mistake. To furnish trees for an acre of ground, to plant them, apply wooden wrappers, etc., cost $7.00, where trees were planted on sod ground. To do this same work on land which had been cultivated the year previous the cost was only $5.50 per acre. Mr. Howard said the actual planting of his trees had cost him about 85 cents per acre.

As to the cultivation of young apple trees, Mr. T. H. Todd would plant corn so that it could be cultivated both ways.

Mr. Chandler, from the Missouri Agricultural College, read a paper on fertilizing the orchard. He said stable manure was the best for this purpose, but for large commercial orchards this is not available in sufficient quantities. Fertilizers rich in potash are needed for fruit culture.

One of the interesting matters brought up on the last evening was by Mr. Young, of the Missouri Pacific industrial department. Mr. Young said that fruit culture is a good thing for railway companies, and they are interested in having the growers succeed in producing good crops. He believed the roads could well afford to make low rates for a horticultural meetings held along their lines, and recommended the appointment of a committee by the society to bring the matter to the attention of the industrial departments of the various roads. A suggestion was to ask the roads for a rate of 1 cent a mile for all members who attend these meetings, the membership cards of the members of the Missouri Horticultural Society to serve as credentials to secure this reduced rate. This proposition met with an enthusiastic reception, and an effort will be made to secure permanent low rates for the meetings of this kind.

The visitors were called upon for remarks, and all were loud in their praise of their treatment by the Neosho people. The local fruit shippers' association, and especially Mr. F. H. Speakman, were tendered a vote of thanks.

There were a number of other papers and much valuable discussion of various subjects for which we haven't space, all of which will be printed in the annual report early in the year.

Splendid vocal and instrumental music was provided by the people of Neosho, and the local horticulturists combined in their efforts to entertain the visitors, thus contributing much pleasure to the occasion. A. Z. M.

Praise From an Old Friend.

Some time ago The Fruit-Grower received a letter from an old friend, which is typical of some we are receiving now, in response to the little booklets, "The Evolution of an Idea," which we have sent out, telling the story of The Fruit-Grower. This letter is from T. H. Smallwood, Fort Scott, Kan., whose motto, as stated on his letterhead, is "Go Forward." Mr. Smallwood says

"Dear Friends: I have received the little book, 'The Evolution of an Idea,' and I think you people should be commended for your pluck and energy. I am proud of you, and glad you have succeeded in the way you have. I have always liked the Fruit-Grower and its pushers, from the very first copy of the paper I received. I remember this first copy I saw very distinctly. It was one which had a picture of a fruit-shipping scene on the title page. I remember the time I got up the first club of subscribers for The Fruit-Grower. Some of our folks were a little afraid to subscribe, for fear you would quit business before the year was up. But I guaranteed that I would return their money if this were to happen."

The Best Blackberry.

J. W. Austin, Pilot Point, Texas, (originator of Austin Dewberry) says: "The Kenoyer Blackberry obtained of you fruited last spring, 13 months after they were set out. It is, according to my judgment, the best very early blackberry I have tried during 26 years' experimenting, and I assure you I have tested many and tried hard to get the best. I would like to set an acre the coming season if price of plants is not too high."

Jacob Faith, Montevallo, Mo., (a life-long experimenter in fruits); "I feel it my duty to let you know that the Kenoyer Blackberry proves on my farm all you claim for it. Of over 30 varieties tested on my place, for profit the Kenoyer leads them all. It is a few days earlier than Early Harvest and one-fourth larger, which makes it a valuable market berry. I planted some where they were exposed to rust, but as yet there is no sign of rust on the Kenoyer."

What are you going to do about it? Why not write a card at once to F. L. Kenoyer, Independence, Kan., for description and prices?

I cannot think of raising fruit without The Fruit-Grower, and do not intend to try it, so inclose $1 for three years' renewal.—Albert F. Tenney, Ipswich, Mass.

I Offer the Utmost— A Dollar's Worth Free

You deposit nothing. You risk nothing. You promise nothing. There is nothing to pay either now or later. I want everyone, everywhere, who has not used my remedy to make this test.

For mine is no ordinary remedy. It represents thirty years of experiment—thirty years at bedsides—in laboratories—at hospitals. Thirty years of the richest experience a physician can have. I tell below wherein Dr. Shoop's Restorative differs, radically, from other medicines.

My offer is as broad as humanity itself. For sickness knows no distinction in its ravages. And the restless patient on a downy couch is no more welcome than the wasting sufferer who frets through the lagging hours in a dismal hovel.

I want no reference—no security. The poor have the same opportunity as the rich. To one and all I say "Merely write and ask." Simply say that you have never tried my remedy—for I must limit my offer to strangers—those who have used Dr. Shoop's Restorative need no additional evidence of its worth. I will send you an order on your druggist. He will give you free, the full dollar package.

Inside Nerves!

Sickness loses half its terrors when we strip medicine of its MYSTERY. For most all forms of sickness start in the same way. The nerves are weak. Not the nerves that govern your movements and your thoughts.

But the nerves that, unguided and unknown, night and day, keep your heart in motion—control your digestive apparatus—regulate your liver—operate your kidneys.

These are the nerves that wear out and break down.

It does no good to treat the ailing organ—the irregular heart—the disordered liver—the rebellious stomach—the deranged kidneys. They are not to blame. But go back to the nerves that control them. There you will find the seat of the trouble.

There is nothing new about this—nothing any physician would dispute. But it remained for Dr. Shoop to apply this knowledge—to put it to practical use. Dr. Shoop's Restorative is the result of a quarter century of endeavor along this very line. It does not dose the organ or deaden the pain—but it does go at once to the nerve—the inside nerve—the power nerve—and builds it up, and strengthens it and makes it well.

Simply Write Me

I do not ask you to take a single statement of mine—I do not ask you to believe a word I say until you have tried my medicine in your own home at my expense absolutely.

The offer is open to everyone everywhere, who has not tried my remedy.

But you must write ME for the free dollar bottle order. All druggists do not grant the test. I will then direct you to one that does. He will pass it down to you from his stock as freely as though your dollar laid before him. I am risking my business—my life work—my reputation. I am depending on your own honest opinion after your own test in your own home. I cannot profit unless my medicine succeeds. Could I afford this if I were not sure? Write for the order today. The offer may not remain open. I will send you the book you ask for beside. It is free. It will help you to understand your case. What more can I do to convince you of my interest—of my sincerity?

For a free order for a full dollar bottle you must address Dr. Shoop, Box 4361, Racine, Wis. State which book you want.

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Mild cases are often cured with one or two bottles. For sale at forty thousand drug stores.

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to the farmer who understands how to feed his crops. Fertilizers for Corn must contain at least 7 per cent. actual

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Send for our books—they tell why Potash is as necessary to plant life as sun and rain; sent free, if you ask. Write to-day.

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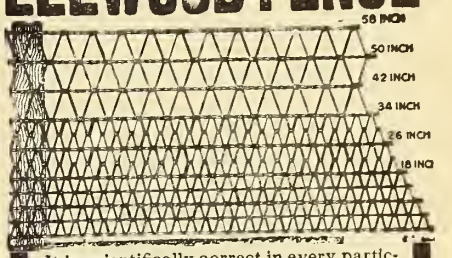

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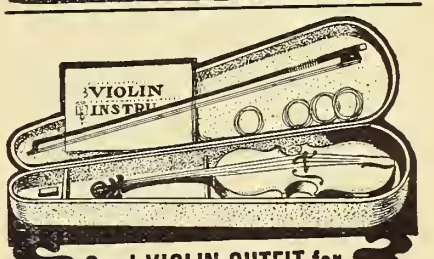

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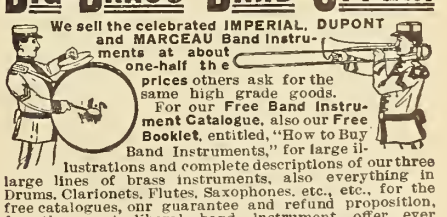

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Ohio Horticulturists Meet.

The thirty-eighth annual meeting of the Ohio State Horticultural Soc'ety was held in Chillicothe, Ohio, Dec-20-22, 1904. Early the first day people began to peep in the hall to see if there was anything doing or to be seen, and it didn't take long to convince all that something was doing, for there were several assistants from the Ohio Experiment Station arranging a fine display of 60 varieties of apples, all labeled, and some varieties in great quantities.

Prof. O. P. Kinsey of the Valparaiso (Ind.) normal school had on exhibition nearly a hundred varieties of apples from his farm in Harrison county, Ohio, and a cleaner, nicer looking lot of fruit would be hard to find, especially for a college professor, who can spend but two weeks on his farm in a year. All of it was labeled, described and recommended, or not, as the grower had found them in his experience. A nice typewritten card was placed on every plate with his apples, and some humor was mixed in with the descriptions, making the readers often laugh as they read the cards. That table was a good catch. About all the most popular varieties were in the collection, and some of the newer ones. At the close of the meeting he turned his collection over to the society, and they then turned it over to the local workers to dispose of as they thought best, and many people had the opportunity of tasting some varieties that were new to them. Dessert apples were more numerous than in most collections, and people must see to appreciate the advantages of such shows.

The station had samples from the Carpenter sub-station, showing Rome Beauty that had been sprayed alongside of some not sprayed, and to any one who would believe it he could not help being convinced it paid to spray well. The other largest exhibitors were Pres. W. W. Farnsworth and U. T. Cox and M. I. Shively, John Hurst and several others having several varieties of very nice specimens. It was the best show of apples ever put up at the state meeting, both in appearance and perfection, and was the most instructive. Several new seedlings and some new varieties of promise were shown, among them some fine specimens of the Ensee, a large well-colored apl of excellent quality just in its prime for eating. Many people had an opportunity of tasting it, and the verdict was the same in most all cases—a most delicious apple. Several plates of peaches which grew in the community were shown. Some fine pears, potatoes, turnips, squashes and corn were also on exhibition, and to complete the wonders was a large edible mushroom more than a foot in diameter, which resembles on the outside shredded wheat biscuits.

W. H. West had a very large display of his own grapes, grown just outside of Chillicothe, and they would convince any reasonable doubting Thomas that good grapes can be grown in Southern Ohio. The prices they bring would make northern growers rich in a short time, and grapes from the southern half of the state are out of the way two or three weeks before northern fruit is fit to market. The demand is good at from two to five cents per pound, and not enough grown to supply the best trade at less than three or four cents in any of the cities. The vines must be sprayed three or four times to insure against insects and the rot, both of which can be controlled by proper applications. Prof. Burgess reported a new insect that eats insides the buds and causes them to fall, and there has not been any remedy found for it yet, as poisons are not effective when sprayed on the outside of the buds. It has not even been named yet, but has been seen for a few years.

The reports showed that the apple crop was very light in the south part of the state, and a large crop in some sections of the north and east portions, and the price started low in the places of good crops and it is only fair yet, except for fancy eating apples. The peach crop was good in some sections along the lake and in the extreme south, and the prices were very satisfactory. Pears were fair to good crop, and the Kieffer outdid all the others in bearing and cut prices. A great many were sold as low as 25 cents per bushel, and some even less, while very few brought over a dollar even when well ripened. As it is one of the very best when canned and is classed as good when properly ripened, the growers should learn how to handle it properly so as to create a better demand and get fair prices. Most people think they are ripe when they look yellow, but that may not be correct. To eat, they should get soft before they are sold on the fruit stands. Plums were the largest crop ever grown in the country, and the prices not satisfactory except for the very early and the fancy grades for select trade. The large blue plums ripening late were the most profitable, such varieties as Monarch, Grand Duke, Arch Duke, Pond's Seedlings and some others. Such varieties as Lombard are not generally profitable now. Reine Claude is one of the best of the green varieties.

Mr. C. F. Hale of the Michigan Horticultural Society prefers plums on peach roots, thinking he can fight the borers better than cut plum sprouts that come up from the roots. He sprays the trees for both the curculio and the rot with the same solution that is generally used on apple trees. Some have injured Japan plums and a few other varieties by such sprays and recommend weaker solutions, especially for the later applications. The first treatment is with the copper sulphate solution, and most growers prefer two or three pounds to 50 gallons of water.

The small fruits were fair to good in most parts of the state, and prices were better than the average. Some fear is expressed for next season's crops, as the fall season has been so dry that the plants may not be as numerous and strong as usual. Growers think the outlook for raspberries in the future is good, and they are learning how to keep the plantations healthy by cutting off diseased canes and burning them and set only the healthy plants from new plantations. A difference of 126 degrees was reported from coldest to hottest in the year, and still there was a fair crop of fruit. Cold seemed to travel in streaks, as some places were much colder than others of the same altitude not far away. Peach trees were killed worse where the soil was deficient in humus and was without a mulch. A Crimson Rambler survived and bloomed by the side of a thermometer which showed 21 degrees below zero, so that does not show it to be too tender to stand the winter without protection.

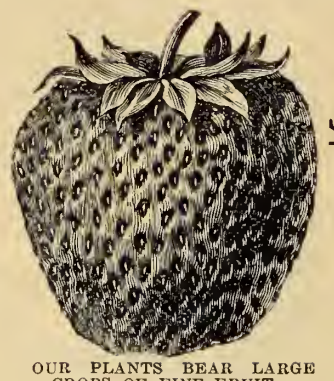
This is thought to be a good time for a grower who loves the work to set out a peach orchard, but the other kind of grower just as well save his money and time. It takes care now to make it a success, for the trees must be cultivated, pruned, sprayed and the fruit thinned, and then it must be picked, packed and distributed properly to bring best returns. For shipping in large quantities the yellow peaches are most desired, and the varieties recommended for Michigan are Early St. John, Ingold's Mammoth, Elberta, Smock, Salway, Kalamazoo. The same answer well for Ohio, but there are many other good varieties for local markets. Many of the trees died last winter, and only a few will be reset along the lake. The causes of dying were various, but where there was a light mulch around the trees all of them survived. Soil that was well supplied with humus had few dead ones, and it was questioned whether land without a cover crop froze so hard that they were winter-killed, or that they were in a weakened condition was the cause. It is a fact that growers must furnish something to make humus, and not cultivate year after year without it. Cover crops, manure or a good mulch to rot on the ground will prove beneficial.

Where large quantities of fruits, with the exception of apples, are grown it has been found helpful to have an organization and pack all the fruit in grades that will be standards in the markets and buyers can get uniform fruit all the time without the risk of getting all kinds in the packages, and it will sell more readily at an advance price. The grower's pack does not sell so well unless he has an established trade and a reputation for good fruit well packed. There is no reason why a railroad should not take a load of perishable fruit and allow the shipper to distribute it in several small towns along the route where a carload could not be used in one place. They have refused to do so for fruit shippers, but do such delivering for the meat packers.

The horticultural products of the state amount to $100,000,000, and yet the governor vetoed half the annual

Chattanooga Nurseries

Mid-Winter Announcement — Mid-Winter Announcement



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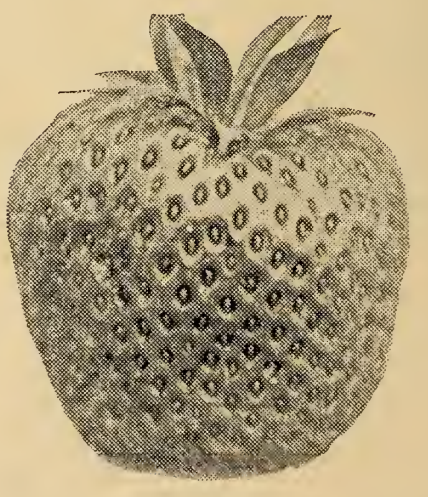

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appropriation of $1,000, so we must look for ourselves in the future. The president feared that the small grower would not look after his trees as the specialist does, and it may be that the presence of good fruit in the yard or home orchard will soon be a thing of the past unless the society and others interested keep the subject constantly before the people and teach them how to care for the trees so they can produce a home supply. If they do not grow it on the farm they will not have an abundant supply, and health often depends on a fair quantity of fruit for part of the food supply.

Mr. Houser gave the results of spraying for the codling moth at the Carpenter Station orchard. This report and several others are worth far more to the orchardist who wants to study for success w th his crops than the membership fee of $1.00, which entitles him to the annual report, to be had by sending to the secretary, E. M. Woodard, Willoughby, Ohio. The treatment of the different plots was from five sprayings down to a check without any spray. Some were treated with one solution and some with others. The worms were not very numerous, but it showed how successful was the treatment. The arsenate of lead in Bordeaux did not diminish its effectiveness. Arsenite of soda in Bordeaux was also effective, but not quite as good as arsenate of lead. The fifth application did not diminish the number of moths enough to pay for the last application, but if it had been badly infested with the moths it might have been different. The trees that received five applications lost one-third of the leaves, probably from the cumulative effects of the spraying. Would it not be best to make the later solutions some weaker? Some growers have done so without any bad effects. The most noticeable effects of the spraying was in the presence or amount of scab on the apples. They were almost worthless where not sprayed with Bordeaux, and the amount of scab decreased as the number of applications increased up to four. Where not sprayed with Bordeaux at all, the scab caused many of them to fall early in the season and the crop was very light as well as small, and the specimens were very knotty and imperfect. So to insure a chance of a crop the trees ought to be sprayed once before they bloom, and it is too often the case that a thorough job is not done, but the trees are gone over quickly and many spots are missed where the scab germs develop. Cover every twig, bud, leaf and even the trunk of the tree with the mixture, and some of the spray is sure to be wasted before every part is covered. Use more lime than is recommended and cut down the quantity of salt in the lime-sulphur-salt mixture used. A large per cent of the second brood of the codling moth lay the eggs on the leaves, so it is important that the spray covers the foliage to keep the moth in check. In view of these facts it looks like very late sprayings will be beneficial, through July and August.

Our bird friends were spoken of highly by Prof. Gossard of the Ohio station, and most kinds are beneficial in the orchard. They hunt worms, insects' eggs, and many hidden enemies of the fruit-grower, and live fat through the winter on them. Some of the worthy birds are chickadees, wrens, nuthatches, blue birds, woodpeckers, flickers, warblers, and even the robin may be helpful in the orchard, but is usually a nuisance in the berry patch. The English sparrow is no good except to kill locusts when they are abundant. Wheat boiled in water with strychnine and molasses will kill them by the colony. When an opening is left in the upper part of the chicken house the sparrows will go in there to roost, and at night close it, go inside with a lantern and paddle and kill all of them easily. To induce useful birds to roost in the orchards, meat scraps and other food for them may be tied in the trees and they will stay there a good part of the time. While there they will find many enemies of the fruits. Even the skunk has a good reputation as an insect destroyer and should be protected. Mice will girdle some trees when there is mulch around them, but if fresh dirt be put around them and tramped down or the snow tramped when it falls, they will seldom do any damage. Coal ashes will do also. Wire screen answers the same purpose and protects against rabbits, but it is expensive.

Prof. O. P. Kinsey of Indiana said he had trouble to get satisfactory apples for their students in their dining halls, and conceived the idea of growing them himself for the students so he bought the old home place and set a good part of it to apples. About two acres were set as an experimental orchard and the remainder to only a few of the best varieties. He has succeeded well with the undertaking, and has the apples shipped from the eastern part of the state to the northwestern part of Indiana to form part of the bill of fare at their dining halls. A thousand barrels of very fine fruit were sent there from last season's crop to help feed the students. (He is teaching the principles of the apple consumers' league at the college in an effective way). His own products give better satisfaction than what he used to buy, and he produces them at less cost than what he formerly paid for inferior fruit. He believes in mixing the varieties in the orchard to aid in pollinating the blossoms. He has made a second planting lately and is quite hopeful of reaping a rich reward from them, and is as enthusiastic as any young horticulturist about it. Ohio apples had proved to be better quality than those from any other states, although some others looked better.

It was not thought that southern products would interfere with that grown at the north to any extent. The South has obstacles to contend with that we do not have, but still some kinds can be more successfully grown there than elsewhere, and in some canned goods there will be strong competition. In addition, markets are opening up at the South where great cities are building, and our Northern products are needed down there after they are gone at the South.

There is a limited demand for fruits grown under glass, but it can be done successfully. It is not practicable except for the pleasures of the wealthy. The trees for the purpose are imported, and to cause them to drop their leaves and ripen the wood, moisture is withheld from them. The blossoms are fertilized both with a brush and with bees.

The Ohio station is taking quite an interest in forestry, and have furnished large quantities of trees for planting under the direction of the station. The kinds are mostly catalpa, locust, ash and maple. They are planted from 4x4 to 12x12 feet, but most of them closer than the latter. They are cultivated to get a good start, or a good mulch may answer. Many thousands of acres of waste or idle land may just as well be planted to forests and given good care for future generations. It will surely be as profitable as ordinary farming, and the timber will be needed more in the future than in the past. The Ohio Forestry Society also held a session and elected Wm. R. Lazenby president and C. W. Waid of the experiment station at Wooster secretary. It is expected that they may induce the legislature to pass a law to exempt timber and forest land from taxation, and disseminate information about forestry.

All of the old officers were re-elected, and they adjourned to meet at Columbus the week the State Board of Agriculture holds the annual institute.

The society is indebted to Messrs. Shively, Yaple, Hursts and West for their untiring efforts to make the meeting a success, and it would have been still greater if it had not been so near Christmas.

Dr. Chamberlain of the Ohio Farmer is a whole team in himself for the state society, and his lecture was so great that it is not worth while to try to summarize it. His subject was "Twentieth Century Horticulture," dealing of inventions and successes in the past and hinting at what we may expect in the future in improvements.

U. T. COX.

Lawrence County, Ohio.

They're Coming Along All Right.

Along with this "block of five" subscribers I want to send congratulations. Am delighted with The Fruit-Grower. "The Evolution of an Idea" booklet is a great hit, and will serve to bring many new members into "The Family" to stay. I have read every line of the booklet and examined all the pictures. Looked in vain for the children—guess they'll show up in the next booklet.

J. N. DAVIS.

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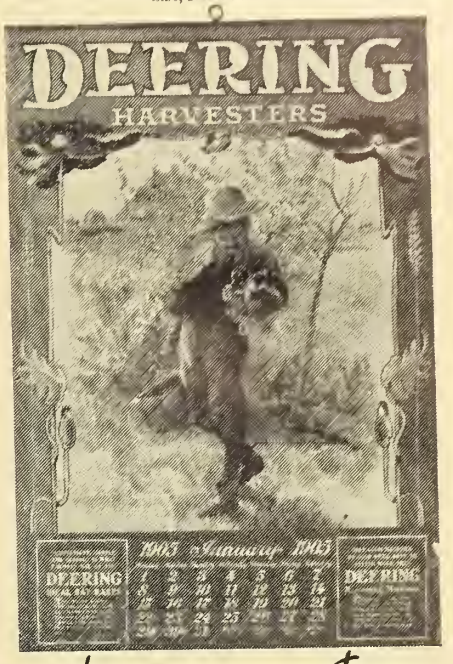

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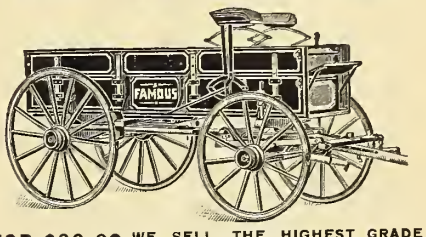

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HAWKEYE Tree Protector

An elm veneer, easily put on and big enough to protect as long as protection is needed.

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Tree Protector
The Best in the World. Easy to put on. Trees grow natural and never bothered by rabbits. Write for circulars. Pat. Jan. 1, 1901.
JOHN W. DAVIS, Jr. CLARKSVILLE MISSOURI

Kansas Horticultural Society Meeting

The meeting of the Kansas State Horticultural Society, which was held at Topeka December 27 to 29, was the best one the society has held for many years—if, indeed, it was not the best ever held. The attendance was good, the program was well filled, and J. H. Hale, of Connecticut, was present to help liven things up.

The reports of the trustees from the various congressional districts were encouraging. Kansas had some fruit the past year, and prospects for the coming season were generally reported as being very bright.

Officers elected for the ensuing two years are:

President, Major Frank Holsinger, Rosedale; vice president, W. F. Schell, Wichita; treasurer, Walter Wellhouse, Topeka; secretary, William H. Barnes, Topeka. According to the laws of the Kansas society the old officers, except secretary, were ineligible for re-elect'on this year, and this accounts for the fact that Judge Fred Wellhouse retired from the presidency. To show the esteem in which this gentleman is held by the members, it may be said that a new office, "honorary vice president for life," was created for the retiring president, and he w'll hold this honorary office as long as he lives.

The following directors were elected from the various congressional districts: First, E. J. Holman, Leavenworth; Second, E. P. Diehl, Olathe; Third, F. L. Kenoyer, Independence; Fourth, John Couzins; Fifth, William Cutter, Junction City; Sixth, J. J. Alexander, Norton; Seventh, George A. Blair, Mulvane.

The subject of "Cold Storage" was discussed by Mr. Ennis of the Continental Storage Company of Topeka. He told how the development of the cold storage industry has helped the fruit farmers, by prolonging the season for the marketing of their fruits, and said there are many things yet to be learned about the business, all of which will help the growers.

Mr. Thompson said that only good fruit should be stored. Second grade stuff should be sold at once. The only exception he would make is in the case of second grade Jonathan apples, which may often be stored to advantage.

Judge Wellhouse said that the past season he had put some York Imperial apples in storage. Out of storage this variety is not keeping well, but in storage the fruit is in good shape. This led Mr. Ennis to suggest that experiments with storing different varieties should be undertaken, and he said his company would gladly cooperate with the society in this work. Storage room will be donated to the society to test the storing qualities of different varieties, and the tests should bring out some valuable points.

In discussing the storage problem, the York Imperial came in for a share of attention. Mr. Thompson said he had seen York apples badly scalded by storage, and G. L. Holsinger said that at the World's Fair he had investigated the behavior of this variety, and Mr. Moore of the West Virginia exhibit had told him that their Yorks had kept in perfect condition. In the case of this variety, however, the apples had been placed in cellar at picking ttime, and kept there until about March and then placed in storage. Even this treatment had failed to prevent scalding of some of the apples, however. The point was also made that where York apples are allowed to become well colored they will stand storing much better than the pale apples, which are picked prematurely.

A member reported his experience in storing apples in a cave. This cave was left open at night, so that it would be filled with cold air. In the morning the openings were closed and the temperature was kept low by a system of ventilation. The openings were kept closed, of course, when freezing weather came.

Mr. Cope, a commission man of Topeka, discussed "The Commission Merchant," from the standpoint of the commission dealer. He said this much-abused man is a pretty good citizen, as a rule, although there are bad men in this business, as in all others. The members discussed the problem from various standpoints, and finally Mr. Cope suggested to the growers that they were largely responsible for for the number of shysters engaged in the commission business. The honest commission merchant is as anxious to get the unreliable ones out of the business as anyone else, but it is too often the case that when a shipper receives some fancy quotations from one of the get-rich-quick schemers he neglects the merchant he knows is reliable and consigns his stock to the newcomer. Ship only to commission merchants who are known to be reliable, and the dishonest fellows will be forced out of business.

On the afternoon of the first day S. P. Bailey of Versailles, Mo., conducted a conference on "Apple Orcharding." He called on various members for their views on different questions propounded. J. W. Robinson would prefer a moderately rolling site for an apple orchard; soil should be thoroughly underdrained by nature; tile draining is not practicable in an orchard. If upland soil is deep enough, it will be best; if not rich, would prefer valley soil.

Walter Wellhouse said fruit grown on upland soils will be of better quality and will keep better than fruit brown on lower locations.

E. G. Hoover of Wichita prefers dark soil with clay subsoil for Jonathan and Grimes Golden, lighter soils for Missouri Pippin and Winesap.

Judge Wellhouse would avoid all wet soils; moderately deep limestone soil, with clay and sand subsoil, is excellent.

The discussion of list of varieties was interesting and brought out the fact that Maiden Blush, Jonathan, Grimes Golden, Winesap, Ben Davis, Gano and Missouri Pippin are the most popular commercial sor'ts. Judge Wellhouse spoke especially for Jonathan, and said that in twenty-five years it has outyielded and outsold all other varieties with him.

Edwin Taylor, true to his convictions, said he would begin with Ben Davis, and he was not sure that he would not end with the same sort.

From the commission man's standpoint, Mr. Cope said Jonathan is decidedly the best seller; then come Grimes, Winesap and Missouri Pippin.

Most members preferred two-year trees, but agreed that if the trees are to be planted alone, where they will not be interfered with by other crops, and where they can be given good attention, the yearling trees will perhaps give better results.

The matter of cultivation brought out many plans. E. F. Stephens of Nebraska said that in parts of his state moisture is a scarce article, and clean cultivation, with no crop among trees, is necessary to conserve this moisture. Where crops are to be grown corn and potatoes were recommended as the best ones for this purpose.

Mr. H. A. Huston, formerly connected with the Indiana Experiment Station, was present, and said that Gruit-Grower — Silver — J-25—Gal 2 experiments at that station had shown that continuous, clean cultivation throughout the summer had not been the best for young apple trees, as they grew too late in season. Planting a cover crop of legumes was better.

J. H. Hale made a plea for clean cultivation. He sa'd that coming out of Kansas City on the train a gentleman had distributed literature telling of lands available for settlers in Kansas. "If land is plentiful," said Mr. Hale, "I would plant the orchard for the apple trees and put the corn somewhere else. Use Cutaway and Acme harrows and keep the soil clean until July 10 to August 1. Then, if soil needs nitrogen, plant clover or some of the legumes;. if nitrogen is not needed, sow turnips or something of that sort. In Georgia, where our soils need nitrogen, we use cow peas as a cover crop. In spring, when

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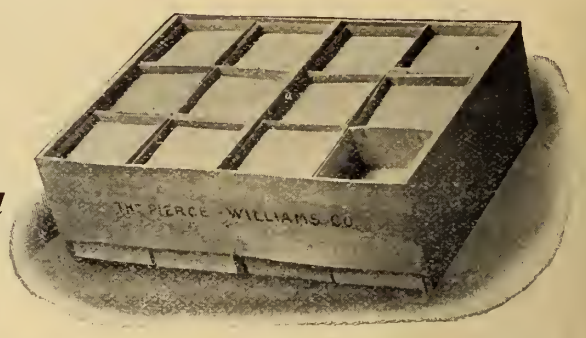

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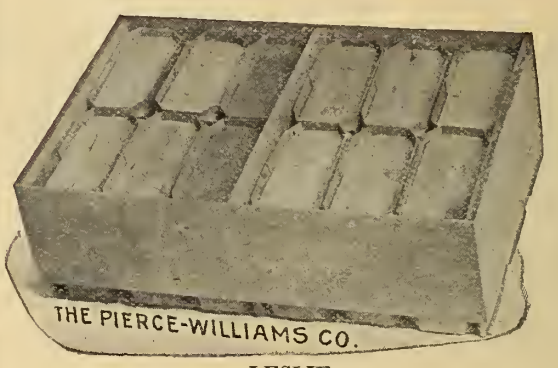

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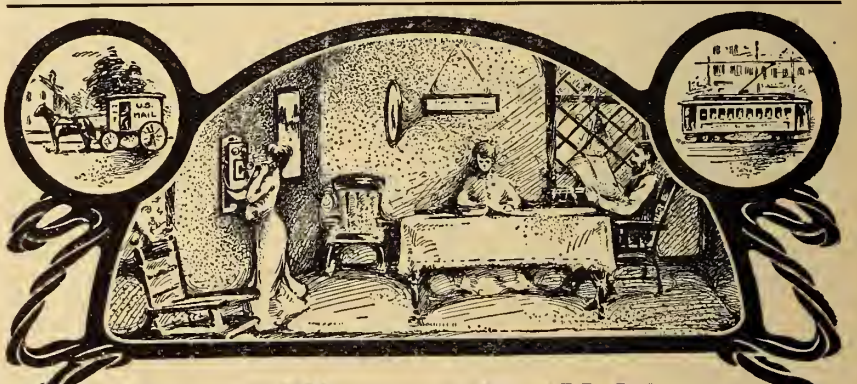

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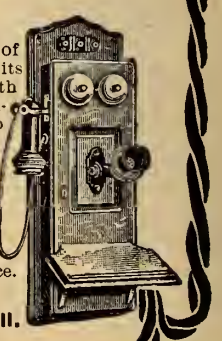

have brought the cost of building farmers lines within the means of every farmer. Time is near at hand when every farm will have its own telephone, and the farmer's family will he in close touch with the whole neighborhood, as well as the entire world. It is impossible to estimate the value, in dollars and cents, of the telephone to the rural home. Its influence on the boys and girls in keeping them contented and at home, is incalculable. The farmer will reap benefits every year worth considerably more than the entire cost to him—in keeping tab on the markets, in getting help in busy times and in many other ways. Write for free book F-104 "Telephone Facts for Farmers"—giving information on how to organize and build a telephone line. Our book 104 tells how others have built rural telephone lines. Write today to nearest office.

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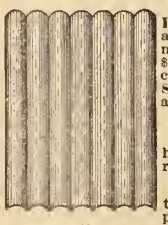

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growth of tree starts, then begin with the plows."

To protect against borers, Mr. Taylor recommended going over the trees twice a year and dig out all borers found. The best preventive is to keep trees growing thriftily.

Mr. Cellar had wrapped trees with wooden veneer wrappers to protect against rabbits; he did not take them off in summer, and later found that the borers were much worse than where the wrappers had not been applied. The tops of the wrappers were not closed with cotton or any other substance.

Mr. Law recommended one part of pine tar to two parts of fish oil as a wash to protect against borers; apply in fall, one application a year being enough. Mr. Alexander said he had used pine tar and killed trees.

Mr. Robinson reported that he, too, had had unfavorable experience with pine tar. On live, green bark he had seriously checked the growth of the trees; to this day the trees show a mark where the tar had been applied.

In discussing the subject of spraying, members differed—as they always do. Mr. Booth had used the dust, but had not been successful in checking apple scab the past season—but he did not know of anyone who used the liquid who had been successful, either, the past eason.

Mr. Dixon had used the Wallace power sprayer. It will furnish sufficient power, but the ground had been so wet the past spring that the machine could not be driven through the orchard when the spraying should have been done.

Mr. Hale said that in his Georgia peach orchard, where trees are small, he had found the barrel pumps satisfactory. If a good power sprayer is wanted, the Niagara Gas sprayer will do most excellent work, but it is rather expensive to operate.

The question was asked: "Does it pay to try to grow apples in Kansas? Answers varied, but it was noticed that those who have the largest orchards seemed best satisfied with the returns.

Prof. J. T. Willard of the Kansas State Agricultural college discussed the mission of that institution. An interesting feature of his talk was the showing of the changes which have taken place at the institution within the last few years. "A few years ago the students were required to select the course they would take, at the entrance of school. At the very outset they had to decide whether they would take the agricultural course, the engineering course or the general science course. The boys came to the school direct from the farm, and it must be stated that most of them had a prejudice against farming; this should not have been the case, of course, but it was the condition of affairs. As a result, of 300 students entering the college, only eleven chose the agricultural course.

"Then the system was changed. All students entering the college take the same course for the first year, no matter what they take in subsequent years. In this first year's work agriculture is taught, so that all get a taste of the agricultural course; even the boy who intends to be an engineer has this part of the work for the first year. As the boys see how attractive the agricultural course can be made, it has been found that an increasing number now elect to continue in agriculture. In 1899 only 22 per cent of the male students elected to take agriculture; in 1903-4, 44 per cent. On the other hand, the number electing to take the general science course decreased from 50 per cent in 1899 to 20.6 per cent in 1903-4. Among the female students the same tendency is observed. In 1899, 35 per cent of the girls elected to take the domestic science course and 65 per cent the general science course. In 1903-4, 92 per cent of the girls took the domestic science course and only 8 per cent the general science course."

This showing was well received by the society, as indicating the tendency of the farmer boys to stick to the farm in greater numbers than in the past.

A feature of the meeting Tuesday evening was the discussion of the transportation subject as related to the fruit industry. E. W. Jones of the Wells-Fargo Express Company first talked on "Fruit Express." He first told how the express companies wanted the fruit prepared for shipment, so that it can be carried in the best possible condition. He said: "Growers should ship none but first-class fruit. Pickers should separate the overripe fruit from the firm fruit, and the soft fruit should always be marketed at home. Fruit should be graded in the field, so that it will be handled as little as possible. The very best of box and crate material should be used; in express cars the crates are piled high, and the bottom ones are often mashed by the excessive weight.

"One thing I want to mention particularly," said Mr. Jones, "is in regard to the marking of the crates. Mark the address of the consignee plainly on both ends of the crate, with the name of the shipper in the upper left-hand corner of each end. This will insure the address always being in plain sight, so that the express agent will not have to lift the crate and turn it around to read the address of the consignee. This is important, for the crates should be handled no more than necessary. Another thing: In moving the crates, don't lift them at all, but slide them instead. One may lift the crate and set it down ever so carefully, but there will be some jar when the heavy crate is put down. If it is moved by sliding, however, there will be no jar."

Mr. Jones told of the refrigerator express cars which are used by the Wells Fargo Company. These cars are handled only on passenger trains and between Southwest Missouri points and Denver a saving of two days' time is effected. The icing charges of these cars are much lower than the refrigerator freight lines charge. For instance, from Arkansas points to Denver the icing charges for express cars is $27.50, while the Armour company, controlling the refrigerator freight cars, charges $60. From Arkansas points to Denver the express rate for refrigerator car service is 50 cents a crate, while the freight rate for the same distance is 42 cents. The saving of time will more than offset the difference, besides the saving in icing charges. During the strawberry season solid express trains of refrigerator cars are run for the benefit of the fruit business, these trains being on passenger schedule.

One of the most interesting papers of the meeting was read by Captain James M. Steele of the Santa Fe system. Mr. Steele told of the business his company has done in the transportation of California fruits. To provide refrigeration for a car of fruit from California to Chicago requires about 23,000 pounds of ice, seven renewals being necessary on the trip. In 1904 the Santa Fe carried 12,775 cars of this class of freight and of this number 6,744 were diverted en route. That is, the destination of the cars was changed after they left the California starting point.

"The Santa Fe is an agricultural road,'" said Captain Steele. "Nearly all the tonnage of the system comes from the soil, and it is idle to say that this company is not interested in the farmers along its lines. The interests of the farmer are the interests of the road. Each must live and let live."

Captain Steele referred to the recommendation of President Roosevelt that the interstate commerce commission be given increased power, and said that the railroads do not fear legislation. It is the indiscriminate demand for radical legislation which is objectionable. What congress is asked to undertake, in the way of providing equitable railway rates, is no easy matter, owing to the constant changes which are taking place in the railway business. It is foolish to say that a mile is a mile and a ton of freight is a ton. No greater mistake can be made, and the arrangement of freight rates is a task which has taxed the minds of the best trained men in the railway business. How, then, can inexperienced law-makers hope to settle the matter off-hand?

"The matter must be discussed calmly, with due regard for the rights of all concerned,'" said the speaker. "I believe that somewhere between the extremes of the radical man and the position of the railroads will be found a mean which will be satisfactory. But the vote-getting party issue, where the railroads are placed on one side and the producer on the other, is not the way to settle this matter." Mr. Steele said that, in his

(Continued on Page 46.)

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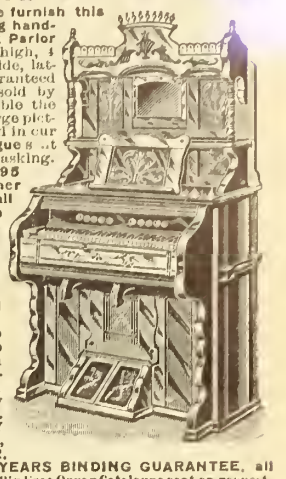

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Entered as Second-Class Matter in the Postoffice at Saint Joseph, Missouri

Volume 16 ST. JOSEPH, MO., JANUARY 15, 1905. Number 1

The editor of The Fruit-Grower attended the meetings of three state horticultural societies in December, and at each of them the question of railway transportation came up for discussion. At the Iowa meeting the society took steps to secure relief from some of the abuses from which fruit shippers have suffered. A committee was appointed on transportation, which will at once begin the work of compiling statistics of freight rates, etc., which show great discrimination against Western growers. Particular mention was made of the experience of growers at Glenwood, Iowa, the past season, who were unable to market their apples in points in Nebraska as cheaply as apples could be shipped to same points from Western New York points. At both the Iowa and Missouri meetings the statement was made that the Burlington system is one of the chief offenders in this line. This road reaches Southwestern Iowa and Northwestern Missouri points, and fruit-growers have been unable to get any consideration from this company. The Missouri meeting discussed this matter also, and its committee on transportation will likely get to work also and submit a report at the June meeting. At the Missouri meeting charges were made against the Burlington system, and so great was the feeling against this company it was stated that many fruit-growers who visited the World's Fair during the past summer paid full rates to the nearest points where competing lines could be reached, and used these competing lines rather than patronize the Burlington. At the Kansas meeting a representative of one of the large trunk systems was on the program to discuss the matter of fruit transportation, and his paper was most interesting. All this but indicates the interest which fruit-growers are taking in this matter. It is useless to try to grow fruit if it cannot be marketed, and the subject of freight rates will be a most important one when the country gets a full crop.

In connection with the foregoing, attention should be called to the private car monopoly in the matter of refrigerator cars. As is generally known, many of the railway systems have contracts with private car lines which furnish the refrigerator cars used in the transportation of fruit. The icing charges of these companies are exorbitant, and yet the matter cannot be remedied as long as the monopoly continues. The interstate commerce commission is now trying to straighten out the difficulty between the shippers and the car lines, but it is safe to say the agitation will not cease until the monopoly has been done away with. A suit which will test the legality of these contracts between the railway companies and the private car lines has been entered by Coyne Bros., commission merchants of Chicago. Last summer this firm received a car of melons from Poseyville, Ind., 280 miles from Chicago. A bill for $45 for icing the car was presented, and payment was refused on the ground that it was exorbitant. The company had also received shipments of fruits from points in Louisiana and Mississippi, three times the distance from Chicago, and the charges for refrigeration were only $30. From the latter points, however, the charges were made by the railway company for its own cars, while the charges from the Indiana point were made by the Armour company. Naturally, the members of the firm wanted to know why the private car line wanted $45 for icing the cars from points 280 miles away, when the railway company charged only $30 for the same service from points three times as far from Chicago. It is claimed that the melon growers from Southern Illinois and Indiana have been paying $45 for refrigeration service to the Armour company, when the cost of the ice did not exceed $15. The private car monopoly must go. It robs the shippers and must in the end work against the best interests o fthe railway companies themselves in interfering seriously with the transportation of this class of freight. It seems evident that the interstate commerce commission is having a lot of work laid out for it, and good citizens, irrespective of party, should favor the recommendation of President Roosevelt to the effect that this commission be given increased power.

The suggestion of Dr. J. W. McCracken, Sulphur Springs, Ark., that The Fruit-Grower publish in each issue a list of the various associations of fruit-growers, together with the secretaries of the respective organizations, is an excellent idea. As you agree to publish the list free of charge, every such organization should embrace the opportunity to send in the desired list and make it as complete as possible. This list would be sought by all the dealers and commission houses in every market. It would place the entire trade in touch with every association. It would save hundreds of merchants or firms the expense of putting a man on the road to seek such supplies or information, an enormous tax in the aggregate. Of equal importance to the growers and shippers would be the opportunity to correspond with all the other organizations, learn what they had, their prospects, etc. They would also see where their competition would spring from and how formidable it was. The information thus accessible would be important to every such body. It would give them all a glimpse of the future prospects and serve to furnish a proper basis for prices at home or elsewhere. In a word, all concerned would be in a position to act more intelligently and more sucessfully. Hence the importance of accepting your liberal offer and an early publication of the list.

P. M. KIELY.

The foregoing from P. M. Kiely, a prominent commission man of St. Louis, is to the point. In this issue of The Fruit-Grower we begin the publication o fthe list of these associations, with their secretaries' addresses. Only a few lists have been sent to us, but we hope to increase the list every month until the entire country shall be covered. But how about the commission men, Brother Kiely? They are a hard lot to interest in this matter. Not a great many are now subscribers to The Fruit-Growers, but we shall make an effort to add all of them to the list, for this list of associations, with our fruit crop reports, will make The Fruit-Grower an interesting paper to them. Another matter: The growers are repeatedly urged to send their shipments to the members of the National League of Commission Merchants, who are all reliable. And yet these growers do not know who are members of the league. The latter organization decided on a campaign of advertising several years ago, but the committee spent all the money appropriated for advertisements in the commission trade papers, and papers which reach the growers were neglected. In this issue we publish a list of some of the members of the League, at a low rate, but only a very, very few have been interested. Let the reliable commission men and the growers get together—and we suggest as the best way that the National League of Commission Merchants advertise in the best paper which reaches the growers of fruit everywhere: The Fruit-Grower. Now's the time, gentlemen, now's the time.

This issue of The Fruit-Grower is largely taken up with reports of the various horticultural meetings. No apology is necessary for devoting this space to these subjects, we believe, for the importance of the meetings justifies the use o fthe space in this way. We feel safe in saying that no other paper in the country reports as many horticultural meetings in as complete a manner as does The Fruit-Grower. In fact, until we began this practice, few of the meetings were reported at all. We have always made a specialty of these reports, and are quite proud of the system we have arranged for securing reports from the various society meetings. It is becoming more and more true that if you want to know what is going on in the world of horticulture, you must read The Fruit-Grower. If you are not now a subscriber, get in line today; if you are now a subscriber, keep in good standing by renewing promptly. Start the new year right.

Have you ever used commercial fertilizers in your orchard or fruit garden? A few years ago no one would have thought of introducing this subject into a Western horticulture meeting, but now it is discussed with the greatest interest. Perhaps the time has almost arrived when our Western orchardists, even on the richest soils, will consider the matter of adding to their soils those elements of fertility which are needed by the various kinds of fruits. Certain it is they are ready to hear the subject discussed—and time was when they were not even willing to do this.

One of the first things to be taken up by the newly formed association of horticultural society workers is the matter of arranging dates for the meetings of various societies so there will be no conflict in time of the meetings. If a succession of meetings is arranged, expert speakers can be secured for a number of society meetings, at reduced cost to all of them. J. H. Hale came from Connecticut to attend the late meeting of the Kansas society. Now, if the Missouri society, or the Nebraska society or the society of some other nearby state, had been held the fore part of the same week Mr. Hale could have attended two meetings and addressed twice the number of fruit-growers, at very little extra expense. This matter is worth considering, and to arrange a plan such as is proposed will mean better meetings of all the societies.

Mr. D. E. King has been appointed industrial agent of the Missouri Pacific and Iron Mountain railway systems. Mr. King was formerly traveling freight agent of these lines, and at that time came into close touch with the fruit-growers of Missouri and Arkansas. He organized several trips among the fruit sections of Missouri and Arkansas for the benefit of the growers. At these meetings experienced men discussed horticultural subjects, and much good resulted therefrom. The appointment of Mr. King will mean much for the horticulturists of the states traversed by the Missouri Pacific and Iron Mountain systems. The industrial department is interested in the development of the country through which the lines pass, and it naturally follows that the companies are particularly interested in developing the fruit industry, for no other branch of agriculture pays such returns to the transportation companies. A representative of a railway system recently made the statement that an acre of fruit will produce, at a low estimate, $50 worth of freight business in a season. The same acre of land devoted to stock raising, will produce but one-tenth as much. The same is true of passenger traffic, for fruit farms are small farms and mean more population, than the larger stock farms. It is well for the fruit-growers, therefore, that a man who is in sympathy with them and with their work shall occupy this important position with the companies mentioned, which traverse such a rich fruit section. Mr. King is himself a fruit-grower, having large orchard interests in Arkansas. The Fruit-Grower congratulates the railway companies, Mr. King, and also the horticulturists generally.

At the various horticultural meetings held in the Middle West during the present winter the members reported prospects for next year's fruit crop as being especially bright. All said that trees had ripened their wood in good condition and had gone into winter in the best possible shape. The only exception to this rule was that in Southern Missouri and Northern Arkansas the strawberry crop had been injured by drouth, and prospects are for about half a full crop of this fruit from that section. The prospects for a good fruit crop, therefore, justify growers in trying to perfect arrangements fo rhandling the crop when it comes. Sections which have never before had a surplus of fruit are now coming into market with commercial crops, and the matter of disposing of same is a serious matter. This subject should be carefully considered before the time comes for the marketing of the crop. It is a common saying among fruit growers that there has never been a surplus of good fruit, if the proper distribution of the same is secured. This is likely true—but it is also true that there are many instances of faulty distribution. In fact, there are cases of this kind every season, and they inevitably result in loss. Growers should perfect their shipping associations at once, and there should be the closest co-operation among the various associations whose fruit comes into market at about the same time.

Some months ago The Fruit-Grower contained a paragraph criticizing the management of the finances of the Missouri State Horticultural Society, because of the fact that the reports as submitted did not cover all the funds of the society. Last June a special committee was provided to investigate this matter, and at the meeting at Neosho last month this committee reported. The report showed that the funds have been handled properly, and the last report submitted by the treasurer covered all the funds belonging to the organization. So that the matters which were subjects of criticism have been corrected, and everything is in good shape. The Fruit-Grower wishes to make this statement, so that if any persons have been under the apprehension that the funds were not properly expended, they may be set right. The meeting at Neosho was harmonious in every way, and it is to be hoped the members of the society will work together for the improvement of the horticultural industry in Missouri and elsewhere.

Prof. J. L. Budd, who was for so long connected with the Iowa Experiment Station, died at San Antonio, Texas, recently. He had been in poor health for some years, and had gone to Texas with the hope of improving. Prof. Budd was best known on account of his work in introducing Russian fruits into the United States. In 1887 he went to Russia as agent of the United States Department of Agriculture, and subsequently spent two years in that country studying the apples and other fruits which were grown there. Eight or ten years ago there was much opposition to Prof. Budd in Iowa, on account of his advocacy of Russian varieties of fruits. Part of this opposition was no doubt due to the fact that nurserymen opposed his distributing the trees from the grounds of the state experiment station. Now that time has been given to test the fruits which were introduced from Russia, their correct value has been ascertained, and the horticulture of Iowa and the Northwest is richer because of Prof. Budd's work. Prof. Budd was an able man, and contributed no little to the horticultural development of the northern portion of the Mississippi Valley.

Please find inclosed 50c to renew my subscription. I have only a six-acre fruit farm, but I get information enough from one number to more than pay for a year's subscription.—N. A. Kelley, Pierce City, Mo.

I rejoice to see The Fruit-Grower grow in strength and usefulness.—E. W. Kirkpatrick, McKinney, Texas, President American Association of Nurserymen.

The Family Circle

This issue of The Fruit-Grower begins the ninth year of its history This is the first number of Vol. 16. It is well to look back over the past history of the paper and note the changes which have taken place since our first issue, eight year ago. A number of our subscribers remember this first number and have noted the growth of the paper during the years, but a great many more do not know of this history.

Two thousand copies were printed of the first issue of The Fruit-Grower, the paper consisting of sixteen pages. To print this edition required 280 pounds of paper. That was eight years ago. Now, to print this issue of The Fruit-Grower required about ten tons of paper. Forty thousand copies were printed, each copy consisting of forty-eight pages and cover. This is the largest job we have yet undertaken with our mechanical plant.

When the first copy of The Fruit-Grower was printed we hired the work done, as all of us were engaged on a daily newspaper, and we had no plant of our own. But to print this issue our presses have been running night and day for several weeks and this January number will hardly be off the press until the first "forms" of the February number will be put on. Our plant now occupies four large rooms and about fifty persons are employed.

So much for the difference between this issue and the first numbr of The Fruit-Grower, eight years ago.

The first year of its history The Fruit-Grower consisted of sixteen pages each month. This was 192 pages for the entire year. Last year the twelve issues of the paper required 376 pages, or, if the cover pages were counted, more than twice the number of pages of the first year's volume. And yet there has been no increase in the subscription rate.

Had you noticed the index to Vol. 15, which was published in the December issue? It included the principal articles published during the past year, although if all the sub-headings in the various departments had been listed, or if all the questions in the Questions and Answers Department had been specifically mentioned, a much larger list would have been published. But the index showed that The Fruit-Grower had been full of good things for the year 190-, and we doubt if many of our readers appreciated just what had been published until they saw the index in the December number.

Another thing: Did you save your copies of The Fruit-Grower for 1904? If not, then you can look over the index printed last month and see a great many articles mentioned which you would like to read again—indeed, the list doubtless conntains a great many which you will need during the coming season. Every effort is made to publish articles on different phases of horticulture just at the time when they will be needed by our readers. But of course this cannot always been done. Or it may happen that even an article which is timely may not interest you when it appears —you may not be interested in that subject then. But if every copy of The Fruit-Grower is filed your memory can be refreshed at any time. And at the end of the year an index will be published and the year's papers can be bound in a book. It will be worth a great deal to any one who grows fruit and one who has a bound volume will refer to articles contained therein a great many times during the year.

We want to urge, therefore, that every reader of The Fruit-Grower save each month's papers this year. If your paper does not come at the proper time send us a card and ask for another. Don't delay this, for any given issue may be exhausted if you wait a month or two. You don't know what The Fruit-Grower will be worth to you until you do this. Scarcely a day passes we do not receive letters from some of our readers asking for information on some ubject, when that very subject had been discussed in one of the issues of The Fruit-Grower some time previous. If the papers had been regularly filed, the information would always be at hand.

To help our readers take care of their papers, The Fruit-Grower has arranged to furnish a binder, which sent in at one time, for $1. If two will hold twelve papers, for 75 cents. This includes postage. Each month's paper can be placed in the binder when received and then it will not get torn and all the paper will be kept in order. At the end of the year the twelve papers can be taken out and bound in permanent form and the binder used again to file the issues of the next year. Get a binder now and save The Fruit-Grower for the coming year.

Another request we want to make of our readers at this time is in regard to our advertisers. We believe that few papers carry as clean a line of advertising as does The Fruit-Grower. A great many advertisements are refused every month as not desirable for our columns; but we believe that those appearing in our columns are reliable. Study these advertisements and when you answer one of them always state that you saw the advertisement in The Fruit-Grower. If the address given in the advertisement calls for a box number or a street address, use this same address in your letter and on your envelope. Most advertisers want to know what papers are profitable for them to use as advertising mediums. Accordingly they "key" their advertisements by using a special box number or street address, this number changing with every paper used. In this way the advertiser can tell, from the addres on the envelope, in just what paper the advertisement appeared. For instance, the advertisement of the Bateman Mfg. Co., Grenloch, N. J., manufacturers of the Iron Age line of implements, use box No. 506 in their advertisement. The Fruit-Grower is the only paper which has this number, so that all letters bearing this address are known to come from our readers. And so with other advertisers.

We hope our readers will see the importance, therefore, of mentioning The Fruit-Grower in replying to advertisements ,and also to address the replies in just the same manner as the address used in the advertisement itself. Advertising patronage is a very essential thing for every newspaper, and it is also absolutely necessary that the advertisers know that the use of advertising space in a given publication pays them. The Fruit-Grower could hardly furnish the white paper on which it is printed for our subscription price, if we had no advertising patronage. And we must bring results to advertisers in order to hold them.

Remember this in answering advertisements in our paper.

Now a few words about the subscription season. January to May are the busy months in our subscription department. More of our subscriptions expire within this time than during all the remainder of the year. It will be seen, therefore, how important it is to us that these subscriptions be renewed promptly. This season is also the one when we are called upon to pay the heaviest bills for paper, for help in our office and mechanical departments, so that our expenses are naturally very heavy. The subscription account of any one subscriber will not amount to much. But suppose we have about twenty thousand persons, with a little due from each! The total is no inconsiderable sum, we assure you.

Will you not renew your subscription at once? It will help things mightily when it comes to paying printers, pressmen, office help, paper bills, etc. Don't neglect this, but renew at once. Notices will be sent to delinquent subscribers in February, and your renewal now will save us the trouble—and expense—of sending you a notice.

A great many of our subscribers sent their first subscriptions last year, in clubbing combinations, for which a reduced rate was made. Some of these persons are now asking if they can renew at the low rate they secured for the first year. In reply to questions of this sort we will say that all papers make a lower rate for the first year's subscription, in combination with clubbing propositions, than they can afford to make later. These papers consider that they will get the renewal subscription at their regular rate, after the name is once on the list. Therefore, The Fruit-Grower cannot accept renewal subscriptions at reduced rate, except under this proposition.

We will accept four new subscriptions and ONE renewal, where all are renewals are desired, send eight new names in the club. Only one renewal can be included in the "five-for-a-dollar" offer. This special offer will not continue in force very long, so every one should take advantage of it while he may. It will become necessary shortly to advance the yearly subscription rate of The Fruit-Grower.

But with this proposition every reader of The Fruit-Grower can not only secure his own renewal, but can make a snug commission by getting up a club at this rate. And we should be glad if every reader whose subscription has expired, or will expire soon, will renew under this proposition. And why not? Why not get four of your neighbors to subscribe and send their names and your renewal, all for $1. Your neighbors do not have to be exclusive fruit-growers. They need only to be interested in fruit cultiure for home use to justify their taking The Fruit-Grower. If they can secure information which will help them get one barrel more apples or one more crate of berries, then they will be repaid for their expenditure. We really think that every reader of The Frult-Grower should do this missionary work. Can we count on you?

On our part, we will promise to have a better paper this year than ever before. Next month we will have a special number devoted to the subject of "Spraying," the March number will be a "Gardening" special and April will deal especially with "Small Fruits." Then, during the remainder of the year there will be matters of great interest and importance. For readers east of Ohio we have an eastern edition, and everything will be done to make this feature a success.

We wish every member of The Fruit-Grower Family a prosperous year. We are going to try to present information which will help to make the crops profitable. Can we rely on your support in helping The Fruit-Grower Company to have a prosperous year? If you want to help, this article will have told you how.

BROTHER JONATHAN.

Pointers on Road Dragging.

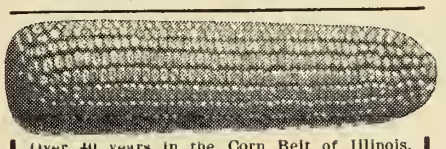
This is written in Indiana. I spent a month a year ago traveling over the state. A considerable portion of the more important highways are surfaced with broken stone or gravel. These roads have, many of them, been carelessly built, and the stone roads are proving expensive to maintain. Two mistakes are responsible for this; first, where macadam is used the stone is not screened thoroughly and second, no roller is used. Water runs through like a sieve, and by the time the stone begins to cement or bind the surface is worn into three long troughs, and the edges of the road are highest. The drag will be tried on some of these rock roads. I believe a heavy drag will gradually get them into shape, but the improvement will be slow.

Broken stone should be screened. The various sizes should be put down in layers, and each layer rolled with a heavy roller. The whole should be finished with a thin coat of stone dust. If this layer of dust can be sprinkled and rolled the surface will be almost impervious to water; will not rut or creep under heavy wagons, and the repair bill will be very light for many years.

The gravel roads are like the earth roads in requiring a little attention frequently. The drag has worked wonders on the gravel wherever tried. They do not cup up in the spring. They remain smooth and hard at all times without ruts or small chuck holes. They do not become muddy when it rains nor dusty in dry weather, and are at all times more pleasant to drive over than macadam. The Hoosiers declare the Missouri splitlog drag is all right, and it is coming into use rapidly.

D. WARD KING.

Maitland, Mo.



Over 40 years in the Corn Belt of Illinois.
If you are interested in
Pure Bred SEED CORN
or if you want to buy Seed Corn in large or small quantities, that will make you money you ought to read our catalogue on corn breeding. It tells how we breed corn to a very high standard of perfection. It's worth reading. It's Free. We ship corn in ear, any quantity over 1 bushel. Carload lots a specialty. Write us.
A. T. DOERR & SONS, Harvel, Ills.
Reference: Harvel Bank.

KNOX NURSERIES
(Established in 1851.)
One Year Cherry Trees for Spring Planting
Those whom we did not supply last fall we hope to furnish next spring. We have pleased every customer this last fall and have many letters containing such expressions as "Cherry trees are the best we every saw." "I had no idea they were half so good;" "one must see them to appreciate the quality." "Cherry gave perfect satisfaction," etc. Well pleased customers are our best advertisment everywhere we have sent one year cherry trees. Our one-year cherry are the finest this year that we ever grew—they are simply magnificent. Fine tops and perfect roots make an ideal tree. Send for illustrated circular telling all about them. A postal with your request is all the charge. Let us send you a sample for comparison with trees from other nurseries. We also have a fine lot of apples, peach and a general line of nursery stock. Planters will do well to get our prices before buying.
H. M. Simpson & Sons, Vincennes, Ind.

TREES! TREES!
400,000 Apple, 300,000 Peach, 50 000 Pear, 40,000 Sour Cherry, 40,000 Japan Plum. Best packing, best grading, best prices, best trees; best place to buy orchards. Jobbers supplied. No agents. Firm not impersonal. Our Free Catalogue is meaty.
WOODVIEW NURSERIES
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Nurserymen ATTENTION
We have a block of 55,000 elegant 2-year apple as follows: 6,860 Ben Davis, 11,458 Mo. Pippin, 11,536 Gano, 3,561 Winesap, 6,453 Jonathan, 3,828 Janet, 3,465 York Imperial, 2,875 G. G. Pippin, 2,977 M. B. Twig, 3,225 M. Blush, 638 Ramsdell Sweet, 502 Prices Sweet, 613 E. Harvest, 265 Duchess, 312 Yellow Transparent, 431 Martha, 679 Whitney. Eighty per cent of these will grade 5-8 and up and are smooth and fine. We wish to sell all to one party as they stand, and will sell at a low figure if sale is made in the next thirty days. Here is a snap for the fellow that can use them. Address,
Furrow Bros., Guthrie, Okla.

200,000 Apple Trees
1, 2 and 3 years old; all the leading varieties. 3,000 Kieffer Pear, 1 year; 5,000 Japan Plums 1 and 2 years, and a general line of nursery stock. No finer trees grown any where in the United States. Gnaranteed free from San Jose Scale, Root Gall or disease of any kind. Sold direct to the farmer and fruit grower at LOWEST PRICES. Catalogne and Price List Free. Correspondence Solicited. Address
The Riverside Nursery Co.
CONFLUENCE, PA.

Pear Trees
I have a large stock of first-class pear trees. Would be pleased to furnish list of varieties with prices. I have other trees also.
J. A. CALLISON, Des Moines, Iowa.

80 VARIETIES
of the best new and standard Strawberry, Blackberry, Red and Black Raspberry plants; also Grape Vines. EXTRA GOOD PLANTS AT A LOW PRICE. We guarantee satisfaction in every respect. Write us right now for our 13th annual price list, and compare our prices with others before buying.
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100,000 Apple Seedlings
NUMBER 3
For Lining Out—VERY CHEAP
ROOT GRAFTS
put up in any style or quantity. A complete general Nursery Stock. Write for prices.
HAWKEYE NURSERIES, Stratford, Ia.

Hardy Northern Grown Trees and Shrubs
Healthy, vigorons, productive and free from insect pests. NONE BETTER or cheaper. No traveling salesman can compete with us in price, quality considered. Get Free Catalogue.
George H. Whiting Nurseries, Yankton, S. D.

60,000 PINEAPPLE STRAWBERRY Something ont of ordinary. Very profitable. Fine catalog. **W. N. Scarff, New Carlisle, O.**

Gardening Department

This department is conducted by Henry Field, a market gardener and seedsman of Shenandoah, Iowa, in the southwest portion of that state. Besides his regular garden work, Mr. Field has extensive test grounds, the reports from which appear exclusively in The Fruit-Grower. Those of our readers who desire information concerning any garden problem are invited to write to Mr. Field and tell him their troubles. He will be glad also to receive samples of vegetables and flower seeds for testing in his trial grounds.

Onions for Profit.

I have had a flood of inquiries about growing onions, and there seems to be a widespread interest in them. In the first place I want to warn you that you must not bother with onions if you are afraid to get down on your knees and hump your back weeding them. There is lots of hard, tedious work about tending onions and you may get discouraged. But there is generally a good profit in them and you can put up with some backache if you are well paid for it. Several asked how much one man can tend. Well, my advice would be, if you are trying it for the first time, one acre is enough for one man to tend if he is a beginner. If he has had experience with onions he will know how much he can tend. We generally count on twenty-five days' work for one man between planting and pulling. This for an acre of drilled onions from seed. As to amount of seed to the acre, I would advise five pounds. If it is good, strong seed and comes well you may have to thin a little, but that will not be a bad fault. It will cost you from 70 cents to $1.25 per pound, according to variety, but do not try to get the cheapest seed you can find. It may be old or mixed seed and not worth a continental. Buy of some good seed man that you can depend on, even if he charges you a few cents more on the pound. I had a letter just yesterday from a man that lost $300 last year on his cabbage crop from saving 50 cents per pound on his seed.

For tools you will need a drill and a two wheel cultivator, or one of the combined implements may take the place of the two. I like Iron Age and Planet, Jr. tools best, but there are other good makes. They are sold about the same price everywhere by hardware men and seed men.

For ground, take any good rich soil that would grow good potatoes. If it is a little sandy it will be better, but it should not be wet and soggy. After plowing, harrow and disk the ground till it is as fine as an ash heap and then plank it down smooth. If it is mellow in the top inch or two it will not hurt if it is some solid underneath. Plant as early as you can possibly get the ground ready. You can't get them in too early. Onions are hardy things and they will get the start of the weeds.

Plant the varieties that will sell the best in your market and make the best yield. My choice would be the large Globe onions, both red and yellow. The Red Globe and Red Globe Wethersfield are good reds and the Prizetaker is the best big yellow. The reds keep the best, but the Prizetaker is the mildest. With good luck you can grow 300 bushels per acre and with extra good luck 500 bushels. I have had 700, but that was uncommon. ou may sell them at $1.00 a bushel or you may have to take 40 cents. I have sold them at 25 cents and made money on them at that.

For onion sets, plant very thick and later in the season, so the onions will grow small. They should not be over an inch in diameter. Use small, hard varieties of onions, such as the Danvers, Silverskin and Extra Early Red. Use thirty to fifty pounds of seed per acre in rows fourteen inches apart, and sow in May or last of April. Tend same as other onions. The yield will be about the same as for big opions, but they will be more work to gather from being so small. This year they are rather scarce and are now worth about $2.50 per bushel for spring delivery, but this of course takes account of the risk in storing. I store mine in lath crates four feet square and about four inches deep.

The New Catalogues.

The most pleasant part of gardening is the studying of the catalogue. We can all sit down and look through the seed catalogue and plan great things for next summer. Of course, when summer comes our garden will not be as gorgeous as we had hoped, but the planning is just as enjoyable, anyway. Write for the catalogues and study them over, you will learn something from every one, for they are meant to be text books on gardening, and if they are truthful, as they certainly should be, you can acquire much valuable information. But don't be led astray by wonderful colored pictures and high-flown descriptions. If a man tells you some things that your common sense will tell you are not so, how do you know whether he is telling you any truth at all?

If a man tells you that his corn will make 300 bushels per acre, you know he is at least 50 per cent a liar, and for all you know he may be 95 per cent humbug.

Buy some of the novelties and try them. You will enjoy it, and you may strike something valuable. You may find it be simply an old sort under a new name; but if so, you will have the satisfaction of knowing it for sure. But don't risk your whole crop on novelties. Try them first. For main crop plant something that you know pretty sure is all right.

Asparagus.

I get lots of letters asking for advice about asparagus. There seems to be a growing interest in it and I do not wonder. It is the first vegetable to come in the spring, it is a sure crop, spite of any kind of weather, always sells well and, to my notion, cannot be beat for downright good farmer eating. You can grow it on any good, rich soil, and in any handy corner. A bed as big as a room, set with fifty plants, will make a good supply for a common family, but a bigger bed will not do a bit of harm. Set the plants in rows two to four feet apart, and put them a foot apart in the rows. Keep well hoed the first season and then mulch good and let them go. If the mulching rots down so the weeds begin to creep in, put on more of it. You can't hurt the asparagus. It will grow up through anything. The plants should be set nearly on the level and grow very easily if fresh and sound. They are cheap. You can get 100 plants delivered postpaid for $1.00 from any good seed man. Set them early in the spring and you can begin cutting for the table the next spring. Now next time you are hungry for asparagus, remember how easy it is to grow a bed of it.

Strawberries Again.

Remember that I told you last summer that the time to set strawberries was early in the spring. April is my choice. Just after the leaves start and before the blossoms appear the plants will live with half a show. You can't hardly kill them. A month later you can hardly get them to live. Now get ready to set a good bed. For family use set at least 300 plants. If you get too many berries it won't do a bit of harm.

I like mostly staminate or perfect blossom sorts. You can set a solid block of one kind of them and they will all bear. If you set pistillate or imperfect blossom sorts you will have to set some of the others with them to furnish pollen, and even then, if it it poor weather, you will fail to get a good set of berries. There are lots of good kinds and every man has his favorite among them. I like Splendid and Senator Dunlap best of any, because they are sure to live, grow and spread like weeds, and always bear. They are much alike in many ways and I never had a failure with either one. Both are perfect blossom, have strong, rugged foliage, free from rust, and bear enormously of good-sized berries. Of the pistillates, I like Sample best, but it is more a professional's berry than a farmer's berry. Clyde has such a weak plant that it is hard to get to live and rusts badly. Splendid or Senator Dunlap will almost kill out bluegrass and that is what the average farmer wants in a berry. It must keep hustling, whether it gets the best of care or not.

The Seed Crops.

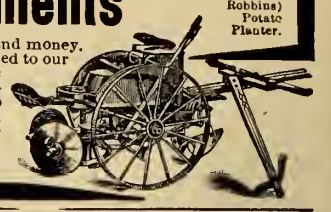
There has not been for several years so good a supply of all kinds of seeds as this year. No great surplus amounts, but good average crops. Sweet corn, cucumbers, melons, early peas and so on, that were so scarce the last two years, are fairly plenty this year and reasonable in price.

The worst shortage will be in the beans. Wax beans and some of the

Your Spring Help

What kind of help will you have this spring. Will you do your work the old way with many men and much expense, or employ the time-saving, labor-lessening and money-making

IRON AGE Implements



These famous tools double each man's capacity—saving time and money. Our new No. 25 Fertilizer Distributor attachment may be applied to our famous No. 6 combined tool, or to our No. 1 Double Wheel Hoe as is the case with the Seed Drill attachments. This labor saving implement and the Iron Age (Improved Robbins) Potato Planter are fully described in "Iron Age" n book which should be in the hands of every gardener and farmer who would be more successful. Sent free.

BATEMAN MFG. CO., Box 506, Grenloch, N. J.

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Our 1905 SEED BOOK contains information of interest to every Farmer and Gardener—It's FREE, write for it today.

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Blue Ribbon **Garden Seeds**

USED IN YOUR GARDEN THIS YEAR MEAN
BETTER QUALITIES AND LARGER RETURNS.

AWARDED GOLD MEDAL ST. LOUIS, 1904.

Endorsed by the best Gardeners as the highest qualities obtainable. Send for our SEED BOOK FOR 1905. Mailed free. It's most valuable for information concerning Seeds and Crops comprising Vegetable Seeds, Grass and Clover Seeds, Alfalfa, Rape, Seed Oats, Seed Corn, Forage Crops, and all Seeds for the Garden and Farm.

WOOD, STUBBS & CO., Seedsmen,
LOUISVILLE, KENTUCKY.

THE BEST SEED

Write for our Catalogue to day—It is Free

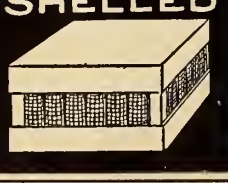
Our 1905 Catalogue is the Finest, Most Complete and Up-to-date Seed Book issued in the West.

1,000 Choice Varieties. 250 Illustrations.

No windy" stories; no misrepresentations; no old varieties under new names at high prices. A CLEAN HONEST BOOK. Our descriptions are brief and accurate; our illustrations modest and true; our seed is the VERY BEST quality, thoroughly tested, and our prices are right. Our honest method in three years has given us the trade of the most critical planters, gardeners, farmers, etc., in the West.

Zimmerman Seed Co., Dept. 12, Topeka, Kas.

SEED CORN IN EARS OR SHELLED



RATEKIN'S Pride of Nishna, Iowa Silver Mine and Imperial (white) are three of the best varieties of field corn ever cultivated. Ratekin's Seed Corn is known and planted in every state in the Union, and in every county of every state in the corn belt. Corn growers have confidence in Ratekin's Seed Corn, born of experience in growing it. Brings a bigger yield. When you buy Ratekin's Seed Corn you get Ratekin's experience of 21 years in raising and breeding seed corn. We sell direct to the farmer and have thousands of letters testifying to the splendid quality and grade of our seed corn and the excellent yield it produces. Our magnificent new 1905 Seed Catalog mailed free if you mention this paper.

Always address
Ratekin's Seed House, Box 44, Shenandoah, Ia.

NEW SEEDS FROM THE GROWER TO THE SOWER

We have raised a very fine lot of seeds the past season and offer them to the gardeners and farmers at WHOLESALE PRICES. Catalogue free. It contains lots of good things, including a new Blight Proof Potato and a new Oats that gave us 2,000 bushels on 19 acres. Don't miss it.

JOSEPH HARRIS CO., Seed Growers, Coldwater, N. Y.

Western Seeds for Western Planters.

Most complete stock Garden, Field and Flower Seeds. Fully tested; pure; fresh. 1905 catalog free. Alfalfa, Millets, Sorghums, Brome Grass, Meadow Fescue, Dwarf Essex Rape, Macaroni Wheat, and everything in seeds. Write for our Special Circular on new Oklahoma Dwarf Broom-Corn. Immense yielder, best known to date. Full line Planet Jr. tools. Big stock Tree Seeds. Write to

Kansas Seed House, F. BARTELDES & CO., Lawrence, Kansas, or Colorado Seed House, Denver, Col., or Oklahoma Seed House, Oklahoma City, Okla.

Iowa Grown FIRE DRIED **Seed Corn** Your neighbor has found that he can grow 20 bushels more corn per acre by planting Iowa Grown Seed Corn. Why don't you do the same? Let us send you liberal samples of our best varieties, with seed catalogue free. Don't lay this paper down until you have sent for them. Make two dollars where you now make one. Address

J. B. ARMSTRONG & SONS, Seed Corn Growers, Drawer 20, Shenandoah, Iowa.

Seed Corn That will grow where any corn will grow. The man who buys Vansant's Farmers Interest, Reed's Yellow Dent or Early Leaming insures 20 bushels more per acre on his corn crop. Write for our free catalogue and how to to select seed corn. Address W. W. Vansant & Sons BOX 12 FARRAGUT, IOWA

SEED CORN

Raised in Iowa. The kinds that grow. Best varieties. Hand selected, and true to name. To plant our SEED CORN means 25 per cent more corn per acre. Our reputation and your crop depends on the seed corn we sell you.

NISHNA VALLEY SEED CO., Hamburg, Iowa.

CATALOG FREE!

SEEDS

$3,500 In Cash Premiums given to Seed buyers this year.

We raise and sell superior varieties of tested **Seed Corn,** shelled or **ON THE EAR,** new **Rust Proof Oats, Early Ffie Wheat** that is sure, luxurious **Dwarf Essex Rape, Wonderful Speltz,** beardless and bearded **Barley, Cane and Kaffir Corn** that produces lots of feed, fine **Seed Potatoes, Artichokes,** the great hog food, **Bromis Inermis,** the great grass, all kinds of **Grass Seed,** free from noxious weed seed, all kindsof **Garden Seed** that produce fine lustrous vegetables, **Flower Seeds** that produce beautiful blossoms, lovely **Roses,** fine **Bulbs; Small Fruit Plants, Garden Tools, Poultry Supplies,** wonderful **Egg and Chick Foods.** All these and many more described in our valuable catalog manual which is **SENT FREE UPON REQUEST.**

We furnish the best the earth produces and at lower prices than others. Iowa Seeds lead the world. A. A. Berry lives on a farm in the best part of Iowa; raises much of their own seeds and sells at farm prices which are wholesale to farmers. **All Seeds fully guaranteed.** Be sure and get our catalog before you place your order this year. It fully describes our **$3,500.00 CASH** distribution and how you can easily get some of the gold. **Absolutely Given Away.** We can save you money by planting our Seeds. So say thousands of satisfied customers.

A. A. BERRY SEED COMPANY,
Box 64 **CLARINDA, IOWA.**

It takes $20,000 worth of postage stamps to mail

the Maule SEED

catalogue for 1905. It contains 152 large pages, full from cover to cover of illustrations and descriptions of **the best and newest things** known in horticulture. As the original introducer of Prizetaker Onion, Nott's Excelsior Pea, Davis Wax Bean, etc., etc., I know what I am saying when I make the statement that never before have I offered so many novelties in flower and vegetable seeds of real merit as this season. No up-to-date gardener can afford to be without this book, which will be sent free to all sending me their address on a postal card.

WM. HENRY MAULE,
Philadelphia, Pa.

SEEDS $1.50 worth to Test Free to Everybody.

I want every reader of this paper who plants a garden to send for my **Free Trial Complete Garden Collection,** consisting of the following **15** Grand New Varieties of Seed.

Beet, Perfected Red Turnip, earliest, sweetest, best. **Carrot, Yellow Giant,** monstrous size, great cropper. **Cabbage, July Wonder,** wonderful early, solid heads. **Cabbage, Winter Header,** large, fine, sure to head. **Celery, Winter Giant,** large, crisp, finest winter sort. **Cucumber, Family Favorite,** best for eating or pickling **Lettuce, Crisp as Ice,** early, tender, heads finely. **Musk Melon, Luscious Gem,** fine flavor, best known. **Onion, Prizetaker,** wt. 3 lbs., 1,000 bush. per acre. **Parsnip, White Sugar,** sweet, long, smooth roots. **Radish, Striped Triumph,** handsome, early, crisp. **Tomato, Early Tree,** early, large, red, tree shaped. **Turnip, Sweetest German,** large, sweet, keeps well. **Sweet Peas, 1-2 oz. California Giants Mixed,** grand colors **Flower Seeds,** large packet, 500 sorts mixed together.

I WISH to give you the above 15 packets as a Free Trial of my superior Seeds, believing that after one trial you will always buy of me. To prevent people sending who have no use for seeds, I ask you to enclose 10cts. as a guarantee that you will plant seeds and when received show collection to your friends. I will promptly mail the 15 packets (well worth $1.50) and enclose a due bill for the 10c., which you can return to me at any time with an order for 25c. or over of seeds, and get your selection of 10c. worth free. *This trial is absolutely free.* Catalogue free. All warranted, tested seeds supplied at about wholesale prices.

J. J. BELL, Deposit, N. Y.

This Potato Free

This **NEW POTATO** is just what everyone is looking for. Drouth and blight proof, and the earliest on record; nothing can equal it; best quality and smooth, while its yielding qualities are simply marvelous. We are raising stock to offer in 1906, but want to test it this year in every section of the country to make good our claims, and we offer **One Sample Potato** for testing free to anyone enclosing **10c.** to pay for postage and packing. It will be carefully packed from frost, and it is worth many dollars to those fortunate enough to get one.

Our New Seed Catalogue for 1905 is **free** and will be sent with every potato. If you enclose address of two families who buy seeds, we will include **Free Sample Great Corn Novelty** to be offered next year. Send to-day.

FAIRVIEW SEED FARM, Box 28, Rose Hill, N. Y.

Apple and Pear SCIONS

FIFTY VARIETIES.
L. F. DINTELMANN, Belleville, Ill.

green pods are almost a failure, owing to excessive rains in Michigan and Wisconsin, where most of the beans are grown, and it will keep some of us guessing to get seed enough for next spring's planting. If you expect to need beans, better order soon, for later they cannot be secured at any price, and even now most seed men will refuse orders for beans alone. When ordered along with other stuff they can generally be secured, but at pretty stiff prices.

Some Big Corn.

I have often heard of ears of corn fifteen inches long, but I never saw one till last fall. I had on my trial grounds some corn of a new variety, known here as the Jumbo, or Long John, that is enormously long, and I found one ear of it that was a good strong fifteen inches long and corn all the way. There were lots of ears over a foot and up to fourteen inches, but this was the only one I could find that was fifteen inches. Picking that kind of corn would be like loading stove wood.

A Valuable Sweet Corn.

We have just been working over our seed corn, and I am more than ever impressed with the value of the new "White Evergreen." It is sure the best late sweet corn that has appeared yet. I never saw as long grains or ones that shrivelled down so in drying.

It is whiter, too, than the Stowells. The ears are inclined to be shorter, but make up for it 'n increased diameter. My pile of seed of it is the prettiest pile of sweet corn I ever saw and it seems to me that as soon as people try it, the Stowells will pass away. I had intended to save a lot of it till spring in the ear, but it is so deep-grained and dry that it shatters badly in handling. We are picking it over and shelling it up.

A Town Without Poverty—and Without Saloons.

You have heard me speak often of this town being a good grain market, and the fact of its being free from poverty was strikingly brought out at the last Thanksgiving time. The custom here for years has been for the school children to bring a donation of fruit and eatables of all kinds the day before Thanksgiving, to be distributed by the Ladies' Aid Society among the few poor of the town. Last Thanksgiving donations were brought in as usual and turned over to the ladies, but the next day they were perplexed to find that there was absolutely not a family in the town who were not abundantly able to furnish their own Thanksgiving. Think of it, a town of 5,000 population and every family with plenty of their own Thanksgiving. Now, it may have a bearing on this, or it may not, but this town has never in its history had a saloon. No saloons and every family with its own Thanksgiving dinner. Do you think there is any connection?

HENRY FIELD.

Shenandoah, Ia.

All Kinds of Fruit Notes from Kansas.

Some time ago there was an article in The Fruit-Grower recommending sprinkling pear trees with salt water to prevent blight. We tried it once on several Bartlett trees six years old, which had shown some signs of blighting. Those trees will not blight again, for they are dead, down to the ground. We used different degrees of strength on each tree to test and the effect was about the same. We now have in bearing 1,450 trees of all varieties, from four to six years old, and have never lost more than fifteen trees from blight; twelve of these were Marguerite and the remainder were Bartletts. We expect to increase our pear orchard until we have forty acres, as they seem to do better on our soil than apples or peaches. We had five-year-old Kieffer trees which bore 385 pears this past season; a four-year-old Duchess tree had 185 pears, and all other trees were loaded about the same. We had a good peach crop, but on account of the wet weather the fruit rotted badly; did not sell a bushel from 900 trees. We are firm believers in the Ben Davis apple; of nineteen varieties, Ben Davis has paid dollars to any other variety paying cents. We are experimenting with different varieties of dewberries for this locality; of the four we grow the Lucretia is the only one which pays. We have 1,000 gooseberry bushes three to ten years old and believe there is more profit in this fruit than in any other small fruit. Houghton and Downing are our varieties; both are good, one excelling in some points and the other in others. We would not try to grow them without being mixed in planting, for we find the crops are much better where the varieties are mixed than where they are grown separately. We have a small orchard with apples and peaches mixed; do not think it a profitable plan on large scale, although for our purpose, to provide a windbreak, the plan works pretty well. Our orchard was mulched for several years, but we will discontinue the practice, for several reasons.

We believe in advertising, and run advertisements in the daily papers during the busy season, and have never had enough fruit to supply the demand. We believe this plan is far better than peddling the fruit.

Will be glad to furnish an article for The Fruit-Grower, giving our experience, and telling how we have always had our crop sold before it is ripe, and how we get best prices ever paid on this market.

If we had had The Fruit-Grower to help us when we first started our fruit business, it would have saved us hundreds of dollars. Couldn't do without it now.

PARSONS FRUIT-GROWING CO.
Parsons, Kan.

(Of course, we shall be glad to have you describe a plan by which the grower can advertise his fruits and make the business more profitable. Send this report so that it can be published before the opening of the next fruit season.—Editor.)

I like The Fruit-Grower very much and recommend it to all I come in contact with, who want a good farm and horticultural paper. I have received one copy within the past year which was worth the subscription price.—J. M. Campbell, Boise, Idaho.

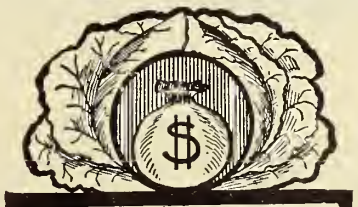
Try the New Majestic Tomato

The greatest vegetable novelty of the season. By all odds the largest, finest flavored and most productive in existence. Thousands of our customers who received small trial packages last spring wrote us in the fall that it surpassed all other sorts and produced 100 lbs. to 147 lbs. of fruit to the plant. Many reported single tomatoes, weighing 3 lbs. to 5¾ lbs. each. Just think what this kind of a crop would mean on an acre of ground. The fruits are not coarse grained and poor like other large sorts, but are smooth, solid, have few seeds, and are unsurpassed in quality. Of fine shape and beautiful color. Last year the seed sold at 40c per packet of 100 seeds, but this season, we have reduced price to 15cts., and in addition to this we are offering

$100.00 in Cash

prizes this year for the largest tomato grown. Our large illustrated catalogue describing the above and many other choice novelties will be sent free if you mention this paper.

IOWA SEED CO.,
Des Moines, Iowa.



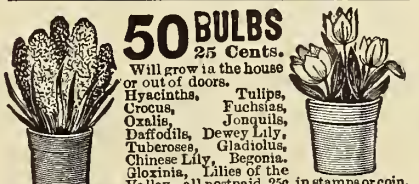
MONEY IN GOOD CABBAGE

My elegant **new book** for seed growers is a storehouse of rare seed information. Tells about my famous varieties of **money-making cabbage.**

WRITE TO-DAY **FREE** Mention this Paper

and I will send you a package of **Buckbee's New Early Marvel Cabbage** the best-growing variety on earth, together with a copy of my great Seed Book.

H. W. BUCKBEE
Dept. L 31 Rockford Seed Farms
Rockford, Illinois



50 BULBS 25 Cents.

Will grow in the house or out of doors.
Hyacinths, Tulips, Crocus, Fuchsias, Oxalis, Jonquils, Daffodils, Dewey Lily, Tuberoses, Gladiolus, Chinese Lily, Begonia, Gloxinia, Lilies of the Valley—all postpaid, 25c, in stamps or coin. As a premium with these Bulbs we will send FREE a giant collection of flower seeds — over 200 varieties.

Address, **Hillside Nursery, Somerville, Mass.**

OLDS' SEED SPECIALTIES

FREE SAMPLES

10 Great Seed Specialties

to every intending purchaser.

Swedish Select Oats. The U. S. Dept. of Agr. says: — "Now probably the best American Oat."

Macaroni (Durum) **Wheat.** Most talked about of all new grains. Production increased 150 fold in 3 years.

Reliance Y. Dent Corn. Best for So. Wis. and No. Ill. *Wisconsin-grown Seed Corn shipped on the ear.*

Mandscheurl Barley. Best of all barleys. Pure, clean seed.

Speltz (Emmer). The wonderful Russian grain. Outyields both barley and oats.

Japanese Millet (Billion Dollar Grass). Most valuable of all forage plants.

White Hulless Barley. Equal to wheat for feed and yields twice as much. Mont. grown seed, very fine.

Alfalfa. Best Am. grown seed. Large stock.

Old Gold Clover. Choicest grade Med. Red.

Silver Hull Buckwheat. Fancy Seed.

Samples all the above mailed *absolutely free* on request to every farmer who is a buyer. *80-page illustrated catalog of Seed Potatoes, Field Seeds, Garden and Flower Seeds also free. Gold Medal Awarded at St. Louis.*

L. L. OLDS SEED CO., Drawer S, Clinton, Wis.

Did you ever see 5 straight or circular rows of Pansies side by side, each a different color? If so, you know that the effect is charming. Did you ever see Childs' Giant Pansies, marvels in beauty and true to color? If not, you have not seen the best.

As a Trial Offer we will for 10 cts. mail 5 Pkts. Giant **Pansies, Snow White, Coal Black, Cardinal Red, Pure Yellow, Azure Blue;** also Five Pkts. **New Giant Sweet Peas** for **10 cts.,** White, Pink, Scarlet, Blue, Yellow; also Five Pkts. new early flowering **Carnation Pinks** for **10 cts.,** Scarlet White, Pink, Red and Striped—

or All 15 Pkts. for 25 cts.

Our Catalogue for 1905—Greatest Book of Flower and Vegetable Seeds, Bulbs, Plants and New Fruits. 148 pages, 500 illustrations, many plates —will be **mailed Free.** Scores of Great Novelties.

JOHN LEWIS CHILDS, Floral Park, N.Y.

CORN WANTED AWARDED 7 MEDALS WORLDS FAIR 1904 **WE WILL PAY**

$1.00 PER EAR

GREATEST OFFER EVER MADE

We want you to try our New Corn

Nichol's Gold Bond

the handsomest and largest yielding variety ever introduced. To the party who will send us the 50 largest and best developed ears, grown from the above named variety. **WE WILL PAY A**

CASH PRIZE OF $50 IN GOLD

SEND FOR FREE SAMPLE PACKET AND GET IN THE RACE. Winners' Photographs will be published. Full description of this wonderful new Corn will be found in our Big 1905 Catalog of **"PURE AND SURE" SEEDS,** describing and illustrating everything for the Field, Garden and Lawn at wholesale prices—direct to the consumer. It's Free. Write today.

ST. LOUIS SEED CO.
651-653 N. Fourth St., ST. LOUIS, MO.

OUR SEEDS

Fruit and **Ornamental Trees, Etc.,** have been the standard of excellence for half a century. We mail postpaid, **Seeds, Plants, Roses, Bulbs, Vines, Small Trees, Etc.,** and guarantee safe arrival and satisfaction, larger by express or freight. Direct deal insures you the best and saves you money. Try us. Your address on a postal will bring you our elegant 168 page catalogue free. Correspondence solicited. 51 years, 44 greenhouses, 1000 acres.

THE STORRS & HARRISON CO.,
Box 40, PAINESVILLE, OHIO.

GREAT BARGAINS in

SEEDS

To gain new customers will send
10 Pkts. Vegetable Seeds
10 Pkts. Flower Seeds for only **25c**
Fine Catalogue Free. Gardeners Ask for Wholesale List.

ALNEER BROS.,
No. 17 A BLK., ROCKFORD, ILL.

J. G. PEPPARD BUYS AND SELLS

MILLET, CANE, KAFFIR, POPCORN, SEED CORN, ALFALFA, TIMOTHY, CLOVER AND ALL KINDS OF **FIELD AND GRASS SEEDS**

1101 to 1117 West 8th, Near Santa Fe St., KANSAS CITY, MO.

J. H. Hale's Orchards

Something About His Experience With Peaches

Everyone who has heard J. H. Hale talk at a horticultural meeting—and he sure will talk if anyone gets a chance—cannot have failed to be impressed with the fact that he enjoys his experience growing fruit. In fact, he says he gets lots of fun out of the business, and so he does. But at the same time he gets considerable money from the business. Several years ago Dr. Hale contributed an article to the World's Work, telling of his experience as a peach-grower and now, while some persons are discussing the question of whether fruit culture can be made profitable—as, indeed, some persons are discussing it, after several years of short crops—we want to quote part of this article, with the permission of the publishers of the magazine, to show what an optimist thinks of the situation. It should be said, however, that Mr. Hale is a rare man when it comes to developing a fruit farm, and the average man can succeed far better growing fruit on a limited scale than to attempt large operations, such as this gentleman has in Georgia.

In this article Mr. Hale says that, while yet a young boy, he had been interested in fruit culture, but he adds: "My father died in my early boyhood and mother and children were kept hustling to get a living and keep up the interest on the mortgage. A shovel, a spade and a little old hand-cart were our only implements. The question of how to start a peach orchard had to give way to the more pressing question of how to get enough to eat from day to day. At 12 years of age I went to work by the month for a neighboring farmer, and one September day, cutting cornstalks near the top of a high hill overlooking the valley of the Connecticut, I came across a seedling peach tree, right there in the cornfield, loaded down with ripening fruit; rosy, red little peaches, sweet and delicious.

"Tired and exhausted from the heavy work of handling the cornstalks, I sat a long time under that tree, eating peaches and dreaming of the peach orchard I would have if ever I got money enough to buy the trees; and I believe that the joy in the thought put such life into me that the extra work I did that afternoon more than made up for the time lost under the peach tree.

"Continuing to work out by the month on the farms, the fall I was 15 found me with savings of nearly $100 in cash. The winter following was my last school. I had been reading everything I could get on horticulture and by spring I was ready to invest my cash in fruit trees and plants. As quick returns must be had, the start was made with strawberries and raspberries. Some cash came in the following June, and then the quarter-acre of my beginning was increased to an acre, and later to four or five acres."

Then he tells of how his first small orchard was started; how he made a trip through Delaware to study varieties and methods, looking to the enlargement of his work. Investigation convinced him that on some of the hills in Connecticut were excellent locations for peach orchards; that the temperature was higher on these high places than in the valleys below. Accordingly he strained to the utmost his resources and, relying on the help of the berry field, he managed to plant 10,000 trees. This was a critical time in the work, for Mr. Hale says:

"After five years of thorough culture the trees had just come to full fruiting age, when three very severe winters in succession killed all the fruits buds. Deeply in debt as I was and faced with the necessity of borrowing more money to maintain the standard of culture I believed in, my friends and well-wishers now advised the abandonment of the enterprise, without sinking more money in what seemed to them a hopless endeavor. Anyhow, they said, the trees would live awhile without culture, and it would be time enough to spend more money on them when they showed some signs of fruiting. But with my hand once to the peach plow I did hate to turn back, and then, thinking how the Lord hates a 'quitter,' I began hustling to borrow more money. It was a hard struggle, but a record of reasonable industry, coupled with good habits, enabled me to find bankers who were willing to loan money on faith and energy when there was no better collateral in sight.

"A year or so later, when I had reason to expect the first paying crop of peaches, a church society, whose members were largely tobacco farmers, asked for further security above the first mortgage they held on all our property, or else the payment of the loan. These people could not feel that the church money was safe when an attempt was being made to grow so uncertain a crop as peaches on what might otherwise be good tobacco land. The church authorities, however, gave us three months to adjust matters to their satisfaction."

Then Mr. Hale tells how he had promise of a crop, and, desiring to get good fruit, he deliberately picked off more than three-fourths of the small peaches, greatly to the disgust of friends who could not understand that he was thus insuring larger and finer fruit.

"As the fruit approached ripening, plans for marketing that had been years maturing in my mind were licked into shape. It had cost so much money and waiting to reach this first crop that it seemed necessary to get all possible profit out of it. Determined to be my own salesman, I leased a vacant store in the nearb-by city of Hartford, and a month before peaches were ripe hung out a large banner announcing that a big lot of 'home-grown peaches, ripened on the tree,' would be on sale there at a certain date. Then I visited the leading towns in Connecticut, Massachusetts and Rhode Island, seeking out in each town one retail grocer or fruit dealer, who handled high-grade goods. To him I told my little story of soil and variety selection, tillage, pruning, fertilizing and fruit thinning.. I told him how the fruit was to be gathered fully ripe, day by day, as it came to maturity, carefully assorted in three sizes, rejecting all unsound or imperfect specimens, packing the selected fruit in new baskets made of the whitest wood obtainable, every basket to be rounding full of perfect fruit of the same grade from top to bottom. I told them there would be a label on every package, giving the grade, and guaranteeing uniformity of packing; that I was jobbing the fruit myself; that prices would probably be 25 or 50 per cent above the market rates, but that the fruit would be worth it; and that I was prepared to give an exclusive agency to the one dealer in each town who would push the goods into the best family trade.

"Some took these statements one way and some another, but, to sum it all up, it amounted to about this: 'Young man, you tell a pretty good story; you look honest, and probably mean to do as you say, but we have never seen any peaches packed and handled that way, and we question whether it is possible for any farmer to do as you say.' A few gave me small orders, and others promised to visit the orchard and salesroom when preaches were ripe.

"When the crop began to come in, liberal advertising in the Hartford papers started sales at once. The few outside trial orders gave such satisfaction that orders came pouring in faster than there were peaches to suppiy them, so that after the first week of the season, the daily orders were far in excess of the suppiy, and prices were advanced to 'what the traffic would bear.' It was all cash trade, too.

"With a girl to book orders and look after the cash, one boy and I worked in the store every night from 6 to 11, taking the fruit from the big wagons as they came from the farm, anw making up the out-of-town orders. Up again at 4 a. m., we supplied the Hartford and local trade, after which came a drive of eight miles out to the farm, there to spend the day assisting at the harvest or toning up the weak places in the plan of picking, assorting and packing. I soon found that men, however honest, would occasionally sneak the best peaches to the top of the baskets and that woman, with quicker eye, deft fingers and natural honesty, made much better packers.

"Long days, hard work, and lots of fun there were in that first crop; but the greatest pleasure of it all was the signing of what then seemed a big check for $2,100, that paid off the mortgage on the farm, and gave the church people a chance to re-lend the money on a Kansas farm 1,500 miles away, where they could not see the borrower daily if he should depart from the orthodox ways of the nelghborhood to branch off in the heresy of a new agriculture. That peach harvest rounded up nearly $10,000 profit, from a farm that my neighbors thought three months before was not good security for a loan of $2,000. All other debts were paid, and the entire surplus was promptiy invested in fertilizers for the orchard. Winter's frosts destroyed all hopes of a crop the next season, and money had to be borrowed to keep things going; but only for a little while, for 1889 gave a banner crop of superb fruit, which, marketed as before, gave

J. H. HALE'S GEORGIA PACKING SHED.
Mr. Hale in the Foreground.

DON'T USE A BROOM!

You Cannot Sweep Back

the tide with a broom, try you ever so hard. It is not natural, it cannot be done by artificial means. Nature can cause it to flow back, can put dry land where before was water, and does it every time it rolls forward, **but in her own way and her own time.** It is the same with **your disease,** the disorder which is consuming you, eating your vitals. You cannot sweep it back, cannot cause it to recede and fade away by **the use of artificial drugs, never intended by nature to go into the stomachs or to enter the veins of man,** drugs which are like straws in a heavy wind and have no more force, or power to check the onward march of the disorder, than has the eager, anxious sufferer to sweep back the waves of the ocean.

Nature can cause every sickness to roll back into the depths from which it came, can put **solid, substantial, hearty health** into a body which before was flooded with disease, saturated with decay, racked with pain, but she does it in her own way, uses her own remedies, follows her own means and it is **foolhardy and dangerous to attempt to change her.**

It is wasting time, precious time, to seek to sweep back the rushing tide with a broom made of sweet-tasting, sweet-smelling pills, lotions, tablets and compounds made to sell and to sell only. **It is combating nature, not helping her,** and nature is too strong to be combated successfully. In Vitæ-Ore,

NATURE HAS PROVIDED A CURE

A cure as sure, as certain, as regular in its action as the tides of the ocean, and she guides its course, directs its work in the human system, by the same immutable, unchangeable laws as she guides the waters of the mighty deep. She has in Vitæ-Ore, **the most wonderful creation of which man of to-day has knowledge,** combined the subtle elements of iron, sulphur and magnesium, elements which hold the same inexplainable attraction for disease as the moon holds for the tides, and combined them in a manner of her own which man's inventive and creative genius has been unable to duplicate or counterfeit. She placed it in the ground, ready for his hand, for what purpose if not to relieve and cure the ills of mankind. You can test it, **can judge for yourself,** and it will not cost you a cent to do it. It is different from all others and can be offered in a different way, a way that "sellers of medicines" dare not duplicate. If you are sick and tired of quacks, sick of dosing yourself day after day with each sunrise finding **no change in your condition,** if you are sick of being imposed upon, try this **natural curing ore. IT WILL NOT FAIL YOU!**

Read Our Special Offer:

WE WILL SEND TO ALL Subscribers or readers of this paper a **full-sized $1.00 package of VITÆ-ORE,** by mail, POSTPAID, sufficient for one month's treatment, to be paid for within one month's time after receipt, if the receiver can truthfully say that its use has done him or her more good than all the drugs and doses of quacks or good doctors or patent medicines he or she has ever used. Read this over again carefully, and understand that we ask our pay only when it has done you good, and not before. If not, no money is wanted! **We take all the risk, you have nothing to lose.** If it does not benefit you, you pay us nothing. We give you thirty days' time to try the medicine, thirty days to see results before you need pay us one cent, and you do not pay the one cent unless you do see the results. **You are to be the judge!** We know Vitæ-Ore! **WE WILL TAKE THE RISK!**

FROM THE EARTH'S VEINS TO YOUR VEINS

A COMPLETE BREAKDOWN.

Had No Strength, Heart Was Weak, Could Not Rest.

For years I was troubled with a complete breaking down of the system. My strength left me entirely and I was as weak as a child, often feeling as though I had not strength to breathe. My heart was so weak it seemed as though it would stop beating, and my family was afraid I would die of heart failure. I took a great deal of medicine, but none of it did me any good; I was always so tired and could not rest and often cried with weakness. I bought a medical electric battery, and, although it gave me some relief, it was only temporary. Vitae-Ore was then brought to my attention by an advertisement. I have used it now for three mouths' time and cannot praise its curative powers too highly, for I am now strong and feel better than ever before in my life. Vitae-Ore has done all this for me and I will always be ready to speak highly of this remedy. MRS. JNO. E. DAVIS, Box 373, Parry Sound, Ont.

MAKE NATURE YOUR DOCTOR

WHAT VITÆ-ORE IS:

Vitæ-Ore is a natural, hard, adamantine, rock-like substance—mineral—ORE—mined from the ground like gold and silver in the neighborhood of a once powerful, but now extinct mineral spring. It requires twenty years for oxidization by exposure to the air, when it slacks down like lime and is then of medicinal value. It contains free iron, free sulphur and free magnesium, three properties which are most essential for the retention of health in the human system, and one package—one ounce of the ORE, when mixed with a quart of water, will equal in medicinal strength and curative value 800 gallons of the most powerful mineral water found on the globe, drank fresh at the springs. It is a geological discovery, to which nothing is added and from which nothing is taken. It is the marvel of the century for curing such diseases as

Rheumatism, Bright's Disease, Blood Poisoning, Heart Trouble, Dropsy, Catarrh and Throat Affections, Liver, Kidney and Bladder Ailments, Stomach and Female Disorders, La Grippe, Malarial Fever, Nervous Prostration, and General Debility,

as thousands testify, and as no one, answering this, writing for a package, will deny after using. **VITÆ-ORE** has cured more chronic, obstinate, pronounced incurable cases than any other known medicine and will reach such cases with a more rapid and powerful curative action than any medicine, combination of medicines, or doctor's prescription which it is possible to procure. If yours is such a case, do not doubt, do not fear, do not hesitate, but send for it!

Vitæ-Ore will do the same for you as it has done for hundreds of readers of this paper if you will give it a trial. Send for a $1.00 package at our risk. You have nothing to lose but the stamp to answer this announcement. We want no one's money whom Vitæ-Ore cannot benefit. You are to be the judge! Can anything be more fair? What sensible person, no matter how prejudiced he or she may be, who desires a cure and is willing to pay for it, would hesitate to try Vitæ-Ore on this liberal offer! One package is usually sufficient to cure ordinary cases; two or three for chronic, obstinate cases. We mean just what we say in this announcement, and will do just as we agree. Write to-day for a package at our risk and expense, giving your age and ailments, and mention this paper, so we may know that you are entitled to this liberal offer.

You Are to Be the Judge

A DOCTOR TESTIFIES.

I have used Vitae-Ore personally for some time. I was troubled with Bright's Disease, my feet being so swollen at times that I could not wear my shoes. This condition was further complicated by Gastralgia (pains in the lower part of the abdomen), and altogether I was much distressed. All of this has left me, I using nothing but Vitae-Ore, although previous treatment, persistently followed, showed no visible abatement. I will say further that I have used this remedy in my practice with a degree of success that I have never attained with any other remedy, and I shall continue to use it as long as I can procure it. Dr. G. W. SMITH, Minneapolis, Kas.

OLD PEOPLE.—For the aged there is nothing better than **Vitae-Ore.** The loss of appetite and general breaking down of the digestive organs is delayed, the blood purified and enriched, the vital organs are strengthened and a peaceful old age may be enjoyed by the use of this natural remedy without drugs.

NOT A PENNY UNLESS BENEFITED

☞This offer will challenge the attention and consideration, and afterward the gratitude of every living person who desires better health or who suffers pains, ills and diseases which have defied the medical world and grown worse with age. We care not for your skepticism, but ask only your personal investigation, and at our expense, regardless of what ills you have, by sending to us for a package. ADDRESS

THEO. NOEL CO. W. F. G. DEPT. Vitæ-Ore Bldg. CHICAGO, ILL.

net profits from thirty-five acres, of over $24,000."

Then Mr. Hale tells how others planted peach orchards, not only in Connecticut, but in other New England states; reference is made to the building of a trolley line past his farm, and when the next peach crop came these cars were used to haul the baskets of peaches to the city, this being the first time that trolley cars were put to this use. This service, it may be said, is still maintained.

But how about the Georgia orchards? Well, they came later. In 1890 Mr. Hale made some special investigations concerning the fruit industry in this country, for the eleventh census report. In this work he traveled over the fruit-producing sections of the country, and in Southwestern Georgia, on the line of the Central Georgia railway, not far from the old Andersonville military prison

MR. HALE'S TROLLEY PEACH TRAIN.

site, he found what he thought was an ideal peach country. But let him tell the remainder of his story:

"Near Fort Valley in Houston county, is a broad, level plateau, elevated nearly 500 feet above sea level, with a rich, brown loam, underlaid by red clay. I found old native peach trees fruiting nearly every year, and the location seemed the most southerly limit of our country, where the best strains of peaches can be perfected. Land was cheap and good negro labor abundant. A few planters had made quite a start in orcharding and I could see that here the large and late peaches of the north could be ripened and got into market ahead of the small and inferior early varieties of the middle states. About 100 acres was the limit of my ambition and my bank account, but when I found that the best plantation in all that region was for sale at a moderate price, and that its thousand acres would only be sold in one tract, I promptly took an option on it, thinking I could interest people at the north, sell it out in blocks, and keep for myself the 100 acres or so I wanted. But no one had

AN AVENUE IN A GEORGIA PEACH ORCHARD.

faith in the enterprise, even though I offered the land at cost.

"On further thinking the matter over I could see that a large orchard could be handled much better and cheaper proportionately than a small one; so I borrowed the money, bought the whole tract, and undertook to organize a stock company to equip and run it. Falling at first in this endeavor, I found a horticultural friend in the west who wanted to try the southern climate, and who agreed to invest $20,000, take one-half interest and superintend the enterprise. I went ahead at once and contracted for 125,000 trees and a carload of farm machinery and supplies. Just at this time another peach crop on the Connecticut farm furnished the money to pay for the southern land, and things seemed to be coming my way, when the promised western partner, unable to realize the expected cash, dropped out of the enterprise. Trees and machinery had been shipped and must be paid for, while to connect them with the farm and keep things going would take much money. I did not want such a vast orchard, but it was too late to turn back; wherefore I explained the situation to my banker that it was 'money or bust.' He agreed to advance the $15,000 necessary to start the enterprise, with a caution not to exceed the amount and call for more.

"Taking from the Connecticut farm a few laborers skilled in orchard work I reached Georgia in early November, 1891, only to find the plantation house burned. It took us three weeks to erect a barn, and with the mules on the ground floor we made our quarters in the loft, and a jolly winter was spent. A surveyor was employed to locate a central avenue through the place, and the whole was platted out blocks 500x100 feet.

"Trees are cultivated mare easily if in proper alignment; so after the field was plotted, I set the surveyor running lines for the rows of trees. He had not been working long when one of the old plantation darkies came, hat in hand, and said: 'Cap"n, I dun reckon it cost a right smart o' money to do it dat way. Lulu and I can do it a heap sight quicker, and I reckon about as well as dat ar man wid de machine.'

"On inquiry, I found Lulu was his old gray mule. I had my doubts, but at his earnest pleading consented that he should make a trial on a corner block, where it would not show much. Old Henry cut three long, straight poles from the woods; then some tufts of cotton were tied around the tops of the poles to make them white and more easily seen at a distance. The poles were just the length of the distance wanted between the rows, so a standard of measure was always at hand. Placing one pole perfectly upright on the corner of a block, where the first row was to stand, Lulu was headed for the further end of the field, keeping the poles always in sight midway between her long, upright ears, so that Henry had a 'sight'

"The trees to be planted were small, and when the rows were all lined out, instead of following the usual custom of digging a deep hole two or more feet in diameter, placing the trees in position and filling about the roots with earth, I sheared the roots so close that one thrust of a spade into the mellow cotton land made an opening large enough to receive them, and a little tramping set them firmly in place. I planted the first trees with my own hands, and this novel plan of not digging any holes made it the cheapest job of planting on record."

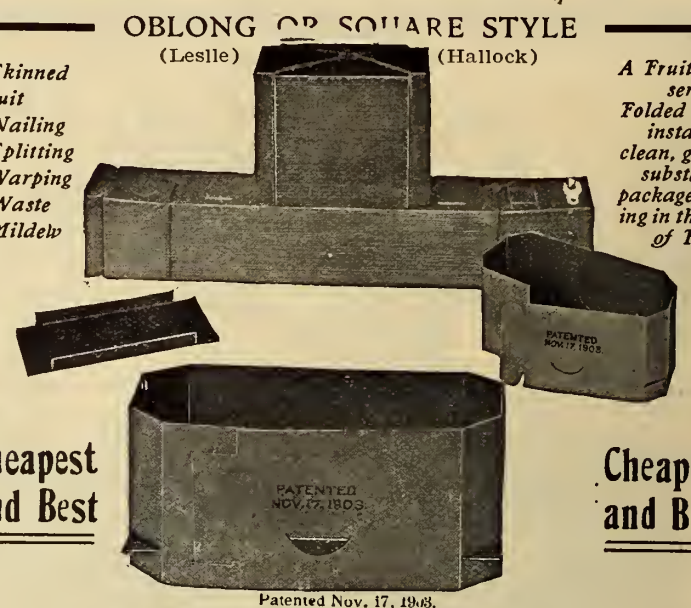
The story then recites how nursery stock was grown, a large corn crop harvested, so that the first year the farm had an income of nearly $8,000. A stock company was then organized, but only two outsiders could be induced to invest—one a merchant, the other a farmer. Packing sheds were erected and preparations made for the first crop, which came the fourth year. Advertisements were placed in the

NATIONAL BERRY BOX

OBLONG OR SQUARE STYLE
(Leslie) (Hallock)

No Skinned Fruit
No Nailing
No Splitting
No Warping
No Waste
No Mildew

A Fruit Preserber—Folded in an instant—a clean, glossy, substantial package, aiding in the sale of Fruits.



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Patented Nov. 17, 1903.

THE IDEAL IN REALITY

Made of tough folding paper stock coated with parafine wax on both sides, is water and juice proof. Will not mildew in any atmosphere or climate. The paper stock used is always smooth, therefore will not break the tender skin of the berries, (so often in wooden boxes), causing premature decay of fruit, (hence a fruit preserver). To lose one crate of berries, will cost nearly as much as one thousand good cups. So consider, buy the best, the only cup and the coming one. Known, within one year's existence, all over the Union and universally admired. No Trust. Boxes always to be had at right prices. No excuse to have fruit spoil in fields, if cups ordered in time.

Price, $3.00 per 1,000 in car-load lots, f. o. b. Kansas City.
Order early to avoid rush and possible disappointments. Address

NATIONAL PAPER BOX CO.
KANSAS CITY, MISSOURI
Leaders in Printing, Paper Folding and Made-up Boxes

CHERRY TREES LEADING VARIETIES

PEACH TREES. General list of varieties. Long on Elberta; largely medium, 3 to 4 and 2 to 3 ft. grades.

APPLE TREES. 25,000 Ben Davis and general list of varieties.

General line of other stock. Send list of wants for prices.

VINCENNES NURSERIES
W. C. Reed, Prop., Vincennes, Ind.

OLINGER'S
Dibbler & Transplanter

The only practical Dibbler ever made for setting, transplanting, fertilizing dry or liquid; weeding lawns or other purposes. Price 50c by mail. (Patented.)

J. J. OLINGER & CO.,
200 West 44th St., New York.

5,000,000 Strawberry Plants

All of the best old and new varieties; plants best on market; cheapest to buy. Read what a customer says: "6,600 strawberry plants received in best condition; good roots; planted, are growing nicely; many thanks for your kindness. —D. R. Grigg, Greenville, Ill." We guarantee safe delivery. Catalogue free. Write today and save money. Address

W. S. Perdue & Sons, Parsonburg, Md.

2,000,000 Strawberry Plants

For spring of 1905; also a good stock of Blackberries, Grapes, Currants and other small fruit plants; all the standard varieties as well as many new ones. Our stock is A. No. 1; prices low, satisfaction guaranteed. We have had 26 years' experience in this business and believe we can ship you plants that will give satisfaction. Send for free catalog that tells how to grow berries.

R. D. McGEEHON, ATLANTIC, IOWA.

BERRY BOXES
BERRY CRATES
AND BEE SUPPLIES
Send to the
SHEBOYGAN FRUIT BOX CO.,
Sheboygan, Wis.
Liberal Discounts on Early Orders.

When writing to advertisers, always mention The Fruit-Grower.

newspapers, calling for help to harvest the crop, and intelligent whites came in great numbers; hundreds of extra negroes were called in, and all camped on the place in their own covered wagons, tents and newly constructed barracks.

"Families from Florida, who owned small places, in the idle season of midsummer made the trip of 300 miles in covered wagons, camping along the way. And now, as the orchard has increased, there annually come to us from the truck and fruit farms of Florida from fifty to seventy-five people, who count as their only summer outing the two months spent in the Georgia peach harvest. A hotel or lodging house on the place now accommodates a little over 200, room and bed being free to those who are willing to conform to the simple rules of decency and good order. Meals are furnished at cost, which is about 12 cents, for an abundance of wholesome food in variety, and yet a majority a majority of white people always prefer to bring their own cooks and provisions from home and rig up a little camp, while others form clubs, buy their provisions from the commissary on the place and hire some old aunty to cook for them at her cabin at 25 cents a week for each person, and 'de chillen take de leavin's.' Two negroes board 100 or more of their own race; others club and cook together about their campfire, while many buy from the commissary what they eat from meal to meal. Of the more than 700 people on the place in the fruit season, all must be fed on the spot and, as a majority of them arrive without funds, rations must be advanced until pay day comes around.

DISPLAY OF GEORGIA PEACHES.

"With the blacks constant care must be maintained to keep them from eating up their wages before they are earned. The boys and girls resort to all sorts of tricks to get double rations; George Washington Jones, after loading up as heavily as the office will allow, turns up later as 'Wellington Smith' and gets another order, while Smith is away in the field at work.

"The blacks dislike to work after noon on Saturdays, and we have learned to adjust the year's work to this plan. In the fruit season, however, as it is necessary to crowd the work at all times, no one is hired who will not freely agree to work all day Saturday if wanted; and yet on Friday evening, or Saturday morning, 350 out of the 400 darkies come up with some apparently good excuse to be let off for the afternoon. Sick wives, mothers, fathers, children, brothers and sisters, dead or dying, are the usual Saturday morning trou Saturday morning troubles. Letters, and sometimes telegrams, are brought in as evidence, and great tact and patience are required to select the one true story from the ninety and nine that have gone astray. I must confess that they are too smart for me, and I would often get fooled if my assistants were not more shrewd in detecting the shams.

"One Saturday in July I same upon a boy of 15 or 16 crying as though his heart would break. In reply to my inqu'ry, I was told 'Mother is dead and I want to go home.' Of course, I said to him, 'Well, go and see the superintendent, and he will give you an order on the office.' The boy moaned, 'I dun see him and he won't let me off till bell time.'

"This seemed hard, when one boy's work counted for so little among 700; so I took him in the buggy and hurried back to the office, giving an order that he be paid off and let go at once: but I was politely told that 'the superintendent's orders are that no one is to be paid until night.' After I had insisted in rather strong language that I might possibly be a bigger man than even the superintendent, the lady assistant began a series of sharp questions, finally bringing out the date of 'mother's death' as 'de 26th of last Feb'ry.' I sneaked off, realizing that there were some phases of the peach business I had better not meddle with.

"Bridal couples, both black and white; ministers, lawyers, editors, artists, doctors, magazine writers, students, school teachers and college professors; bright tramps from the best plantation homes in the south; 'Georgia crackers' and blacks of all degrees, make up the forces of the farm in fruit season. The first crop of Georgia peaches was marketed in 1895 so successfully that the orchard was promptly enlarged, until now more than 225,000 peach and 40,000 plum trees can be seen from the lookout on top of the central packing shed and it is a drive of nearly thirty miles to cover all the avenues in the orchard. A railroad track runs directly to the packing house. An evaporator capable of working up 600 bushels of peaches a day utilizes and fruit not fit for shipment. Nursery trees by the

Opportunities
Along the
Cotton Belt Route

UNUSUAL opportunities exist along almost the entire Cotton Belt Route for colonizing and settling up of cheap lands. Favored with a mild, temperate climate, with good water, abundance of timber for building and fuel purposes, and possessing a general fertilty of soil adapted to diversified crops, it would seem there is hardly a factor lacking to convert this section into one of the richest farming districts in the world.

Aside from purely agriculture, this country is becoming notable as the natural home of many fruits and berries, also of early vegetables grown for Northern markets. Possessing the greatest available supply of hardwood timbers, it offers an industrial field in the manufacture of nearly every article employing that material.

The fact that Northern people are going in and successfully developing the country confirms its possibilities. But the area subject to development has scarcely been touched. What is needed is an organized plan, by persons of means and ability, to plant colonies where individuals are now locating. Large tracts can be secured through purchase or option. People are inquiring about the Southwest, therefore the time is propitious. The situation calls for someone big enough to grasp the proposition, with the facilties to carry plans to a conclusion. Ample reward is certain to follow. Almost needless to say the Cotton Belt will welcome inquiry and condially co-operate in any practical plans toward this end. Interested parties are invited to correspond with

COTTON BELT ROUTE

E. W. LaBEAUME
General Passenger & Ticket Agent
St. Louis Southwestern Railway
ST. LOUIS, MO.

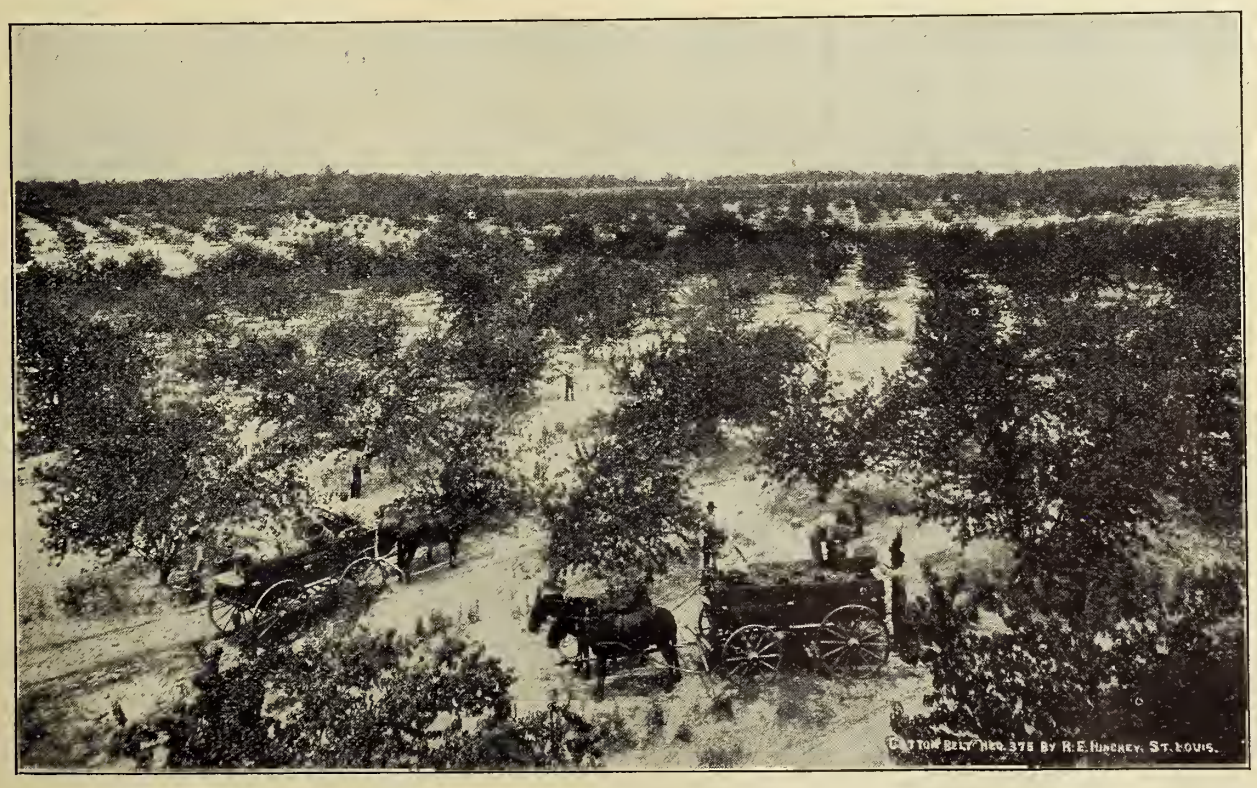
GREAT DISC PLOW OFFER.

FOR $24.75 we sell the highest grade and best disc sulky plow made (no side draft), lightest draft, strongest, most simple and greatest capacity of any

plow made, for old land or stubble, any land where corn or small grain is raised. It plows deeper, pulverizes better and gives about double the capacity of any landside sulky plow made. Will plow a furrow 10 to 16 inches wide, 6 to 10 inches deep, as desired. Don't use the old landside moldboard and share walking or sulky plow, when you can do double the work and do it better with our **New Disc Sulky.**

FOR FREE TRIAL OFFER, for our liberal pay after received offer, our guarantee, cut this ad. out and send to us and you will receive by return mail a special catalogue, large illustrations and descriptions, and the most **wonderfully liberal plow offer ever heard of.** Address,

SEARS, ROEBUCK & CO., CHICAGO.



This is a view of an East Texas peach orchard on the Cotton Belt Route, the home of the Elberta. Trees begin bearing at three years; fruit is large and exquisitely colored, and, maturing for market in June, commands top prices. Land sells for $10 to $15 per acre unimproved, and can be made to yield $300 to $500 an acre in orchard.—Courtesy Cotton Belt Route, Gen'l Pass. Dept., St. Louis, Mo

AT STUD

English Setters and POINTERS

Ortiz Pride, fee.....$10
The Pointer. Ortiz Du Quoin. fee. 10

Pups and aged dogs for sale at all times. Also fancy saddle and harness horses, Shetland Ponies and Shorthorn Cattle. A choice lot of Peach and Apple Trees for fall or spring shipment.

M. B. GUTHRIE, MEXICO, MO.

Five Million Strawberry Plants

Blackberries, Black and Red Raspberries, Rhubarb, Bulbs and Flower Roots. Plymouth Rock, Buff Cochin Eggs for hatching. ALVA Y. CATHCART, Bristol, Ind.

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hundred thousand, corn to fed the darkies and mules on the place, and 150 to 200 acres of fancy canteloupes are the annual production.

"From the Saturday before Christmas to the Monday after New Year's is holiday time, after which the year's work begins. The trees are pruned to make them low-headed, so that the fruit may be harvested without use of step-ladders, and the resulting broad, open top lets in sunlight and air, to add color and quality to the fruit. Then comes the spraying, for we do all that science and practice can suggest to check the ravages of insects and fungous pests, to the end that every specimen of fruit may be the best and most beautiful of its kind.

"Gang plows, revolving harrows and other implements of orchard culture, in connection with the best obtainable fertilizers, keep the more than 2,000 acres of orchard land soft, clean and mellow until the approach of the harvest season, when it is all seeded with invaluable cow peas, which shade the ground through the heat of late summer and early fall, while at the same time gathering the free nitrogen of the air to enrich the soil for future crops.

"As soon as danger of spring frosts is over and the fruit is well set, so that a crop is assured, material for crates and baskets is brought in by carloads in 'shooks,' and we begin to take on extra help, who are put at work making crates, pasting labels on both baskets and crates, and storing them away ready for the quickest use in harvest season. Thinning out the little green peaches, which helped to the first great success in Connecticut, is carefully practiced in the Georgia orchards. Three hundred large, perfect peaches from one tree will weigh more pounds, fill more crates and sell for more money than would a thousand or fifteen hundred peaches from the same tree over-crowded, and the quality is far superior.

"After the thinning season, crate-making is continued, wagons are fixed, barracks and camps put in order and everything braced up for the coming rush. A trip is made all through the consuming territory at the north; commission men and leading retailers are told fully and freely of crop prospects, visits are made to general freight agents and officers of the leading railroads, and a personal interest awakened that is beneficial to all concerned.

"As soon as the peaches begin to ripen the most experienced pickers are placed in charge of gangs of ten to fifteen, which are later increased to forty or fifty. Every picker has his number stenciled on a little canvas sack, in which are tickets of corresponding numbers, one of which is dropped in the bottom of each basket. All pickers are taught to recognize a matured peach at sight and they are touched by hand only when ready to be picked.

"Careful inspection of the fruit in each basket as the harvest proceeds tones up the quality of the pickers' work. Wagons, with hundreds of extra baskets, are always at hand, including two or more boys with each gang to 'tote' baskets, so that the harvesters may lose no time looking for empties. Low-down spring wagons, drawn by small mules, creep in and out among the trees and haul the fruit to the main avenues, where the baskets are loaded on large floats on their way to the great central packing house.

"White labor is used entirely in the packing shed, and at two long tables running the full length of the great building stand the men and women who, under careful instruction, take the fruit from the field baskets and assort it into three sizes, placing in canvas trays in front of them. All inferior or over-ripe specimens are laid aside for the evaporator. If any baskets show a lack of skill or care in picking, the ticket in the bottom tells where to look for the trouble. Notice is given to the inspector, and fron him to a field foreman, who gallops away on horseback to brace up the weak brother. The sorters save all the tickets found in the bottom of the baskets, and each is given due credit for tickets turned in.

"On the opposite side of the sorting table stand the packers, who take the peaches from the trays and carefully pack the six baskets in each crate soldly full. Each grade requires a particular style of pack to get all the baskets rounding and full every time. Several expert instructors in packing work up and down the line constantly, watching the work, and when a package is complete the packer's number is put in the crate label and on a ticket on top. A helper supplies a new crate and takes the full one to the nailing table, where it passes final inspection, and if not perfect in every way it is sent back for repacking. Every hour through the day the tickets are taken to the office and a record made of all picking, sorting and packing, so that at all times the superintendent and myself can know just how things are moving and what each individual is doing.

"As soon as covers are nailed on the crates they are rushed into the refrigerator car waiting alongside, and the 560 or more crates that go in a car are so spaced that there is a circulation of cold air about each one at all times in transit. These cars are iced up twelve to twenty-four hours before loading begins. The warm fruit starts the ice to melting fast and in a few hours, when the fruit is cooled, from two to three tons more of ice are required to fill the bunkers. In the fifty hours' running time to New York the cars are re-iced three times, and those going to New England points once again at Jersey City.

"Bad weather in harvesting, a neglect to re-ice a car in transit, arrival at unseasonable hours, bad weather, or an over-crowded market on the day of sale—any one of these—may cause the fruit to sell far below actual cost of putting up and delivering, to say nothing of cost of production.

"The packing shed is a cool, airy place, comfortable at all times in the hottest weather, yet the days are long and busy, and noting that the workers were tired and languid by night, four years ago I tried a plan of resting them with music. A good string orchestra of six pieces was hired to play each afternoon from 2 until dark, or until all work was finished. There was soft, quiet music for an hour or two, and then quick, lively airs until the finish—music all the time.

"It was a rested, happy crowd that left the shed every night after that, and I felt well repaid for the expense, while in two or three days we noted an increased output of about 30 per cent in the afternoons—enough to pay for the music and leave a profit besides. Now, therefore, the music is counted each season as one of the necessities of a profitable business. Among the blacks in the field we aim to have one or more good singers, for with these everybody is better natured and more work is accomplished with less fatigue."

In connection with this story of Mr. Hale's orchards it should be said that there are now a great many orchard companies in the same part of Georgia, and in other portions of the south peach trees have been extensively planted. So great has been the planting, specially of the Elberta variety, that it is becoming a serious problem as to how a full crop can be marketed. Cost of production must be reduced to the minimum, the greatest care must be exercised in the handling of the fruit. The labor problem, which was not a serious matter when Mr. Hale planted his orchard, has become somewhat serious now, and will cause trouble in some sections. So that anyone who contemplates the planting of a large peach orchard should consider the changed conditions. But this is the story of J. H. Hale's orchard, which is one of the greatest fruit-growing enterprises in the world.

For the illustrations used in this article we are indebted to the editor of The World's Work and to the Central of Georgia railway.

Best Varieties of Peaches.

Exeperiments by the Missouri Agriculture College with one hundred kinds of peach trees for five years' show that the peach crop in Missouri could be greatly increased by a proper selection of trees. Prof. J. C. Whitten, who has conducted the experiments, says for commercial orchards the best varieties are Mountain Rose, Crawford, Elberta, Family Favorite and Salway. For home use he recommends Connett (Southern Early), Thurber, Lewis, Carmen, Champion, Crosby and Gold Drop. These varieties ripen in the order named and are hardy enough to fruit when others fail.

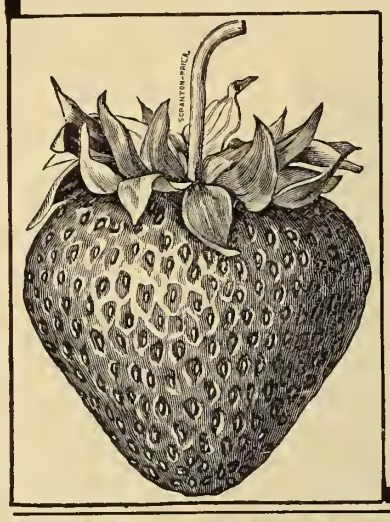
The Fruit-Grower is one of the papers I cannot do without; it is one of the best papers I have ever read.—A. D. Stoneman, Quasqueton, Ia.

Lovett's Strawberries.

Finest plants in the world. Developed under the pedigree system of plant growing which I have been practicing for 30 years in my experience as a small fruit specialist.

PEDIGREE PLANTS PAY

Bred to produce the greatest yield and the largest and finest fruit. I can furnish plants by the million. Many superb new sorts and all the good old varieties.



My Small Fruits

of which I now have over 250 acres are in demand wherever known. I grow for those who want the best.

Strawberries,
Raspberries,
Blackberries,
Gooseberries,
Currants
and Grapes.

MY FREE CATALOG handsomely illustrated, gives full and honest descriptions of each variety. It also gives prices and full directions about planting and growing. Write me for copy

J. T. LOVETT, Small Fruit Specialist, Little Silver, N. J.

Save Money on Fruit Plants

Strawberry Plants

a Specialty. We grow them by the Million and can save you Money on one-half dozen or a carload.

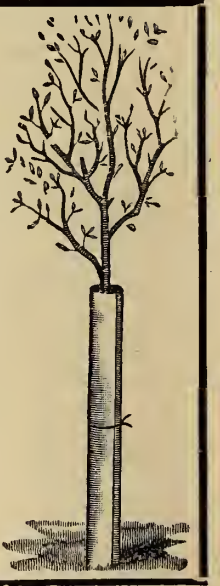
Raspberry, Blackberry, Dewberry and Currant Plants, Grape Vines, Etc.

Extra fine stock. Very low prices. Satisfaction guaranteed to every purchaser. Valuable Catalogue Free. Send postal to

O. A. E. BALDWIN VINE STREET BRIDGMAN, MICH.

Wooden Veneer Tree Protectors

will protect your trees from rabbits, mice and borers; will also protect the trunks from sunscald. Can be left on throughout the year, and will last for years. A cheap, effective protection. The accompanying cut shows the protector as applied to a tree. This is the protection recommended by most of the horticultural societies, and millions of them are in use. We are headquarters for them. Write for prices.



Berry Boxes and Fruit Packages

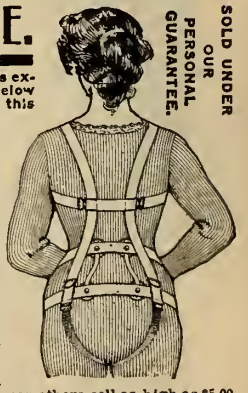
We handle all kinds of packages, and received the Gold Medal at the Louisiana Purchase Exposition, 1904. for our exhibit. During the winter season low prices are made on boxes. Ask us about this. Don't wait until the rush is on, but send list of your wants early.

ST. LOUIS BASKET & BOX CO.
SECOND AND ARSENAL STREETS, ST. LOUIS, MO.

$1.19 RATIONAL BODY BRACE.

Cut this ad. out and send to us: enclose $1.19, and 20 cents extra for postage, $1.39 in all; state size around body two inches below top of hip bones; give height and weight, and we will send you this RATIONAL BODY BRACE by mail. You can examine it carefully and if you do not find it the highest grade, the most perfect, comfortable, hygienic and satisfactory **Woman's Brace** ever offered, regardless of price, simply return it to us and we will immediately return your **$1.39. Wear the brace ten days,** and if you don't find it all and more than we claim for it, **return it at our expense and we will return your money.**

THIS IMPROVED RATIONAL BODY BRACE is an abdominal supporter and brace combined. Forms a natural support for every organ of the body. Fits any figure, thin or stout. Makes walking and working comfortable and pleasant. Regains and retains a woman's general health, strength, grace and perfect figure. Removes causes of all weaknesses and prevents organic displacements, strengthens and supports where needed. **A genuine boon to womenkind. Made of specially prepared material;** upper portion elastic; lower portion non-elastic. Perfectly adjustable. Can be worn over corsets. Best grade tempered springs. All metal parts highly nickeled. Greatly improved in quality. Manufactured now by us and offered at the unheard of price, **$1.19,** a trifle more than actual cost. Guaranteed superior to braces others sell as high as $5.00. **Recommended by doctors.** Brings immediate relief and comfort to the wearer, with regular and natural functions of every organ. **An extra set of under straps furnished free. ORDER TODAY.** Write for catalogue of **Drugs and Appliances.** Address,



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SEARS, ROEBUCK & CO., CHICAGO.

We Pay Cash

WEEKLY and want more salesmen EVERYWHERE. We furnish a better outfit (FREE) than any other nursery, **superior stock, lowest prices.** Our men succeed where others fail. Write for terms.
STARK BROS, LOUISIANA, MO., Fayetteville, Ark., Atlantic, Iowa, Dansville, N. Y.

Truth Is Eternal

Our claims for Warnock's Tree Paint are founded on scientific facts. Those who have used it agree with us in every particular.

One application will protect all kinds of fruit trees from rabbits, mice, borers, and San Jose scale in all countries and climates for a longer time than three years. We warrant for three years, or the price refunded. It will protect from sheep and goats the year the trees are painted. Also painted trees grow longer in the season and drop their leaves later in the fall than unpainted trees. It promotes a vigorous, healthy growth.

We take pine tar, and by a process all our own, remove the astringent properties, then add the essential protective ingredients. Other tree paints are mixed in water and will soon wash off. Warnock'sT ree Paint never washes off: the bark absorbs it.

For circulars, prices, etc., write

R. WARNOCK & CO., INDEPENDENCE, MO.

AGENTS WANTED.

Patent Allowed September 2, 1904.

Root Grafts

Made to your order by interested workmen. Healthy material. Over 30 years' experience in handling. Write for winter price list.

SHENANDOAH NURSERIES

D. S. Lake, Prop., Shenandoah, Ia.

The Ward Blackberry

is a very strong grower, perfectly hardy in New Jersey, the fruit black throughout and very prolific. We offer root-cutting plants at so moderate a price that all can plant it who desire a first-class and profitable market variety. For Price List, address,

David Baird & Son

BAIRD, NEW JERSEY.

The WELCH NURSERY

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Apple Grafts

made to order. Strawberry Plants by the Million. Write for Price List of Tested Sorts. Address,

J. C. Welch, Shenandoah, Ia.

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H. P. SHOWALTER WHOLESALE NURSERY CO. AND MUSKOGEE NURSERY COMPANY.

Under the name of the latter, which was established in 1894; incorporated in 1903. This consolidation gives us many trees in surplus.

Apple and Shade Trees by the Car Load

Strawberry plants from 10 acres, which have been sold as a townsite. Wholesale and retail. Write for catalogue.

MUSKOGEE NURSERY COMPANY, Muskogee, Indian Territory.

None Better THAN THE BEST

Our field-grown Budded Roses are the best on earth, and our Fruit and Shade Trees, Evergreens and Hardy Shrubs, Vines and Small Fruits, etc., are unexcelled. Immense stock. Oldest nursery in Texas. Write for catalogue and prices.

BON AYR ROSE GARDENS, Mt. Selman, Texas.

DAKOTA GROWN TREES

are going to all parts of the United States and are becoming famous wherever known for their hardiness and vigor. Get them from the

Geo. H. Whiting Nurseries

Our 25 years' experience in this rigorous climate is at yonr service at no extra charge. CATALOGUE FREE.

Geo. H. Whiting, Prop., Yankton, S. D.

SALESMEN WANTED

in Ohio, Kentucky and West Virginia for high grade Nnrsery Stock. Permanent position. Apply to Harris Nursery, Harrisville, W. Va.

The February Fruit-Grower

Last month we announced that this month we would publish an article by Mr. D. Ward King, Maitland, Mo., on the subject of road dragging. This article was to have been illustrated, and Mr. King wrote us that he was disappointed in getting some photographs. As a result, the article does not appear in this issue, but if possible we will have it for February.

The Februanry number will be especially devoted to the subject of spraying, and a number of articles have been prepared for that issue. Among others will be an article by Prof. J. C. Blair on the subject of power spraying machines.

Hon. J. H. Crowley of Rocky Ford, Colo., one of the best apple-growers in the country, has promised an article giving his experience in spraying with Disparene for the codling moth.

E. H. Favor of the Missour' Experiment Station will tell of some of the work done by the station in an experimental way last season.

Prof. J. M. Stedman will furnish an article on the insects which will have to be fought by apple-growers next spring.

Apple scab has been so destructive in recent years that a special article wll be devoted to this disease and the best means of guarding against it.

Practical fruit-growers from all all over the country will furnish articles giving their experience in spraying, and the matter will be thoroughly discussed.

An illustrated article on "Pruning" will appear, at a time when this subject will be very interesting. This will be furnished by Prof. Charles A. Keffer of the Tennesse Experiment Station.

Besides these special articles, the regular departments will appear, together with reports of the meetings of some of the horticultural societies of the country. The Questions and Answers department, as usual, will be full of good things.

The February number will have a special cover design, printed in two colors, and, altogether, we think it will be one of the best papers that we have ever sent out.

Louisiana as a Fruit Section.

A few days ago a rotund representative of a Tennesse nursery walked into the rooms of the Shreveport Progressive League to make inquiries regarding prospective buyers of his goods. During the course of his conversation with me he stated that he had, a few days previously, received a great shock when his house ordered him to come to Shreveport.

"I didn't know there was any demand here," he said.

But he found out his mistake. I was able to give him names of a score of farmers who are planting large orchards, and to point out a dozen fruit and truck growers' associations in this vicinity, the members of which are actively engaged in enlarging or planting commercial orchards. I told him of a man who had made $10,000 net on 100 acres of Elberta peaches last year; of a large concern which had bought 2,500 acres for the purpose of planting a series of orchards for sale to homeseekers; of another concern which was planting 2,200 acres in fruit; of two large orchards just across the Louisiana boundary, and of a host of small farms, the owners of which are gradually accumulating small fortunes by selling their fruit in this market, or by combining and shipping in carload lots to northern markets.

The trouble was that the nursery's traveling man had not kept up with the changes that have gone on in this section in the past few years. His idea was that of the average man who hears the name of Shreveport and Red River mentioned. He immediately though of cotton.

This, in fact, has been the only trouble in this part of the country. For 100 years the value of land has depended upon its ability to raise cotton, and, incidentally, corn. The result soon became apparent. Lands that would raise cotton brought a moderately high price per acre. Land that would not readily raise cotton became a drug on the market. Under the prevailing agricultural system they could be utilized only with the greatest difficulty. As the labor became scarcer their utilization became more and more difficult and, finally, well nigh impossible.

Fortunately, at this point the first glimpse of a final remedy was seen. This was expressed in the word "diversification." A few men planted orchards for family use and learned, with something akin to surprise, the success which attended their efforts. Fruit and truck became sources of income, and, in some cases, of wealth. The best part of it all was that this was done on the cheap uplands, which formerly sold for $1 and less per acre and which still can be had, unimproved, for $2 to $5 per acre.

It was this development which the traveling man did not know of, and hence his surprise when he was ordered to "make" Shreveport. The indications are that his visits from this time on will be annual and that soon he will have considerable competition in the way of other nursery representatives, who will be surprised upon being ordered to Shreveport. Through the efforts of the Shreveport Progressive League there have been sold in the past month about half a score of farms, the buyers of which are skilled fruit growers and whose intention it is to come where land is cheap, buy a large tract for w' at a few acres would cost farther north, and spend the remainder of their days in a good climate and in a land of plenty.

A. R. HOLCOMBE,
Secretary-Manager Shreveport Progressive League.

Growing Strawberries in California.

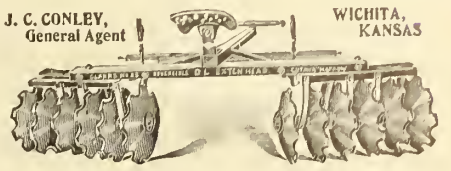
Since writing an article for The Fruit-Grower some months ago I have received many questions asking about our methods here, and how we get several crops of strawberries a year. We first plow the ground deep, thoroughly pulverizing the soil; then grade all the low places up to a level, then list out in rows two and a half feet apart, only the rows should have a little fall, so that water can be run in between them. The plants are set on the ridge on one side of the furrow; then run the water in the rows after the plants are set; when the soil is dry, cultivate with a fine-tooth cultivator.

Plants are set any time from September 15 to February 1. Plants set in September will bear a good crop in January and February 1. Plants set in September will bear a good crop in January and February; the price in our market is from 15 to 25 cents per box. The plants are kept well watered as long as they will bear, and when they stop bearing runners are at once formed. When the runners are well rooted the plants are allowed to dry up, or we will cut off the foliage and draw fresh earth close around the heart of the plants. Then give a good watering and cultivate or hoe after each application of water. Be very careful not to hoe too deep; we water every eight days or so, and this will give a new growth and fruit will set on again. The California Everbearing bears fruit in spring, but the heaviest crop is in August and September. Brandywine bears January to June and again in October to December. Plants on different soils bear at different dates. The second year from planting the plants will bear at intervals throughout the whole year, except during our rainy season. When new soil is drawn up higher around the plants a new lot of roots are formed. I had charge of two acres of Brandywine, planted in September; in December we got ten crates of thirty boxes each, in January thirty, and in February forty-five; in all we realized $750 five months from planting.

D. DALLAS.

Cutaway Headquarters for the Southwest

J. C. CONLEY, General Agent — WICHITA, KANSAS



Wholesale stock of Cutaway Machines and Repairs at Wichita, Kan.

J. C. CONLEY, Gen. Agt.

$10.30 NEW STEEL RANGE.

FOR $10.30 we will sell this new, handsome, nickel trimmed, 1905 model, square steel range (with reservoir or closet, as illustrated, a trifle extra). For full particulars how we make our steel ranges **thicker, heavier, stronger, handsomer and better** than any other ranges made in the world; for our three months' free trial offer, safe delivery guarantee, pay after received terms; for picture of our foundry, **the largest stove foundry in the world**, cut out and return this ad. and our Free Stove Catalogue of everything in steel and cast iron stoves and ranges will be mailed at once. With our Free Stove Catalogue you get the most astonishing stove offer ever heard of.

Address **SEARS, ROEBUCK & CO.,** CHICAGO, ILL.

APPLE TREES

30,000 3-year Ben Davis and Paynes' Keeper cheap; they are fine trees. 100,000 2-year Apple of the leading varieties. 25,000 Soft Maple, 5 to 10 feet, and a general variety of all nursery stock. WRITE FOR PRICES

G. W. TRIBBLE
BILLINGS, MISSOURI

Seedlings

Apple, Black Locust, Maple, Honey Locust, Russian Mulberry, Catalpa Elm and Osage. Also a complete list of all other kinds of nursery stock at very low prices. Send for our Catalogue. IT IS FREE.

FAIRBURY NURSERIES,
Box I. Fairbury, Neb.

Do not forget to place yonr order for some

Bayard & Rohes Favorite Apple Trees

also for some of the Illinois Peach, one of the largest peaches grown. I also have a fine lot of other varieties, and a complete line of general nursery stock, first-class in every particular. Address all correspondence to FOREST OAK NURSERIES, Quincy, Ill. LOUIS H. FRESE, Prop Agents wanted.

THE MERSEREAU BLACKBERRY and Pomona Currant

are the very best for Fruit, and are greatest money makers.

PARK NURSERY (20 years), Kinmundy, Illinois.

MAKE MONEY

pulling stumps, grubs, etc., and clearing land for yourself and others. **Hercules Stump Puller is the best.**

Catalog FREE. **Hercules Mfg. Co., Dept. 37, Centerville, Ia.**

FREE

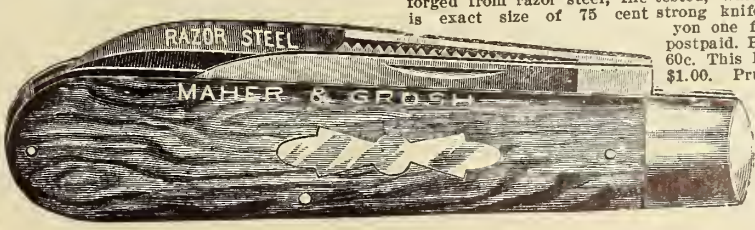
Fine Premiums For Selling SEED

ALL you have to do is send us your name and address. We send you **34** packets **FRESH SEED**—vegetable, flower, or assorted—your choice; sell at **3** cts. each, return **$1.00** to us and we send you at once, postpaid, this **Sterling Silver Finish Pendant,** with your initials, and **2** ft. **chain;** this **base ball,** or any article described in our premium list, sent with SEEDS. **BIG CASH COMMISSION TO AGENTS. Write today.**

Dept 28 **JOHN R. RISDON SEED CO., Riverdale, Md.**

SPALDING

Direct Trade Wanted With Fruit-Growers



Every M. & G. blade is handforged from razor steel, file tested, warranted. This cut is exact size of 75 cent strong knife. We will send you one for 48c; 5 for $2, postpaid. Best 7-inch shears, 60c. This Knife and Shears, $1.00. Pruning, 75c; budding, 35c; grafting 25c. Send for 80-page free list and "How to Use a Razor."

Maher & Grosh Co.
97 A Street,
Toledo, Ohio.

New Jersey Horticulturists.

The thirtieth annual meeting of the New Jersey Horticultural Society (Trenton, Jan. 5-6) had its local interest in the continued endeavor to be permitted to grow small fruits and cherries by being permitted to protect such property from the robins, the state law compelling growers to submit to their depredations. The growers did not desire extermination, but only to be permitted to shoot the bird upon their own premises and when destroying their property, thus giving them the rights enjoyed by their competitors in adjoining states. But, even with the approval of the state game commission and of the department at Washington, the last state legislature refused the concession and the main discussion at the meeting was what to do about it. The consensus of experience and expression was that growers of small fruits in New Jersey must have protection from fruit-destroying birds or go out of the business.

Ideas advanced, and generally approved, during the session were to consider insect pests as a public nuisance and to hold the owner of infected property liable for maintaining the same; that fumigating nursery stock was, as a rule, injurious to it and favoring a repeal of the law making it compulsory, or at least to permit the buyer to have a choice in the matter at his own risk; favoring repeal of the Chinese exclusion act or such amend of it as would give growers of the east and middle west the help necessary to their business, and counting it as an injustice that they are deprived of the assistance given to their competitors of the Pacific coast; favoring the uniform fruit packages, uniform rates for transportation for east and west and better methods of marketing.

Dr. John B. Smith, state entomologist, as the result of the year's work through the east against the San Jose scale, reported that, judging from observation and experience, " the most certain, effective and direct of all contact insecticides are the petroleum oils." He indorsed the Limoid, a proprietary soluble oil preparation, as all that could be desired, but as too costly for ordinary use. "The lime, salt and sulphur" was effective if perfectly prepared, and of chemically pure material, and just so far as it reached the scale. But these conditions were so rarely met that the general adoption could not be indorsed. The oils covered more—were more far-reaching in spreading over a surface.

The officers for the ensuing year are, president, W. H. Skillman, Belle Meade; vice president, Horace Roberts, Fellowship; secretary, Henry I. Budd, Mt. Holly; treasurer, Ira G. Blackwell, Titusville. Executive committee, Dr. J. B. Ward, Lyons Farms; E. P. Beebe, Elizabeth; D. Aug. Vandeweer, Freehold; W. A. Reid, Tennant; Henry A. Hale, Princeton.

E. S. STARR.

Pennsylvania Horticultural Society.

The Pennsylvania Horticultural Society at its seventy-seventh annual meeting held in Horticultural hall, Philadelphia, the evening of December 20, elected these officers for the ensuing year: President, James W. Paul, Jr.; vice presidents, James M. Rhodes, Henry F. Michell, Edward Le Boutellier and Dr. George Goebel; treasurer, Sidney W. Keith; secretary, David Rust. Executive council, Robert C. Lippincott, Rudolph Ellis, John W. Pepper, Edward A. Schmidt, Robert Craig, John McCleary, Dr. J. Cheston Morris, Dr. Robert Huey and William Fowler. Faculty, botanist, Prof. Stewardson Brown; horticultural chemist, Dr. Persifor Frazer; entomologist, Dr. Henry Skinner; biologist, Dr. Ida A. Keller.

The society is the oldest of its kind in America, antedating the Massachusetts society by several years. It owns a fine building on Broad street, Philadelphia, the library of which is open during business hours of every business day throughout the year. The meetings are the third Tuesday of each month and are always well attended, as, besides a paper on some seasonable topic and discussions, there is always a competitive exhibit of several classes and generally special exhibits of new or imported rare plants for the society's certificate, without which no plant is popularly supposed to b eproperly introduced, either to culture or to the trade.

The society further holds an institute meeting in the la e winter, to which both the state and national departments of agriculture send representatives; also an exhibition each spring and autumn. At the recent fall show the cash prizes awarded amounted to $1,874, there being cups, medals and trophies besides.

At this show the great carnation of the west, "La Fiancee," sustained its first defeat, losing the cup for the best new carnation to the scarlet "Craig," from Cottage Gardens, L. I. Fiancee lost, as it did at a later exhibition in Boston, from being out of condition, the two tests proving it a poor traveler.

A novelty at this show was the chrysanthemum vine. This is a veritable climber and a most pleasing member of the family. The foliage is daintily beautiful and the plant is well covered with small, single star-like yellow blossoms. E. S. S.

Springdale, Ark., Growers Organize.

Quite a number of fruit-growers met at the mayor's office on December 31, 1904, and organized the Fruit-Growers' Union, with an enrollment of forty-six members. The officers are W. D. Dacon, president; J. T. Craig, secretary; William Claypool, general manager; A. J. Phillips, T. J. Hill, J. G. Gerig, B. E. Snider, T. R. Haley and J. A. Eicher were chosen directors, with an acreage of 450 acres strawberries, 258 acres apples, 200 acres peaches, 20 acres cherries and 30 acres raspberries. The objects of our association are to raise the standard of our fruits to the highest grade possible, and to sell it on the track at this end of the line as far as possible. Most of our members are readers of The Fruit-Grower and regard it as standard authority on all horticultural subjects pertaining to our section of Arkansas. Wishing The Fruit-Grower unbounded success, I am very truly yours, JAS. T. CRAIG.

Springdale, Ark.

The Columbian Raspberry.

I wish to thank F. H. of Fulton, Mo., for his article on raspberries in The Fruit-Grower some time ago. I must say, however, that his experience differs from the local growers here. There are four of us who grow Columbian, and we put them as the most profitable raspberry. They came through last winter—smiling and gave a big crop of fine large berries. We have grown Columbian for four years and are more pleased with them each year. We shall be able to judge of the Haymaker next year, as some of the local growers have a nice lot of young plants. The Cardinals, that some got as "premiums," "summer killed," so we can not say much for them. We expect to give them one more trial. I wish some one, from the north would give us some pointers on blackberries—such as the Eldorado, Ancient Briton and Mercereau.

C. H. C., Kangley, Ill.

His Conscience Hurt Him.

Inclosed herewith find 50 cents to renew my subscription to The Fruit-Grower. I had just written you to discontinue the paper, because I take so many papers, but at once felt guilty of doing myself a wrong. We came here from Iowa, and used to eat good Ben Davis apples in our old home. When we planted our orchard here we put out a great many of this variety, which began bearing this year. Now I am convinced that Mr. Moore, of West Virginia, who was quoted in the November issue, is right, and that Ben Davis requires a long, warm season. This variety does not do well here, although other apples succeed admirably. I will not try to get along without The Fruit-Grower. Wish I had read more about apples before planting my orchard.

L. M. GILBERT.

Salem, Oregon.

Homeseekers' Excursions.

The Chicago Great Western railway will on the first and third Tuesdays of each month, January to April inclusive, sell homeseekers' tickets at one fare plus $2.00 for the round trip to points in Alabama, Arkansas, Arizone, Colorado, Florida, Georgia, Indain Territory, Iowa, Kansas, Kentucky, Louisiana, Mexico, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, Tennessee, Texas, Utah, Virginia and Wyoming. For further information apply to M. F. Montgomery, City Passenger and Ticket Agent, 414 Felix street, St. Joseph, Mo.

THE KING GRAPE

Is as hardy and strong a grower as the Concord, and more prolific. The color is the same, grape much larger and cluster larger and more compact. The pulp ls more tender, flavor nearly the same, but more sprightly, seeds fewer in number, ripening between Worden and Concord. The leaves are large, thick and tough and wood very hard and short-jointed. "A valuable acquisition, a worthy offspring of its parent, the Concord," (from report to Michigan State Horticultural Society, of committee appointed to investigate and name the grape.) It was awarded a silver medal at the St. Louis Exposition, also a medal at the Pan-American; also drew highest awards and favorable comment at state and district fairs wherever shown.

The variety has been fruited successfully in the vineyards of the originator for the past twelve years, and vines are now placed on the market for the first time.

A limited number of strong two-year plants for sale by the originator only. King Vines shipped with seal attached.

Wm. K. Munson, Fruitgrower R. R. 4 **Grand Rapids, Mich.**

Strawberry Plants

All Standard Varieties *That Grow* and Many of the Best New Sorts

Also **Red and Black Raspberry, Blackberry, Currant and Grape Plants, Asparagus Roots and Seed Potatoes.** Forty page **Descriptive Catalogue,** with **Cultural Instruction,** mailed **Free** if you mention this paper.

C. E. WHITTEN'S NURSERIES

Box 9, BRIDGMAN, MICHIGAN

$9.00 Buys a 60-Egg Capacity, double case **Star Incubator**

Freight paid to your Railroad Station providing you mention The Western Fruit-Grower when ordering. Send for printed matter.

STAR INCUBATOR COMPANY, BOUND BROOK, NEW JERSEY.

Good Hope Fruit and Poultry Farm SMALL FRUIT PLANTS

Strawberries, Raspberries, Blackberries and Gooseberries—leading varieties of each. Write for prices.

EGGS FOR HATCHING Barred Plymouth Rock, Golden-Laced, Silver-Laced and White Wyandottes, $1 to $2 per 15 eggs—all from prize-winners, and are themselves high-scoring birds—good hatchers guaranteed. Best hatch reported each month from my eggs to receive 15 eggs of any above varieties FREE.

H. W. BYERS, Troy, Kansas,

THE OK NURSERY OK PRICES—OK TREES—CUSTOMERS OK PLEASED Address A. L. LUKE, WYNNEWOOD, I. T.

Free! 100 Elberta, Carman, or Mamie Ross Peach Trees given FREE to every new customer. Write for free Catalogue. Customer once and always. Fine stock Peach, Apple, Plum, Cherry, Pear, Vines, etc.

AT ST. LOUIS A **GRAND PRIZE** WAS AWARDED ON VEGETABLES, THE PRODUCTS OF **BURPEE'S SEEDS!**

IF you garden you want THE BEST,—and we shall be pleased to mail you BURPEE'S FARM ANNUAL FOR 1905, an elegant **new book of 178 pages,** which tells the plain truth, with hundreds of illustrations, beautiful colored plates, and describes **superb Novelties** of unusual merit.

Write TO-DAY! A postal card will do, while it is sufficient to address simply BURPEE, PHILADELPHIA

W. ATLEE BURPEE & CO., The World's Largest Mail Order Seed Trade

Effects of Mulching in the Orchard of U. T. Cox, Rockwood, O.

June 10 and 11 eight tons of straw were scattered around the trees on the south and west sides of the hills near the top and some of the ground was bare where clover and grass could not grow, the trees taking the moisture and fertility out of the ground. Nearly a ton of the straw was placed in a peach orchard, but not much difference could be seen in the ripening peaches, as the ground was soaked with rain just before the peaches ripened—Elberta, August 20 to 27. The soil was well supplied with moisture when mulched. There were 166 bales applied to 250 trees, some of which were large enough to bear four or five barrels of apples to a tree, and others that did not have a barrel each. There were about twenty-five trees left without mulch in different parts of the orchard. There were about 400 barrels of apples in that part of the orchard.

The straw cost $9.50 per ton placed on the ground. Straw is scarce here, as there is little wheat grown in this part of the state. The cost was less than 30 cents per tree, or 18 cents per barrel for the apples produced. The fall season was the driest on record, as there was very little rain from early August till December, probably not over an inch in three months.

October 20, Prof. W. J. Green had fruit picked from a good many trees scattered around in different parts of the orchard, both mulched and unmulched trees being in similar conditions otherwise. The results as to size and grades is as follows:

Mulched—261 apples in a bushel; 140 apples in a half bushel; 320 apples in a bushel; 212 apples in a bushel; 196 apples in a bushel; 226 apples in a bushel; 489 apples in a barrel; total, 1,844 apples.

Unmulched—279 apples in a bushel; 160 apples in a half-bushel; 330 apples in a bushel; 330 apples in a bushel; 281 apples in a bushel; 253 apples in a bushel; 249 apples in a bushel; 570 apples in a barrel; total, 2,122 apples.

In the barrel of 489 apples there were 370 first grade, 2½ inches in diameter and up, and 119 smaller ones, over three-fourths of them first grade and less than one-fourth small ones. In the other barrel of 570 there were 355 first grade apples and 215 small ones, nearly five-eighths against three-eighths as to grade. The gain in number of barrels was nearly one-seventh, or nearly 14 per cent. As the yield was about 400 barrels, it would have been short fifty-five or sixty pounds if none of the trees had been mulched, and at $1.50 per barrel net on the tree it would amount to at least $85. The gain by increasing the size of one-eighth from the second grade to the first would be about $50, and the other small ones would be worth more than if not mulched. The value of all the mulched apples was increased and Prof. Green said he would place it at about 25 cents per barrel over the unmulched. The color was much better where mulched. The gain in number of barrels and increased size of fruit was about $135, and if 25 cents per barrel difference is added the whole gain would be $235. The cost of the mulch was less than $70 in the apple orchard and the gain is enough to justify the expenditure when $2 or $3 gain comes from every dollar expended, and still it is likely that half the benefit of the mulch will be realized in future crops. The trees that were mulched seem to be in condition to bear next year and those not mulched seem to lack vigor and will likely not bear next year. The unmulched trees lost their leaves before the fruit fully ripened and it did not get a bright color and look crisp, but instead looked and felt spongy. The drops were clean and sound where mulched and were worth more than the Grimes Golden, but only a few of the latter.

U. T. COX.

Rockwood, Ohio.

Report Concerning Haymaker Raspberry.

I noticed an inquiry several months ago as to the Haymaker raspberry, and as it has never been answered to my knowledge I want to say that two years ago I procured twenty-five vines. They made a luxuriant growth and were perfectly hardy. The following spring I dug 500 plants—and fine ones, too—all of which I kept for my own use, and besides gathered a little over three crates of berries from the same twenty-five vines. The berries averaged quite large, even more so than the Cumberland, and the amount of wood and size of it exceeds that of any other variety I have ever grown; and while personally I do not like the flavor of any red berry as well as the black, yet I was allowed considerable more for a crate of them on the market.

T. H. VORIES,

Wathena, Kas.

Tree Salesman Has His Say.

The tree agent has been roundly abused on many occasions, and now one has something to say for that side of the business and it must be admitted that there is much truth in what he says. This salesman is known to The Fruit-Grower as an honest man, and therefore what he says is worth considering:

"The greatest trouble in the tree business is in not furnishing trees true to name. The planter has to wait for years before he finds out he has been deceived. It seems to me that some plan should be arranged to require agents and nurseries to furnish trees true to name. The buyers themselves are to a certain extent responsible for there being so many dishonest agents. Many of them never read a fruit paper, or they would not be taken in as they sometimes are. they would study the horticultural papers they would find that some of the best varieties of fruits, especially apples, make very poor growing trees in the nursery row, and often they are crooked and somewhat gnarly. They order the varieties they want, and if the agent furnishes the trees to name, the buyer is dissatisfied when he sees the trees, and kicks because some of the trees are so small and crooked. The agent often has these trees refused. Many of these agents work only a year or two in one locality, so next time he succumbs to the temptation to substitute some strong-growing, smooth trees for the varieties which are poor growers, and the customer is pleased with the trees. But wait until they come into bearing—then the agent will get a roasting, but he will be in another part of the country, furnishing other buyers with just the kind of trees they want. The buyers should inform themselves, and then they will be in a position where they cannot be taken in by all of these fakes."

New Process of Seasoning Timber.

The bureau of forestry of the Department of Agriculture is making some tests of seasoning timber which will be interesting to all who are interested in the durability of posts, etc. The feature of these tests will be that the various posts are to be immersed in water for varying periods, as a part of the seasoning process. Immersion of timber in water has often been noticed to affect the rate of seasoning. Rafting is said by many lumbermen to improve timber, and logs which have lain for a long time in swamps are in some places eagerly sought for their superiority for certain uses. The tests now under way will determine just what effect the immersion in water will have upon the timber, and also how long the posts should be immersed to secure best results.

He Saves the Fruit-Grower.

I subscribed to The Fruit-Grower one year ago and have received, read and filed every copy for future reference. As the paper has proved to be the best investment I ever made, I herewith enclose 50 cents to renew my subscription. I have gained much valuable information from the Questions and Answers department, which I always read carefully—and, in fact, I always read the whole paper, as a matter of business, and not merely as pasttime or entertainment.

J. M. HORNADAY,

Durham, N. C.

Likes Our Booklet.

I am just in receipt of your booklet, "The Evolution of an Idea," which I have examined with interest. You are certainly to be congratulated, not only on what you have accomplished, but also on the entertaining way in which you tell the story of what has been done. Long life and prosperity to The Fruit-Grower and its publishers is the wish of yours truly,

J. B. THOBURN,

Secretary Oklahoma Board of Agriculture.

To the Friends of The Fruit-Grower

We want to bring to the particular attention of all friends of The Fruit-Grower the "five for one dollar" offer which has been in effect for some time. We hope every member of The Fruit-Grower Family will make a special effort to send in at least one block of five new names by May 1st.

This price will hardly pay the cost of white paper alone in twelve numbers of The Fruit-Grower, and very likely offer will be withdrawn after this season. This is a special inducement which was made by us in order to place our circulation to the fifty thousand mark, and with the assistance of our friends, we will reach the goal during 1905.

Is Your Neighbor a Fruit Grower?

If so, he will surely subscribe at this special price if you bring the matter to his attention. If you can use a few sample copies, tell us how many, and they will be mailed to you at once. Or send the names of a few of your friends who are interested and we will mail the samples.

Bear in mind that when you help increase the circulation of horticultural literature, you are doing good work not only for the publisher, but for the cause of horticulture and for yourself. Would it not be to your advantage if every grower could be induced to spray, to cultivate scientifically, to grow better fruit?

Is Your Subscription Paid Up?

If not, we hope you will renew at once. If you want your paper stopped, write us a postal card to that effect. This will only cost you one cent. We do not care to send The Fruit-Grower to anyone who does not want it, but our policy is to send the paper till ordered stopped, unless you instruct us otherwise. This rule is in effect because so many of our readers object when paper is promptly cut off, claiming "they are good for 50c." When subscribers ask to have the paper stopped at expiration, we place the letter "S" after date on address tag, which signifies that paper will be stopped promptly.

Have You Anything to Advertise?

You should try the columns of The Fruit-Grower if you have. When you advertise with us you get what you pay for. This month we print over 40,000 copies, and the advertising rate is $2.80 an inch. We prove circulation in any manner you may suggest; will send detailed statement showing how many papers we mail to each state or give any information you ask for. We cannot guarantee that our readers will buy from all advertisers, but we place your ad in the homes of over 40,000 families of the best class of farmers in the country, and if you have anything of interest to them they have the money to buy it.

Now for that block of five. Will you send one? If you send it soon we can start the list with the January issue. We hope to have your cooperation and we will appreciate it.

The Fruit-Grower Co., St. Joseph, Mo.

The Horticulturists Rule Book

The regular cloth bound edition of this handy reference book sells for 75c, but we have in stock fifty copies in paper covers which will be sold at the low price of

TWENTY-FIVE CENTS EACH

This book should be in the library of every fruit-grower, and this will be the last opportunity to secure it at one-third price, 25c.

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Trees & Plants Free from Scale. New and Choice Varieties. BLACKBERRIES, STRAWBERRIES, RASPBERRIES. Our Free Catalogue will save you money. Please Mention Western Fruit-Grower.
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"GLEANINGS IN BEE CULTURE"

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The annual meeting of the Southern Illinois Horticultural Society was held at Vienna, Ill., Nov. 22 and 23. The meeting was well attended and the program was interesting. J. W. Stanton was re-elected president and E. G. Mendenhall of Kinmundy was elected for the fifteenth consecutive term as secretary-treasurer. Mr. Mendenhall has served the society long and well. He publishes The Horticultural Visitor, is agent for Clark's Cutaway harrows, and is otherwise identified with the horticultural interests of the Middle West.

Strawberry Plants

Millions of them. Grown under special care, with the view of producing plants of the highest quality that will yield abundant crops of large fine berries. These are the kind of plants that you get if you buy of **W. W. THOMAS, The Strawberry Plant Man, Anna, Ill.**
Write for prices.

50,000 TREES AT HALF PRICE.

First-class Apple, Cherry, Plum, Shrubs, Plants, at wholesale. Peach trees, cheap; freight prepaid anywhere. Ba...win Cherry in colors and Catalogue FREE. SENECA NURSERY, Seneca, Kan.

Freight Rates on Apples.

Reference is made elsewhere to the discussion of the subject of freight rates by various horticultural meetings this winter, showing the importance of the subject to those who grow fruit on a commercial scale. We present herewith a paper which was read by L. M. Lord of Glenwood, Iowa, before the late meeting of the Southwestern Iowa Horticultural Society, covering the freight discrimination by the Burlington system against the growers of that part of the state. Mr. Lord said:

"Pardon me if it seems that I am using rather plain language derogatory to your time-honored and has been prospesous business. This is the first time that I have had the pleasure of meeting you in your annual convention, but I take it for granted that your deliberations have been given up to planting, budding and grafting. In the meantime there has been a different kind of a grafter at work which has undermined your business to a greater extent than a great many of you realize. This new grafting process is the unjustly discriminating railroad tariff that is in force from this locality to all other points, bringing us into direct competition with every other fruit-growing locality in the country.

"Owing to our location the natural market for the fruit of Southwest Iowa is Central and Western Nebraska, North and South Dakota and Minnesota. The freight rates from Council Bluffs to Dakota and upper Minnesota points is from 40 to 60 cents per hundred pounds, in car lots, for a distance of from 250 to 400 miles. From Rochester, N. Y., to the same Dakota points, a distance of from 1,700 to 1,500 miles, apples can be laid down at from 50 to 70 cents per 100, averaging about 10 cents per 100 in excess of our tariff, but for a four times greater railroad mileage.

"Michigan and Illinois points, a haul of from 700 to 900 miles, enjoy practically the same rate that we do to these Minnesota and Dakota points, and in addition have their home market—Chicago, Milwaukee, etc., for an almost unlimited demand at a freight rate of from 7 to 15 cents per 100.

"While we are inclined to place a large question mark over this unjust discrimination, let us leave the Dakotas and Minnesota alone—they need the fruit, even if the other fellows neither need nor deserve the market. Nebraska should be our natural market, anyway. The fruits of New York and Michigan must pass our very door before they can reach our Nebraska consumers, so we must be safe there. Let us see. We load a car of apples at Glenwood, Ia., and bill it to Alliance, Neb., a town about two-thirds of the way across our sister state, in the very center of practically the only market left for us. We casually inquire what the freight will be out there and are struck dumb to find that it will be 60 cents per 100 pounds, at a minimum weight of 24,000 pounds to the car. We ask, Is it possible that you haul apples from Rochester, N. Y., to Sioux Falls, S. D., a distance of 1,238 miles, for 49 cents per 100; or to Aberdeen, S. D., 1,400 miles, for 58 cents per 100, and now ask us 60 cents for hauling a car 400 miles through Nebraska, over one direct line of railroad?

"And this, gentlemen, is our only market, as we are cut off from Dakota points by the low eastern rates. Again, presume that we bill a car of apples from Rochester, N. Y., to Missouri Valley, Ia., with a view of diverting on through billing, anticipating to sell the car of fruit while in transit. Upon arrival of the car at Missouri Valley we learn that the freight to that point is 48 cents per 100 for a haul of 1,100 miles from new York, and if we wish to pay 1 cent per 100 more, we can divert and send the car to Sioux Falls, S. D. This seems very reasonable, and would land the car 400 miles further on, where there are no apples, for 1 cent per 100. Just for curiosity, we ask how much would you charge to send this car to Chadron, Neb., on the same through billing, over the railroad system? Our hair almost stands on end when we learn that it will cost us 62 cents additional freight, or 62 times as much as it would be to Sioux Falls, S. D. But, then, Chadron is in Nebraska—Iowa's only available market. The freight rate from Rochester, N. Y., to Sioux Falls, S. D., is 49 cents pre 100, a distance of about 1,200 miles. You may reship from Sioux Falls to Bismarck, N. D., 400 miles, for 34 cents per 100, but to rebill from Council Bluffs to McCook, Neb., 288 miles, it will cost you 48 cents per 100 pounds, and Sioux Falls is not an apple-producing point, while Council Bluffs is, and should have the advantage.

"The fruit-growers of Michigan have Chicago for their principal market. From points 100 to 250 miles out they have a rate to Chicago of from 7 to 16 cents per 100. The same applies to Central New York, supplying New York city, Atlantic coast and export trade. In addition to being favored with very low rates to a very large home market, their Minnesota and Dakota rates are such as to come in direct competition with us, but we of Southwest Iowa have to pay seven times as much freight for a proportionate number of miles to Central and Western Nebraska, which should be our most available market.

"It is 413 miles from Kansas City, Mo., to McCook, Neb., and 283 miles from Omaha to the same point. Notwithstanding this difference in mileage the freight rate from Kansas City is identical to McCook and all other points in Central and Western Nebraska, thus putting Southwest Iowa in direct competition with some of the largest apple orchards in the world, which are located just back of Kansas City in the flint hills of the Ozarks, where orchard lands can be bought today for $1 to $5 per acre.

"It is 850 miles from the Missouri river out across the plains of Nebraska and Colorado and over the Rocky mountains to Paonia, Delta, Montrose and Grand Junction, Colo. To reach this prosperous community one would have to travel nearly two days and nights over two or three different railroad systems. Out on these plains and valleys, beyond the mountains, they have been planting orchards which are a success. There are today thousands of acres and hundreds of thousands of apple trees in the Grand River valley of Colorado, which are bearing from five to twenty bushels of apples to each tree. You gentlemen of Southwest Iowa have viewed this wonderful transformation of the Great American desert with complacency. Why? Because you never dreamed that apples grown away out there beyond the mountains and over expensive railroads would ever come into direct competition with your home—Nebraska and Dakota—markets. What are the conditions as we find them today? In every store in Council Bluffs and Omaha, and every village throughout Nebraska you will find large stacks of boxes marked Paonia or Grand Junction apples. If you will take the trouble to walk down to the commission house district of Omaha and ask what freight they have to pay on these Colorado apples you will be told in a confidential way, as though it was too good to be true, 'Sixty—cents—per—100.' And yet these apples are brought down through Nebraska, our most available market, and laid down at our very door for less money than we can ship our fruit to points a little beyond the center of Nebraska and less than half the price we would be charged to points beyond the Rocky mountains.

"Gentlemen, do you think that New York was given the low rate of 49 cents per 100 to Sioux Falls and Watertown, S. D., without asking? Do you think that Michigan is enjoying a freight rate to Minnesota and Dakota points at a parity with ours, notwithstanding the distance is twice to three times as far, without an effort on their part? Do you imagine for one moment that Kansas City would be enjoying an equal tariff rate with Omaha to all points in Central Nebraska, when the distance is nearly twice as far, without putting up a strenuous fight? Can it be that these grafters—the railroad companies—condescended to give Western Colorado a rate of 60 cents per 100 to the Missouri river without any solicitation or effort on the part of the fruit-growers of Colorado? I say, No! We have slept on our rights while other fruit-growing communities have used their influence

Our 4-Gal. Sprayer at work in an Orchard.

$5.00 SPRAYER FREE

To have you introduce Rippley's 4 and 5-gal. Compressed Air Sprayers in your localities, we want you to canvass for us. Write at once for our 100-page Sprayer Catalogue, as we want you to sell THREE ONLY of our 4 or 5-gal Sprayers to your neighbors at prices below, and we will give FREE a $5.00 No. 15, 4-gal. Galvanized Sprayer, complete as shown in cut.

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If you are not in a position to take advantage of our $5.00 Free offer, we will upon receipt of $1.50 in stamps, money or express order, ship by express, C. O. D., subject to your inspection at express office, one or our No. 15, 16, 17 or 18 Sprayers. When you find it as we represent, you pay agent balance, and if not as represented, we will forward another Sprayer free of charge.

Don't Experiment—Buy the best Sprayers. They prove the cheapest in the end. We don't claim to manufacture the cheapest Sprayer on the market. We do claim and have demonstrated for the past five years that we manufacture the best.

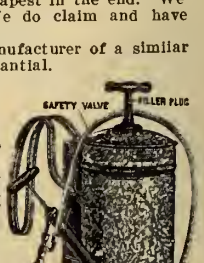
Our Challenge—At any time we will enter a test, with any manufacturer of a similar price Compressed Air Sprayer, and prove that our Sprayer is more substantial.

What It Is Guaranteed to Do—To spray solution in the form of a mist, and to force a greater distance from the nozzle than any other 4 or 5-gallon Sprayer on the market.

To spray trees and whitewash buildings 25 feet high or more, by using extension poles to elevate spray.

To spray more vegetables, bushes, trees and plants with less labor and with less solution, and to last longer than any other 4 or 5-gallon Compressed Air Sprayer on the market.

Wheelbarrow Compressed Air Sprayer.



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They are made to strap to body, and a person can walk and spray at leisure by simply turning the pet cock off and on.

They have a better brass cylinder pump. The air being forced in at the bottom, thoroughly agitates the solution; and after air is pumped in according to directions, no more labor is required, excepting holding the nozzle. More air can be pumped in without taking Sprayer from body.

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Extra hose, per foot, 8c. Nozzle, $1.25. Bamboo Rod, Copper Tube through center, to elevate spray in high trees, suitable to attach to these Sprayers, 4-ft., 75c; 5-ft., $1.00; 8-ft., $1.25; 10-ft., $1.50.

A Complete Four-Gallon Sprayer includes two feet of hose, strap, and one Single Vermorel Nozzle, for making fine or coarse spray.

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Prepared Spraying Mixtures—Are highly indorsed and are cheap. By using them, and our Sprayers and following our Spray Calendar, telling when to spray and what to use you will meet with sucess. 100-page Catalogue mailed FREE.

Mountain and Hill Sprayer—can be pulled by horse.

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Hardie Spray Pumps

make a spray that penetrates every crevice of the bark and every fold of the leaf, a spray that is driven with such force that it envelops the entire tree in fog, and they are made in such a way that they will not rust, clog, break or give a moment's trouble. AND THEY WORK SO EASY.

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See price list; send for it now. Certificate of genuineness furnished that our stock is **true to name**. Satisfaction guaranteed. Address,

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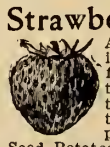

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a two-cylinder gasoline engine superior to all one-cylinder engines; revolutionizing gas power. Costs Less to Buy and Less to Run. Quickly, easily started. No vibration. Can be mounted on any wagon at small cost—portable, stationary or traction. Mention this paper. Send for Catalogue. **THE TEMPLE PUMP CO., Mfrs., Meagher & 15th Sts., Chicago.** THIS IS OUR 51st YEAR.

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LIME, SULPHUR, SALT to perfection. No Valves to Cut. No Packing to Wear. No Piston to Grind.

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Gentlemen—In reference to the Niagara Gas Sprayer purchased of you last spring, I must say that Iam very well pleased with it. I used the Lime, Sulphur and Salt Mixture and, thanks to the Sprayer, did one of the finest jobs of spraying I ever saw donc, almost completely killing out the scale on a very badly infected plum orchard. Yours respectfully,
JAMES TITTERINGTON.

A postal with your name and address will bring our Catalogue.

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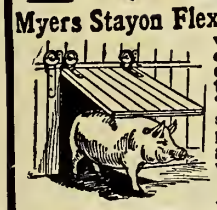

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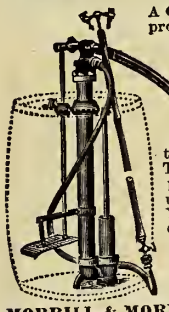

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Knapsack and Bucket Sprayer Combined.

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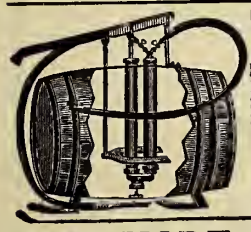

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"Kant-Klog" Sprayer

with new spring shut-off. Catch a good thing quick. Write for free sample plan and full particulars

Rochester Spray Pump Co., 17 East Ave., Rochester, N.Y.

Spray for scale with the WALLACE SPRAYERS. No expense for power.

Wallace Machinery Co. CHAMPION, ILLINOIS

When writing to advertisers, always mention The Fruit-Grower.

and laws to take away from us our nearest markets.

"Let there be something doing. This convention should appoint and finance a strong committee, which should be empowered to meet the Iowa state board of railway commissioners, which convene in Des Moines December 29 for revision of freight rates. The railways are now considering what is called the uniform bill of lading, which, if adopted, will require shippers to pay 20 per cent advance in rates, or sign away all their rights in case of loss or damage, while goods are in transit. This, if adopted, will probably mean a 20 per cent advance for the already freight burdened apple. It would be folly to ship perishable fruit and sign away right of damage. In case the fruit should be allowed to lie in freight yards, which ordinary freight often does for weeks, it would freeze or rot.

"The interstate commerce commission is now in session in Chicago and fortunately the Missouri river country is well represented by different commercial bodies, fighting this nefarious so-called uniform bill of lading, and it is to be hoped that they will be successful.

"And in conclusion, if a committee is again appointed by this association to take up the railway tariff let this be the slogan: 'Give us our own; cut the rates half in two from Council Bluffs to Nebraska and the Dakotas.' And do not let up until it is done."

Is the Minkler Immune from Root Rot?

In my 5-year-old orchard, where other varieties have been affected a good deal with root rot, the Minkler has not been affected. In an old orchard here, with which I am acquainted, trees of this variety are standing, while trees of most other varieties have been gone for many years. May it not be that the Minkler is the kind we have been looking for, which is immune from root rot? Have other persons observed this fact? Would it not be well to set piece-root Minkler grafts, and in August bud them at a height of one and a half to two feet, in preparing trees for a large orchard? G. R. ANDERSON.

Lanagan, Mo.

This observation of Mr. Anderson is interesting, and the experience of others with this variety would help to throw more light on the subject. The subject of root rot is not discussed as much now at the various horticultural meetings as it once was, but a number of experiment stations are trying to find some immune stock, which can be double-worked, as suggested by Mr. Anderson.

By the way, there is a great field for investigation in connection with the double-working of trees. A prominent nurseryman told us some time ago that his nursery was growing a lot of trees for one of the best horticultural teachers in the west, to be planted in an orchard owned by this gentleman, the trees to be double-worked. In this case we believe a long Northern Spy scion is to be grafted on a short piece of root; the graft is planted, and after growing one season the tree is to be taken up and the piece of root cut away, the scion having thrown out its own roots. The trees are grown for another year in the nursery and are then top-worked with the desired varieties. Grimes trees, especially, are to be double-worked in this way, in an endeavor to overcome the weakness of this tree, in dying at the surface of the ground.

Still another work along this line is brought out in the advertisement of Gardner Nursery Co., Osage, Iowa, in this issue. This firm is using the system of foster-roots to induce the forming of roots from the scions, to get hardy trees which will not root-kill in the north. This whole subject is a most interesting one, and will become important. Some varieties of trees make very poor trunks, while others, with good trunks, are not desirable in fruit. Why not use the good trunks of the one upon which to grow the desirable fruit? Trees grown in this way will cost more—but they will be worth ever so much more. How many Fruit-Grower readers have had actual experience in growing trees of this kind? Let us hear from those who have, and the subject of varieties which are immune from root-rot, wooly aphis, and other root troubles can very profitably be discussed in the same connection.

Sound Advice for Fruit Shippers.

At a convention of truckers and farmers at Shreveport, La., recently, Prof. D. N. Barrow of the North Louisiana Experiment Station read a paper, telling of some experiments made by the station in shipping fruits and vegetables to Northern markets. The results of these experimental shipments impressed anew the lesson which has been taught so many times before, but which some persons are slow to learn. Let us hear this report anew from Prof. Barrow. We have all heard it again and again, yet it needs repeating:

Prof. Barrow first urges that only good fruits and vegetables be shipped; transportation charges are the same for culls as for fancy fruit.

"It is poor policy to ship a package that will not bring the top price in the market. In no industry than this is honesty a better policy. Never attempt to fool the buyer by putting the finest and best on top. He is sure to detect the fraud, and the result can only be disappointment. If your goods are of different quality and you must ship seconds then mark them as such and pack them separately. We learned that the best disposition to make of this inferior fruit and vegetables is to put them up in cans, thus saving them for winter use. With a little home canning outfit, costing not over ten dollars, one man and two children can easily put up three hundred cans a day; thus not only saving what would otherwise be lost, but at the same time providing themselves with a liberal supply of canned goods far superior in quality and beyond the possibility of competition of the regular cannery. So superior is this freshly canned home product that it will readily sell at an advanced price over the product of the regular cannery when it is once known.

"Another lesson learned very emphatically is that in order to reap the greatest profit you must raise in sufficient quantity so as to be able to ship in car lots. Not only do express shipments cost four to five times as much in freight charges, but the condition of the goods upon arrival upon the market is much inferior to that shipped in car lots. Seeing, as I have, cases of peaches and other tender fruit tossed from one end of an express car and dropped upon a pile or upon the platform by the express messenger like he would drop a hot iron; the wonder is not that the goods did not top the market, but that they sold at all. It only emphasizes how hungry the fellow must be who bought our stuff.

The necessity of car lot shipments points out the fact that organization is an essential to success. Truck crops require a relatively large amount of labor, as they have to be handled rapidly. It is almost impossible, were it advisable for any one farmer to plant and handle sufficient acreage to do this, and it is only by concert of action with his neighbors that car lot shipments are possible. But what is everybody's business is generally poorly done, and it is advisable to organize into a truck association. Elect a president, a secretary and a shipping clerk, in whom you have every confidence. Adopt certain necessary rules, live up to these rules and let your officers transact the business. No man should go into such an organization unless he has confidence in the ability and integrity of its officers and is going to obey the rules. If you have a proverbial kicker in the organization, turn kicker yourself and kick him out. My word for it, he will prove more destructive to the accomplishment of the aims of the association than the proverbial bull in the china shop."

Does your neighbor read The Fruit-Grower? Have you asked him to subscribe? If not, will you not attend to this at once? Five new subscriptions, or four new ones and one renewal, all for $1. Remember this, and try to get up a club.

EXCELSIOR
Spraying Outfits

insure large yields of perfect fruit. Spraying is not an experiment. It is a grand success. **Excelsior Sprayers** are the kind to buy.

SAVE THE FRUIT

from the ravages of disease and insect pests by the timely use of an **Excelsior Sprayer.** Endorsed by leading fruit growers in every section. Write for descriptive catalog.

WILLIAM STAHL. Box 6 S, Quincy, Ill.

FANNING MILL OFFER.

OUR OFFER. Cut this ad. out and send to us and we will send you by return mail, postpaid, a **special catalogue,** illustrating and fully describing **the best Fanning Mill made.** We will name you a **special offer** price, less than one-half the price usually charged for such mills. We will explain our **FREE TRIAL PLAN,** our pay after receipt terms, our binding guarantee. You will get the **most astonishingly liberal Fanning Mill Offer** ever heard of. If you could use a **fanning mill** at any price, on any terms, then don't fail to cut this ad. out and send to us and get all we will send you by return mail, free, postpaid.

SEARS, ROEBUCK & CO., CHICAGO.

The HESSLER

Rural Mail Box

Best and cheapest Rural Mail Box on the Market. Fully approved by Postmaster General. Big profits for agents. We want an agent in every town. Souvenir Buttons free on application. A large, strong box and a small price

H. E. HESSLER COMPANY, Factory 2, SYRACUSE, N. Y.

CHOICE

Strawberry Plants

Best varieties at the lowest prices. Our catalogue is free and will interest you. Send for one. Send five one-cent stamps and names and addresses of five fruit growers and April 1st I will mail you twelve Lucas, Reynolds or Crimson Cluster plants; all fine new varieties. Send names at once.

W. S. TODD, GREENWOOD, DEL.

The Sudduth Pear

Has succeeded beyond expectations; no longer an experiment.

Get the history of this marvelous fruit. Also price list of General Nursery Stock free. Write today. Agents wanted.

Augustine & Co. Nursery
Normal, Illinois.

The PEDIGREE QUESTION

As pertaining to the Strawberry. The experience of 20 years, pro and con. Every strawberry grower and every nurseryman should have it. Send postal for a copy to **M. CRAWFORD CO., Cuyahoga Falls, Ohio.**

A New Garden Magazine

Doubleday, Page & Company, publishers of "Country Life in America," issue

THE GARDEN MAGAZINE

a new monthly in all but an untouched field. A comprehensive periodical and Gardener's Reminder, it points out the things to be done during the month. It is delivered to subscribers two weeks before the first of the month—in ample time to have work well in hand. Twenty-five departments cover all branches of flower and vegetable gardening, garden trees and shrubs, hot house and cold frame growing, indoor plants and window boexs, in various parts of the country, and, altogether a magazine of general interest for people who love to grow things. Practical illustrations are superbly printed on the best coated paper throughout.

A first edition of 20,000 copies for February, ready January 14th, has been almost entirely sold out or spoken for. To insure your possessing this number you should send at once. No free copies. Price $1.00 a year; 10 cents a copy. Six subscriptions for $5.50.

Doubleday, Page & Co.,
133 East 16th St., New York.

Enclosed find $.....for **The Garden Magazine.** Please address

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The Wealthy as a Storage Apple.

The Fruit-Grower has published many articles testifying to the good qualities of the Wealthy apple, as being one of the best of the late summer and early fall apples in Northern Missouri. Farther north, of course, it is still later. We want now to give another evidence as to the value of this sort. Last September Mr. H. A. Squires, Wallace, Mo., had a good crop of Wealthy apples, which were of good quality—in fact, this variety is singularly smooth nearly every year with Mr. Squires. At the time the apples were picked the markets were full of Jonathan windfalls and other apples of poor quality, and as a result prices were very low. Mr. Squires tried to ship his fruit, but the markets in other places were flooded. Accordingly, he put several hundred barrels in cold storage, to wait until the market was clear of low-grade fruit. In December Mr. Squires showed The Fruit-Grower some of this fruit. It came out of storage in perfect condition, and the apples sold well. At that time he was getting $4 per barrel for No. 1 apples and $1 a bushel for No. 2. The apples were crisp and good and were worth the money.

Desiring to investigate the matter still further we called on one of the largest grocerymen of St. Joseph, where some of the apples were on sale. This gentleman had New York fruit of different varieties, also Colorado Jonathans in boxes and the cold-storage Wealthy. The latter sold for more money than New York apples, bringing 45 cents a peck at retail, and the salesman told us the Wealthy was the most popular apple he had in stock at the time, except the fancy Jonathans from Colorado.

Of course, this was an exceptional season, and Mr. Squires cannot expect to make so much money by storing the Wealthy apples every year. But this experience proves that even as far south as the Missouri river the Wealthy apple is a good one to grow, especially since it has been demonstrated that the apples can be stored to advantage, even where they are picked as early as the first of September. It may be said further that on this date—January 10—the Wealthy apples are still in the stores, in good condition.

Renewing Strawberry Bed.

I set out a strawberry bed in 1898, which has continually improved, both in fruit and plants, each succeeding year under my system of cultivation. I keep the soil well enriched and free from weeds. As soon as I finish picking the fruit, I mow the vines closely and rake them off. I then rake the bed thoroughly with an iron- tooth rake, making the whole surface of bed fine and clean; then mark the bed crosswise of last year's rows, leaving the row strips about eight inches wide. I thoroughly, but carefully, hand cultivate between these strips, so as not to injure the roots of the plants in these strips. In a few days the best and strongest plants will be up and running. I leave enough of the best and strongest plants to run and cover about one-half or two-thirds of the bed; carefully hoe out the plants not needed, and keep the soil clean and fine about these running plants. When the runners have covered the amount of space wanted, I cut off all runners as they appear, keeping the open spaces well hoed. If needed I apply a dressing of good, fine manure before mulching the bed for winter. I set only perfect flowering kinds. I have had good success with Corsican, Mead, Jessie, Brandywine, Clyde, Gandy and Parker Earle.—Rodney Seaver in Farm Journal.

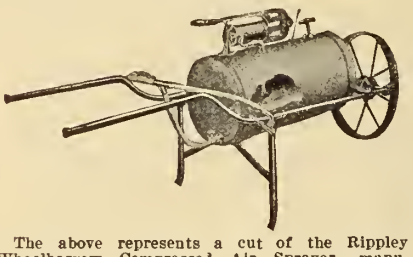
Notes.

The annual meeting of the American Breeders' Association will be held at Champaign, Ill., Feb. 1, 2 and 3. This is the organization which was formed several years ago, having for its object the improvement of plants and animals. A feature of the meeting will be the discussion on the afternoon of the first day's session of the subject of "Specific Methods of Breeding Corn, Wheat, Apples and Other Plants."

The twenty-fifth annual meeting of the Arkansas State Horticultural Society will be held at Rogers Jan. 24 to 26. This is in the heart of the apple-growing section of Arkansas, as well as a good peach country. From Rogers was shipped the first carload of Arkansas Elberta peaches. The attendance is expected to be large and the discussion interesting. For copy of the program address Prof. Ernest Walker, secretary, Fayetteville, Ark.

The "block of five" blank is not large enough, so I use this sheet to write list of nine names whose subscriptions I secured in about five minutes.—C. T. Johnson, Spokane, Wash.

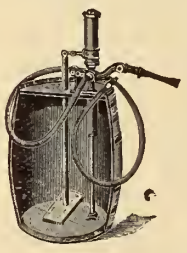
RIPPLEY'S WHEELBARROW COMPRESSED AIR SPRAYER.



The above represents a cut of the Rippley Wheelbarrow Compressed Air Sprayer, manufactured hy the Rippley Hardware Company, Grafton, Ill., manufacturers of sprayers, prepared spraying mixtures and cookers for boiling spraying mixtures. This firm has studied the needs of the fruit-growers and in the past five years have placed many labor saving machines on the market to reduce the labor of fruit-growers and farmers. From a small beginning they have worked up a large trade that extends to all parts of the world. They are now making large shipments all over the United States and many foreign countries. The compressed air sprayers seem to give perfect satisfaction, as they are highly recommended hy the leading seed and nursery firms in the United States and foreign countries. The above cut represents their wheelharrow compressed air sprayer, which has now heen on the market for two seasons, is highly indorsed hy parties using them. It is intended for spraying fields, gardens, lawns, trees, vines, currants, herries, etc.; also spraying on side hills where a harrel sprayer could not be used. It is so arranged that the solution is thoroughly agitated, as the air enters at the top of the tank throngh an air tube, which extends close to the hottom of the tank. It is a very easy matter to thoroughly agitate the solution hy simply working the pump a little. It requires hut two or three minutes to charge witb air. Then turn on the pet cock and machine will spray for one-half hour without recharging with air. You will note that there is no danger of hursting, as it has a safety valve. The frame is made substantial, of three-quarters inch gas pipe, and has an iron wheel twenty inches in diameter. The tank is made of heavy galvanized steel and has a fine brass cylinder pump, 3x6 inches. It is fitted with two single vermorel nozzles, and will spray two or more rows at a time. There is nothing on the market to equal it for spraying potatoes, tobacco, strawberries or cahbage, etc. At the price it sells no fruit-grower should be without one.

If your face hurns and stings and looks as if it had fallen among hornets, don't hlame your luck or your sensitive skin necessarily. The chances are that in shaving you are using cheap shaving soap or perhaps ordinary toilet soap. You might just as reasonably use a case knife for a razor. The J. B. Williams Company make a real shaving soap—and there's a hig difference. Take advantage of their offer elsewhere in this paper. It will make your face happier and better to look at.

Spray Pumps



DO NOT be fooled in buying low-priced Iron Pumps or those with so-called brass working parts. They soon wear out and are thrown away. GET THE BEST. A pump that is good for years, made of solid brass, simple in construction, easy working, capahle of high pressure, no trouble to keep in order. Take the advice of PRACTICAL FRUIT GROWERS and huy no spray pump only those manufactured by

LATHAM & CO., SANDUSKY, OHIO.
Send for Catalogue.

BEES If interested in bees, subscribe for the PROGRESSIVE BEE-KEEPER
50 cents per year. Sample copy free, also copy of catalogue of Bee Keepers' Supplies.
LEAHY CO., HIGGINSVILLE, MO.

10,000 Cumberland Raspberry
25,000 Cardinal Raspberry; also Early Harvest Blackberry. For sale at low prices. Write
T. B. MILLER, SPRINGDALE, ARK.

Wanted=A Good Single Man
For general farm work; must be an all-round man; permanent place for the right man. Address C. B. GREEN, 1106 E. 5th St., Sedalia, Mo.

Virginia Homes
You learn all about Virginia lands, soil, water, climate, resources, products, fruits, berries, mode of cultivation, prices, etc., hy reading the VIRGINIA FARMER. Send 10c for 3 months' subscription to
Box F. G., Farmer Co., Emporia, Va.

Make your own Fertilizer at small cost with
Wilson's Phosphate Mills
From 1 to 40 H. P. Send for catalogue.
WILSON BROS. Sole Mfrs., Easton, Pa

HAVE YOU
HAD YOUR SPRING
Catalogue or Price List
PRINTED YET?

WE ARE making a specialty of this kind of printing for nurserymen, and would like very much to have you correspond with us regarding the matter. Our business in this line is increasing every year. We have handled more catalogues this year than ever before, and are fully equipped to turn out your work in first-class manner. We have a large number of cuts on hand, which we furnish for the use of our customers free of charge. If you desire, we can compile your catalogue at a nominal charge for the work.

Write us for estimates and samples. Do it Now. Address,

PRINTING DEPARTMENT
The FRUIT-GROWER COMPANY
ST. JOSEPH, MO.

The "Bro. Jonathan" Series of Fruit Books

The Fruit-Grower has for some time been figuring on issuing a series of handy booklets on fruit subjects, which could be sold at a low price, and which could be offered to our readers as premiums for their efforts in securing new subscribers for The Fruit-Gower. We are glad to announce, therefore, the first five books of the series will be

Ready for Mailing in February

It was the intention to have these books ready January 1, but we were delayed in securing our illustrations for the booklets. The titles for the first five of the "Bro. Jonathan Series" follow:

No. 1=Propagating Trees and Plants
No. 2=A Treatise on Spraying
No. 3=How to Grow Strawberries
No. 4=The Home Garden
No. 5=Packing and Marketing Fruits

It is the intention to issue at least five more of these booklets, but they will not be ready before January 1st, 1906. We hope that every one of our readers will take advantage of this opportunity and send an order for one or more copies. They will be mailed postpaid at figures quoted.

PRICE 25c EACH
Set of Five for $1.00

Any person who is now a paid up subscriber may secure one of these books free by sending a new subscriber at regular rate, 50c. Of course the entire set may be secured on the same basis. Please remember that you must be a paid in advance subscriber in order to take advantage of this premium offer.

Order at least one of these booklets at once. We are sure you will be so well pleased with it that you will want the entire series. Address,

THE FRUIT-GROWER CO., St. Joseph, Missouri.

R. B. Ferris, Nyack, N. Y., writes that two years ago he found a San Jose scale on a dwarf pear tree and immediately sprayed it with a teaspoonful of concentrated lye, such as is used for domestic purposes, in a tumbierful of water. The mixture was applied with a greenhouse sprayer. A new, healthy growth was formed before winter, and since then this remedy has been used on a number of trees, without any injury. The mixture was applied while the trees were in full leaf.

Illinois Horticultural Meeting.

The annual meeting of the Illinois Horticultural Society was held at Bloomington last month, instead of at Champaign, as has been the case for several years. The meeting was a good one, and notwithstanding the short apple crop growers seem not to be discouraged. The Fruit-Grower has not as full a report of the meeting as usual, owing to the fact that the dates of the meeting conflicted with the Iowa meeting and our representative attended the sessions of the latter society.

Officers elected for the ensuing year are as follows: H. A. Aldrich, Neoga, president; George J. Foster, Normal, vice president; L. R. Bryant, Princeton, secretary; J. W. Stanton, Richview, treasurer.

The exhibit of apples was a surprise; in fact, it was one of the best the society has made. In his address President Aldrich recommended that the members of the society give more attention to the matter of forming shipping associations, for unless there is union among the producers they will not make the profits to which they are entitled. The work of spraying, cultivating, etc., is increasing the cost of producing fruit, and a change must be made. The growers must have a certain price for their fruit to make any money, and at the same time the consumers will not pay beyond a certain point, and a price must be found which will afford a profit and at the same time will allow the consumers to satisfy their needs.

"Packing, freight and storage costs on the average $1.25 per barrel of apples. This is too much and must be reduced in some way by cheaper packages, cheaper freight or cheaper storage. The buyer's method of sending men out over the country to locate and pack fruit is a very costly practice and one that could be dispensed with, if the grower would learn to pack his fruit so that it would pass inspection. It would make a difference in the grower's favor of at least 25 cents per barrel."

Mr. F. D. Voris, one of the best growers in the state, said he thought most orchardists have been planting trees entirely too close. They should be planted about thirty-six feet apart, so that when the trees come to their full maturity they will not be crowded. Mr. Voris does not approve the plan of planting trees close and cutting out some of the miater. The close planting, he says, dwarfs the trees and they do not reach their best development and the fruit grown on such trees will not be all that it should be.

Another interesting subject discussed at the meeting was brought up by Dr. Forbes, state entomologist. The experiment station has been trying to find some way of preventing injury of apples by the curculio. A number of tests were carried on during the past summer, the tests being to prove the comparative value of the liquid and dust spraying methods. The comparison of these methods was very much in favor of the liquid spray, bordeaux mixture and paris green solutions being the most beneficial. On the dust-sprayed trees there were no perfect apples and over 90 per cent were damaged by the curculio. On the unsprayed trees the results were about the same, while in the case of the liquid spray the apples were practically free from the effects of the insect. The tests were all illustrated by exhibits of apples showing the effect of the applications.

The second annual meeting of the Alabama Horticultural Society will be held at Montgomery January 24 and 25. Reduced rates will be allowed by the railroads, and an interesting program will be presented. W. F. Heikes of Huntsville is president, and R. S. Mackintosh of Auburn is secretary of the society.

Henry Stork, Bluff Point, N. Y., writes: "The advertisement I recently plecd in The Fruit-Grower brought me more correspondents than I could serve. I would heartily recommend the paper to all persons interested in fruit-growing."

Want to know some things about spraying? Send you questions at once and have them answered in February Fruit-Grower.

NAMES OF FARMERS WANTED

The Valley Farmer wants names and addresses of farmers anywhere in the U. S. They want to get them interested in their big farm magazine which now has a circulation of over 160,000 copies and is acknowledged to be the best farm paper in the West. The subscription price is 50c per year, but if any of our readers will send them five farmers' names and addresses and ten cents in stamps or silver they will enter you as a subscriber fully paid for a whole year. Address
Valley Farmer, 501 Jackson St., Topeka, Kan.

THE FRUIT-GROWER AND ST. LOUIS STAR

Since many of our readers will want to subscribe for a good newspaper for 1905, we have made arrangements with The St. Louis Star whereby it may be secured at a low price in connection with The Fruit-Grower. The Star prints the news of the world boiled down for busy readers. Its agricultural departments are brimful of practical information. Its market reports are reliable and complete, and with its women's and household page and short stories, is a popular news, family and farm paper.

The Fruit-Grower ..... 50c a year.
The St. Louis Star (twice a week)..... 50c a year.

$1.00

Both papers one year.....75c

If you desire to take advantage of this exceptionally good clubbing offer, send remittance at once to

THE FRUIT-GROWER CO., ST. JOSEPH, MO.

Something That Endures!

As Long as the World Stands Your Lands Are Secure

No other form of property is as safe. All wealth is traceable back to real estate. Unimproved lands are everywhere steadily advancing. Are you adding to your income thereby. WE OWN OR CONTROL many large bodies of the finest fruit, timber and mineral lands

IN SOUTH CENTRAL MISSOURI IN THE ELBERTA PEACH BELT AND "LAND OF THE BIG RED APPLE,"

lying mainly in Howell, Shannon and Douglas Counties, which we are offering at nominal prices in any sized tract to suit purchaser. An abstract showing a perfect title furnished free with every tract. Large tracts of grazing lands suitable for ranches also for sale. If you are looking for a good investment, or if you want a home where land is cheaper (considering its intrinsic value) than anywhere else, where winters are short and mild, climate unexcelled, water pure and abundant, where hot winds and blizzards are unknown, write for our booklet telling all about the country.

N. F. MURRAY & SON, OREGON, MISSOURI

We Sell Farms

RANCHES, HOMES, OR OTHER PROPERTY, NO MATTER WHERE LOCATED

TO YOU WHO WANT TO BUY
Before you buy a farm, ranch, home or property of any kind, anywhere, tell us what you want and where you want it. We can fill your requirements.

TO YOU WHO WANT TO SELL
If you own a farm ranch, home or other property, and you desire a quick sale, send us description and price at once. We quickly find cash buyers.

N. B. JOHNSON & CO., H-505 Bank of Commerce Building, KANSAS CITY, MO.

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YOU PAY NOTHING UNTIL CURED.

A permanent, quick and lasting cure guaranteed. No cutting, no pain and no detention from business. Consultation and examination free. Call or send for free book, which tells all about rupture or hernia, with testimonials.

Dr. Ernest Henderson, 103 W. 9th St., Kansas City, Mo. *N. B.—I am also an expert truss fitter.*

Fruit Farms and Fruit Land for Sale

This department is for the benefit of Fruit-Grower readers who wish to buy, sell or lease farm lands. All advertisements of this nature will be inserted for a charge of 2 cents per word, each initial and number to count as a word. No display type will be used in ads which are accepted at this reduced rate, and all charges must be paid in advance. The rate of 2 cents per word is for each insertion. Count the words when sending your advertisement, and the cost can be easily ascertained. THE FRUIT-GROWER CO., St. Joseph, Mo.

LANDS—CHEAP.

Large bodies of land and ranches; timber land, fruit and truck farms in Kansas, Oklahoma, Texas, Old Mexico, Louisiana, Arkansas, Southern Missouri, Colorado, New Mexico and California. Tell me what you want and where you want it and how much money you will invest if suited and I will send you list of bargains of the kind you want in that locality. I also have small farms and ranches in all parts of said States. I am working above mentioned territory thoroughly. Write me and see how well and how promptly I will serve you. I have land at 35 cents to $35 per acre.

GEORGE W. MORRIS, LYNDON, KAN.

FOR SALE—Farm of 320 acres, one and a half miles from Winchester, Kan.; either quarter section will be sold separate if desired. On the southwest quarter is a house of 8 rooms, a cottage; a barn 24x40, corn crib 10x40, driveway between, all under shingle roof; hog pens, smoke house, 5-ton scale, 2 wells, cistern, corn crib; 500 Missouri Pippin, 250 Gano apple trees, set out nine years ago; 550 Jonathan set out two years ago; 12 acres in strawberries, blackberries, red and black raspberries, two packing sheds. On the southeast quarter are 6,000 Ben Davis, 1,800 Gano apple trees, set out ten years ago; 500 Gano, set out two years ago. Living water the year round on every 40 acres if wanted. Timber on the two quarters. For particulars write WM. BOOTH, Winchester, Kan.

Do you want a profitable home in the heart of the Rocky Mountains, elevation 5,800 feet, in a climate the most healthy and equable in America, on this parallel? I can sell it to you. A fruit farm of 25 acres, under irrigation, in Delta County, Western Colorado, celebrated for crops of apples and peaches every year by irrigation; nine acres in winter apples, ten years old, and Elberta peaches from four to seven years; eight acres in alfalfa. This orchard grew 2,000 bushels of apples and 3,500 boxes of peaches, crop of 1904, and is famous locally for regular yield of big crops. Water-right the best. House, barn, cistern, rural delivery and telephone, half mile to town and railroad depot. Orchards with water-right may be bought here at prices from $200 for two years set to $600 per acre in full bearing; income from peaches from $300 to $500 per acre; grain and vegetables a success; sugar beets net from $40 to $70 per acre. Study the foregoing facts and figures, and if you mean business, write for other important items and price of the farm. I. O. BRANHAM, Hotchkiss, Colo.

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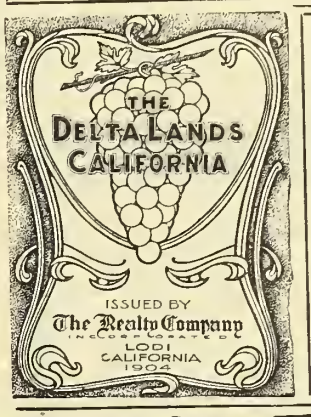

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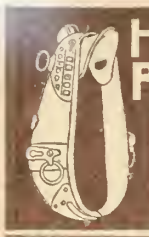

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New Offerings for 1905

It seems that not so many new things are offered by the nurserymen this spring as usual—at least, not so long a list is sent to The Fruit-Grower for mention. Among the list of those received are the following:

Ruby Red Raspberry.—This is offered by Valley View Frult Farm, C. G. Velie & Son, proprietors, Marlborough, N. Y. This is a seedling of the Marlboro raspberry, and the introducers say it is a strong grower, with large, hardy canes, and is a good plant maker. The fruit ripens with the earliest and continues over a long season. Fruit is large, bright red in color, exceedingly firm and of good flavor; berry is a good shipper. The Ruby Red has been tested for a number of years, and has the indorsement of those who have tested it.

President Roosevelt Strawberry.—Introduced by A. Y. Cathcart, Bristol, Ind. This is a cross between Clyde and Bismarck; very productive and a great plant-maker; foliage dark green, free from rust; berries equal to Crescent or Warfield on orlginator's soil.

Phenomenal Red Raspberry.—Originated by Luther Burbank, introduced by California Carnation Co., Loomis, Cal. This is the result of a cross between the Improved California Dewberry and the Cuthbert raspberry. It takes the color and flavor of the latter and size and shape more of the former. Mr. Burbank describes the new raspberry as follows: "It is larger than the largest berry ever before known; bright crimson raspberry color; productive as could be desired, and the most delicious of all berries for pies, canning, jelly or jams." Berries grow in clusters of from five to ten or more, and individual berries, under favorable conditions, have measured three inches one way to three and a half to four the other. The vines grow as trallers, and concerning methods of cultivation the introducers say:

"In field cultivation there are two methods: One is to set the plants six or seven inches deep, six to eight feet apart in rows eight feet apart. Set in the spring is best, and let them grow until the next spring, but keep the ground well cultivated. Then set stakes twelve to sixteen feet apart and three and one-half or four feet high. Stretch a wire from top of stakes and staple down. Then gather up the vines and loosely twine or tie to the wire and continue cultivation. The other method is similar; only the plants are set 12 to 16 feet apart, in rows of only 4 feet apart. The berries ripen here the last of May and continue until the first of July. After the fruit is gathered, go through and cut out all the old vines and canes, as the new growth at the foot of the hill is the one to put up on the wire the following spring to bear frult."

Three new strawberries will be introduced by M. Crawford Co., Cuyahoga Falls, Ohio. The first is the Beaver. This was originated by John E. Beaver, Dayton, Ohio, who also originated the Margaret, Nic Ohmer and Kittie Rice. The Beaver is said by those who have tested it to be of the very highest quality. Another variety originated by Mr. Beaver, to be introduced by M. Crawford Co., is the Nimrod. This is not quite so good quallty as Beaver, but is deemed more desirable by those who have seen it, on account of its very healthy foliage. Plant is of moderate size, with thick, healthy foliage; perfect blossom, and makes an average number of plants. The variety is a good bearer; fruit is large, roundish conical, uniform in shape, brilliant red color, firm, and second only to the Beaver in flavor. Mr. Crawford says it is not surpassed in beauty by any variety which has come to his notice.

The third variety to be introduced by this company is the Victor, which originated with D. J. Miller, Holmes County, Ohio. Plant is of large size, with clean, healthy foliage, and sends out an abundance of stout runners. Blossom is perfect, and plant is an abundant bearer. Fruit is very large size and generally roundish conical shape, but sometimes corrugated. Color is a rich, dark, glossy red, about the shade of the Marshall; flesh is firm, of dark red color and delicious flavor. Season, medium to late. The variety is a favorite for canning in the section where it originated.

Champion Junior Peach.—Introduced by Xenia Star Nursery, Xenia, Ohio. A seedling of Champion and just like its parent, except that it is three weeks earlier

PHENOMENAL RED RASPBERRY

Blowers Blackberry.—Introduced by M. Crawford Co., Cuyahoga Falls, O. Berry is large, beautiful and good; plant is one of the very hardiest, and is a prolific bearer. Mr. Crawford says that it has the one point, hardiness, which has been lacking in blackberries, and he believes it will fill a place among the very best blackberries.

The King Grape.—Introduced by Wm. K. Munson, Grand Rapids, Mich. This variety has been exhibited at several horticultural shows and also at the St. Louis World's Fair. A committee from the Michigan State Horticultural Society says the variety is supposed to be a bud variation of the Concord, and describes the King as follows: "The King is more vigorous and prolific than Concord; time of ripening and length of season the same; clusters are one-fourth larger, grapes are more persistent in pedicels, pulp is more tender, flavor nearly the same, but more sprightly, seeds fewer in number, wood hardier and of shorter joints and the pedicels are larger. The committee recommends the graps as a valuable acqulsition, a worthy offspring of its parent, the Concord."

Abington Strawberry.—Introduced by Lester Blanchard, Abington, Mass. Plant is a good, strong grower, with healthy foliage; fruit stalk is stocky and stands erect from the ground; number of fruit stalks are from two to three, with from ten to fourteen buds each. Blossom is perfect, with lots of pollen; season with Dunlap and Bubach; fruit is large size, bright red in color, and firm, showing up well in crates; the variety is productive, and the orlginator claims it is the best matted-row berry he has ever seen. The variety was awarded second premium at the annual exhibition of the Massachusetts Horticul-

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Catch 'em alive; self setter. Price, each, to hold three rabbits, $2.50 by express. STEVENSON, N. & P., FARM, Fordyce, Ark.

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tural Society last June. The variety is especially recommended by the Introducer to take the place of Bubach.

Novelties in Shrubs.—John C. Teas & Son, Carthage, Mo., who originated the well-known Teas' Weeping Mulberry, have a number of new shrubs for spring of 1905, among them being Cut-leaf Staghorn Sumac, American Purple Fringe or Smoke Tree, Japan Bean Vine, or Kadzu Vine. And for the fall of 1905 they will have what they claim is the best of all, Teas' White-Flowering American Red Bud, or Judas Tree. The latter will certainly be a novelty of interest.

Matthews Winter Pear.—Introduced by Hopedale Nurseries, Hopedale, Ill. This is an old pear, the original tree of which is still standing, after a period of over sixty years. The tree has never failed to bear, and has borne as much as fifty bushels. The original tree has not blighted. Fruit is of medium size, globular shape, and is perfectly green when picked; when taken from the tree it is hard, and after being ripened in the cellar, its season is November and December, although some specimens keep until January. Quality is pronounced good to very good.

New Offerings by the Seedmen.

The seedmen, too, seem to have fewer novelties this season than usual. The public is getting more particular in its requirements of what shall be offered in the way of vegetables, which may account, to some extent, for this. Not a full list has been sent The Fruit-Grower, and other offerings will be announced later.

W. A. Burpee, Philadelphia, Pa.—The 1905 catalogue of this firm is the twenty-ninth which has been issued, and it is in every way a good one. Few of the seed catalogues are as well written and as well printed as Burpee's. Not so many new things are offered this year; perhaps the company is saving these for its thirtieth anniversary next season. It is expected to make next season's catalogue something exceptionally fine, and as it will be sent free to customers of 1905, attractive offers are made to secure customers this season. Among the new things offered by Burpee are a new strain of pansies, a new nameless Tom Thumb nasturtium, a new strain of orchid-flowered sweet peas. Burpee's White Wax bush bean and a new sweet corn, Howling Mob. The White Wax bean is said to combine quality and beauty with extreme productiveness; the pods are pure white and brittle and entirely stringless. Howling Mob sweet corn was originated by a market gardener, who gave the name Howling mob, because the grocerymen to whom he sold his produce congregated in a howling mob demanding more of the corn. It is said to be of unusually fine quality, and its season is from one to five days after White Cory. In fact, Burpee says it comes in between Golden Bantam and Burpee's White Evergreen. The Burpee catalogue for 1905 is free to all Fruit-Grower readers who ask for same—and if they receive a copy they will more than likely send in an order which will secure the anniversary catalogue next year also.

J. J. Bell, Deposit, N. Y.—Among the offerings of this firm are Bell's Earliest Summer Cabbage, New Cumberland cucumber and Bell's Wonderful lettuce. These varieties are claimed to have certain points of merit which entitle them to consideration at the hands of the gardeners.

St. Louis Seed Co., St. Louis, Mo.—This firm offers a new cabbage, Nichol's Top Notch, claimed to be very early and a remarkably heavy yielder. For late cabbage they offer American King. Nichol's Greenback cucumber is a new thing, claimed to be one of the handsomest long, smooth green early cucumbers. A new bush lima bean is offered for the first time. The Improved Peach Blow potato is another novelty, and the firm is pushing its Noxall sweet corn, which was so favorably received last season. Two new field corn varieties are offered, White Star and Gold Bond. Both are claimed to be excellent varieties, and are being generally tested.

Elbridge E. Wheeler, Bridgeport, Conn.—This firm offers a new rose, Frau Karl Druschki, or Snow Queen; this is perfectly hardy and a most vigorous grower, throwing up enormous shoots, which are covered with snow-white blossoms. Noroton Beauty is a new potato; it is extremely early, producing mature potatoes sixteen days before Early Rose; plants are very productive, and potatoes are handsome in appearance and excellent in quality; while very early, the variety is a good keeper. Nicotiana Sanderae is a new hardy annual flower, a bushy branching plant two feet high, covered with handsome rosy carmine flowers; treat the plant same as salvia and use for same purpose. Baby Rambler is a new dwarf perpetual blooming Crimson Rambler rose. It resulted from a cross between Crimson Rambler with Gloire des Polyanthus; plants grow 24 to 30 inches high, foliage of a dark polished green, and blooms are produced in enormous clusters from June until frost; color same as Crimson Rambler.

Ford Seed Co., Ravenna, Ohio.—A letter from this firm says it is pushing the Commonwealth and Buster strawberries, Chautauqua Climbing currant, Mixima, Noroton Beauty and Market Prize potatoes, Malakhoff sweet corn, Crimson Beauty and Eureka beans, Pride of Sunnyside egg plant, Delicious squash, Chalk's Early Jewel and Livingston's Globe tomatoes, and Ford's Sure-Crop Yellow Dent corn.

North Star Plant Farms, Cokato, Minn.—This firm offers Minnesota No. 169 wheat. This variety was produced by the Minnesota Experiment Station and won a gold medal at the World's Fair St. Louis. It is especially adapted to Northern states.

San Saba Pecan, offered by S. W. Peek, Hartwell, Ga.—While this pecan has been known locally for several years, it has never been scattered widely as it deserves. It is perhaps the thinnest-shelled and best-filled nut in cultivation. It has more meat than many pecans that are much larger.

Arthur Cowee, Berlin, N. Y.—A letter from Mr. Cowee states that for 1905 he will have his World's Fair collection of Gladioli, in addition to his Gold Medal and Silver Trophy Strain, which stocks were awarded a grand prize at the St. Louis World's Fair. Catalogue will soon be ready. Those who saw Mr. Cowee's wonderful exhibit at St. Louis will need no further mention of his flowers, but to those who did not have this pleasure, The Fruit-Grower can say that this exhibit was one of the features of the fair at the time it was made. Thousands of spikes of blooms were on exhibition at once, and the selection and classification of colors has reached such a stage that the flowers showed up more beautiful than ever before. Customers for 1905 will be given the benefit of the selections which were made at St. Louis.

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CABBAGE SEED

I will mail FREE one full package of any variety, EARLY, SUMMER, FALL or WINTER—or for the small sum of 10 cents, I will mail four samples embracing the four seasons.

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Sound, because they grow and produce good crops. Our catalog is free and we want you to have one. It describes the best varieties only of vegetables, fruits and flowers, including the COMMONWEALTH STRAWBERRY, which is superior to the famous Sample; also other choice varieties.

FORD SEED CO., RAVENNA, OHIO.

Rocky Ford Cantaloupe Seed

500 pounds of choice selected Seed, at 60c. per lb. Mail or express prepaid; oz. 10c.; ¼ lb., 25c. Buy from grower. W. R. GIBSON, Las Animas, Colo.

A NEW BLACKBERRY

Originated near Lake Erie, and has not missed a crop in eight years. A good crop was sold in 1904 at $4 a bushel. A tremendous grower and enormously productive. Over 2,600 berries on one plant. About 100 to the quart. Ripens every day for two months. For history and description, address

M. CRAWFORD CO., Cuyahoga Falls, O.

WANTED—Men, or families, with, or without means, desiring to move to Texas, and buy, lease, or rent lands and grow cotton, corn, fruits and vegetables. W. S. GIBBS, Huntsville, Texas.

Posts Cedar Posts and Poles Direct from Woods
DELIVERED IN CARLOAD LOTS FREIGHT PAID
to your station. Buy while hauling is good and prices low
Send for Estimate and Official Specifications.
SOUTH CHICAGO & CALUMET LUMBER CO., 92 Harbor Avenue, CHICAGO, ILL.

Absolurely Safe & Reliable— Ask your friends

Caldwell Tanks & Towers

NO POINT IS TOO REMOTE

for florists and gardeners are so built as to be shipped at the minimum freight charge. After arrival, any intelligent mechanic can erect one from the plans and directions furnished.

W. E. CALDWELL CO., LOUISVILLE, KENTUCKY.

Field—Garden—Flower SEEDS

Everything for Farmer or Gardener, Garden Tools, Seed Sowers, Bale Ties, and Onion Sets. LARGE STOCKS Clover, Timothy, Alfalfa, Millet, Cane, Kaffir, Seed Corn, Potatoes, Blue Grass, Orchard Grass. Write for our Catalogue—Free.

MISSOURI SEED CO.
Successors to Trumbull & Co.
1426 St. Louis Ave., KANSAS CITY, MO.

IOWA GROWN
TREES

Apples, peaches, pears, plums and cherries, grape vines, small fruits of all varieties, roses and ornamentals, evergreens for ornamental and windbreak purposes. Specialties, Wragg Cherry, Stoddard and Klondyke Plums, Iowa Raspberry and Hartford Pear. Don't fail to send for our Catalogue and get our prices before ordering, as we will save you money.

Central Nurseries, Waukee, Iowa
J. WRAGG & SONS, Proprietors.

Catalogue Review.

Nurserymen and seedmen seemed to be a little late in getting out their catalogues for the spring of 1905. Perhaps the lateness of the season last spring made them cautious to this extent . The nursery catalogues show an improvement over those of a year ago. Perhaps no feature of the nursery business has shown such marked improvement as in the preparation and printing of catalogues. The Fruit-Grower has printed a number of good catalogues this season, and we may be pardoned for mentioning these first.

New Haven Nurseries, New Haven, Mo.—This firm has built up a wonderful mail-order business through the wise distribution of its catalogues, and then by furnishing good stock to its customers. The catalogue, therefore, is built to sell stock—and it does it. This year's catalogue is fully up to the standard of previous years, listing a general line of nursery stock, with full line of varieties. Great numbers of this catalogue are issued, and it is for general distribution.

Gage County Nurseries, Beatrice, Neb.—This firm has a good catalogue, with full line of nursery stock, with particular attention paid to those things which are most in demand by Iowa, Kansas and Nebraska planters. This firm makes a speciality of apple seedlings and also of different kinds of forest tree seedlings, such as locust, osage orange, mulberry, etc.

Fairbury Nurseries, Fairbury, Neb.—A catalogue calculated to help the planter who wishes to order his stock by mail direct from the grower. A general line of stock is listed, with prices and descriptions. This catalogue is well gotten up in every way.

Marshall Bros., Arlington, Neb.—The catalogue of this firm is a small one, with descriptions of different varieties of fruits. This firm has been identified with Nebraska horticulture for many years, and the members know what is needed in that state and its contiguous territory. Besides having a large nursery business, the firm has extensive orchards, and is prepared to give good, sound advice to planters—indeed, there is much good advice in their catalogue. We recommend that our readers in Iowa, Nebraska, the Dakotas and the Northwest, particularly, send for this catalogue. The firm is a reliable one, and their goods may be depended upon.

Alvin Fruit & Nursery Co., Algoa, Texas.—This firm has advertised in The Fruit-Grower for a number of years. Its catalogue is particularly interesting to our Southern readers, yet many things are listed which our friends in the North will desire to test.

Chattanooga Nurseries, Chattanooga, Tenn.—This catalogue, while including general stock, makes a specialty of strawberry plants and peach trees. The nursery is located in a section where both of these can be grown to perfection, and the annual planting of each reaches huge proportions. The newer varieties of peaches which are being extensively planted in the South, and which should be tested elsewhere are listed.

Fruitful Plant Farms, Sherman Heights, Tenn.—This nursery makes a specialty of strawberry plants and June-bud peach trees, although other lines of stock are listed. Commercial growers in the South, where peaches are being so extensively planted, will be interested in the June-bud peach trees which are offered, and strawberry growers everywhere will be interested in the list of varieties of this fruit offered.

Linn County Nurseries, Center Point, Iowa.—This firm has a neat catalogue and is building up a good business. A good line of stock is carried, with particular attention to the sorts which have been proved by test to be the best for planters in that part of the country.

Shenandoah Nurseries, Shenandoah, Iowa.—This firm does a wholesale business, selling to large planters and other nurserymen. It has recently issued a very neat circular telling of their facilities for handling business. This firm makes a specialty of apple seedlings and making root grafts to order, and does a very large business with Fruit-Grower readers.

Holsinger Bros., R. F. D. No. 2, Argentine, Kan.—This is a list of strawberry varieties, raspberry, blackberry, grapes, curants, etc The list is confined to the commecial standbys—those which have been found to be most profitable for the growers who raise fruit for profit.

T. S. Hubbard, Freedinia, N. Y.—This is a most excellent catalogue, listing a full line of varieties of grapes, also other small fruits. Located in the grape belt, this firm has always made a specialty of grape vines, and its catalogue is one of the best which comes to our table.

Wooll & Tillotson, Elsie, Mich.—Catalogue of strawberry plants particularly, but also listing other small fruits, and trees, shrubs and vines. Seed potatoes are also grown, and the catalogue lists several good sorts.

Woodlawn Nurseries, Rochester, N. Y.—This nursery makes a specialty of strawberry and other small fruit plants, grape vines, etc. In addition, the catalogue lists fruit trees, shrubs, etc. The catalogue is a good one, well illustrated.

H. J. Weber & Sons Nursery Co., Nursery Station, Mo.—This is the World's Fair edition of the catalogue of this firm, and lists a full line of nursery stock. This firm furnished great quantities of shrubbery for the World's Fair grounds, and in the catalogue ornamentals are given a prominent place. The list of peaches is complete, and the varieties are arranged in groups, the division being made in regard to order of ripening.

E. Maudlin, Bridgman, Mich.—Catalogue of small fruit plants, and in addition two varieties of potatoes are listed.

R. M. Kellogg Co., Three Rivers, Mich.—This catalogue is a good one every year, and this season is up to the standard of previous years. It contains descriptions of most of the varieties of strawberry plants, with illustrations of a great many of them. Perhaps no catalogue in the country has so many good illustrations of the different varieties of strawberries. The book is well printed, and is in every way desirable. Strawberry growers should send for it.

Columbia Ginseng Co., Hartford, Ky.—This company has sent us a little booklet on the cultivation of American Ginseng, which contains much information for those who are interested in the culture of this plant. The book is not a catalogue, but a cultural guide, and sells for 25 cents.

J. B. Armstrong & Sons, Shenandoah, Iowa.—This firm handles all kinds of seeds, but makes a specialty of seed corn. The catalogue pays particular attention to this class of seeds. In addition to this catalogue, the firm has a book entitled, "Improved Methods of Corn Growing," which contains 156 pages, and covers the entire field of corn culture. Besides giving the experience of Mr. Armstrong, who has been growing seed corn for many years, this book contains articles by many of the best agricultural teachers. It is a good book for corn-growers. In paper binding the book sells for 75 cents, and for $1.00 in cloth binding. The book is endorsed by some of the best corn growers in the country, and will prove profitable reading for anyone who grows this crop.

Henry Field, Shenandoah, Iowa.—The catalogue of Mr. Field is one of the best we have received this season. It is well written—and it is well printed, for the Fruit-Grower printed it. But, really, Mr. Field's catalogue is out of the ordinary. It has none of the exaggeration which is becoming so objectionable in seed catalogues, and the descriptions of vegetables, etc., are from Mr. Field's own point of view—they are not the stereotyped descriptions which one has seen for so many years in all the catalogues. Mr. Field's advertising started in the December issue of the Fruit-Grower, and a letter from him states that our readers are already responding liberally. Last year our readers were among the best customers Mr. Field had and this season they seem to be ordering again. This speaks well for his treatment of his customers.

Peter Henderson & Co., New York.—This is one of the really good seed catalogues—in fact, it is always one of the best. The 1905 catalogue is a large book, of 185 pages, and is well printed and well illustrated. The title page is especially attractive, and the whole book is up to the standard of previous years. The catalogue of this firm is not sent free, we believe, but

Weber & Sons Nursery Co.

HAVE TO OFFER FOR SPRING, 1905, A COMPLETE LINE OF

FRUIT TREES AND SMALL FRUIT PLANTS

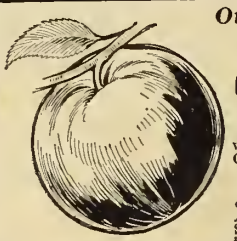
consisting of Apple 2 and 3 year, Peach 1 year, Pear 1 and 2 year, Cherry 1 and 2 year, Plum 1 and 2 year, Quince, Apricot, Mulberry, Nuts (especially the Japan Walnuts), Gooseberry, Currant, Grape, Blackberry, Raspberry, Strawberry, Asparagus and Rhubarb plants. We are also large growers of Ornamental Stock, such as Maple, Ash, Birch, Cypress, Catalpa, Elm, Ginkgo, Linden, Magnolia, Poplar, Sweet Gum, Red Bud, Sycamore, Tulip and many other Ornamental Shade Trees, as well as all the leading Ornamental Shrubs in several hundred varieties, Climbing Vines, Hedge Plants, Roses, Evergreens and Hardy Perennial Plants. Address,

H. J. Weber & Sons Nursery Co., Nursery, Mo.

Send for our Descriptive Catalogue and price list, free to all applicants.

"Grand Prize" Awarded Our Display of Ornamental Trees, Shrubs, Roses, Evergreens, etc., at the St. Louis World's Fair.

Out From the Northwest it has Come at Last—
THE GUARANTEED APPLE!



"The Minnetonka Apple"

which for the first time in the history of Horticulture bears a Nursery Guarantee is propagated, owned and controlled by

L. L. MAY & CO., whose MAYFIELD NURSERIES distinguished for exclusive productions, are the most Northern in America. This latest triumph of apple culture, the pride of the State of Minnesota, is named after one of her beautiful silvery lakes, "Minnetonka." The fruit is very large; flesh-tender, crisp, sub-acid; the ideal cooking and choicest dessert apple. "The Minnetonka" thrives luxuriantly and yields prolifically in the most rigorous climate where all others fail. Season late, keeping two months longer than the well-known "Wealthy." Hardy as an Oak.

We Guarantee every tree of "The Minnetonka," to produce a bushel of fruit, and will replace, free of charge, every tree that dies before this result is obtained.

PRICES—4 to 6 foot trees, 75 cents each; 3 for $2; 6 for $3; 12 for $6; by express or freight. Mail order size—one year old, 40 cents each; 3 for $1; for $1.75; 12 for $3 postpaid.

Every owner of a home should have one of more of "The Minnetonka," pride of the Northwest, Order today.

Free Catalogue of Seeds, Trees, Plants, etc.

L. L. MAY & CO., - St. Paul, Minnesota.

Mayfield Nurseries—Most Northern in America.

TREES THAT GROW

We offer a large stock of all kinds of *Trees, Grape Vines and Shrubbery.* Nebraska-grown trees have always good roots and plenty of them and are very hardy. We have raised and shipped trees for 18 years and have pleased customers in every State. Our prices are as low as first-class stock can be grown for. Send for our illustrated descriptive catalog—a complete guide for buyers—free.

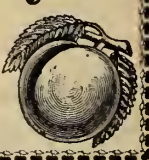
GERMAN NURSERIES, (Carl Sonderegger, Prop.) Box 30, Beatrice, Neb.

HARRISON APPLE TREES

are now shipped to all parts of the country. Their popularity is growing year by year. It's because we produce superb stock, rooted to make rapid growth from the start; strong, vigorous bodies, bred for strong fruiting. All seasons' varieties, all ages of trees. We pack all fruits so we can guarantee delivery in A No. 1 condition everywhere.

The Peach our Specialty.

Due to a favored climate and natural peach tree soil. No region in the world can excel our peach tree stock. We urge the **Ray variety. Tested 16 years. A record bearer and very choice.** All leading varieties. Quality considered, our tree prices are nowhere duplicated. Grapes, strawberries, asparagus, etc. Send for new catalogue just issued. A great book for the fruit growers.



Harrison's Nurseries, Box 32, Berlin, Md.

Nursery Stock For Sale

We Have a Limited Surplus of Extra No. 1

APPLE STOCK

One and two years old, all of the commercial varieties, grown for the big **Frisco Orchard Co.**, under the direction of their own horticulturist. Whole root, and scions cut from young, healthy, bearing trees, and **guaranteed true to name and free from disease.** Prices low. Delivery any time. Lists supplied. Order early. Write,

W. C. CARROLL, Kansas City, Mo., or M. J. WRAGG, Des Moines, Ia.

APPLE TREES $5.00 TO $10.00 PER 100

Currant Bushes and Grape Vines, also Poplar Trees, for sale at bargain prices, boxed free.

These trees, plants and vines must be sold at bargain prices, as we are overstocked with them. We have a surplus of both Carolina and Lombardy Poplars. Help us to sell 1,000,000 first-class trees, shrubs and vines as described and priced in our large new catalogue, which is mailed free when requested by postal card. Established 25 years $100,000.00 capital. Trees true to name, boxed free. Let us price your list before buying elsewhere. Mention where you saw this advertisement and we will mail you a copy of Green's Fruit Magazine.

Address GREEN'S NURSERY CO., Rochester, N. Y.

ELECTRIC WHEELS

FOR FARM WAGONS

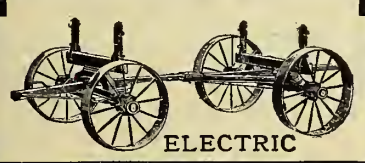
There are lots of things we don't know, but there's one thing we know **thoroughly,** and that's how to make a steel wagon wheel that won't cost much, but will last a lifetime. No living man can make a better. Electric steel wheels are made with infinite pains by our patented process. The rims and oval spokes are of the best wrought steel; the hubs of superior iron, 100% stronger than ordinary iron; the

SPOKES ARE UNITED WITH THE HUB

and absolutely can't work loose, a statement we back by the most liberal and binding guaranty ever given a wheel. By every test they are the best. We sell more of them to satisfied customers than any two other factories. We can make your old wagon new for a few dollars, and you'll have a better wagon, handier and more serviceable than you had at the start. Don't be persuaded by an agent into buying an inferior wheel; read our book and use your judgment. Catalogue free.

ELECTRIC WHEEL CO.,
Box 217 Quincy, Ill.

We'll sell you a set of wheels or a Handy Wagon complete. Let us hear from you.



DON'T DELAY
GET READY EARLY

for the next season's crop. You can make up packages before the crop is ready cheaper than you can after spring work commences. This **Wire Stapling Machine** is what you need to make your packages. The machine is guaranteed to be thoroughly reliable and equal to any machine on the market. Very simple in construction, made of best materials. All screws, studs, etc., are made of steel, extra large and strong, castings of best grey iron. Wearing parts best grade tool steel. All parts can be duplicated. We guarantee this machine against faulty material and workmanship and will replace any part that should prove defective up to one year from date of sale.

This is the **Best Stapling** machine on the market. The best is what you want because you want a machine that is always ready for business and **not** out of order.

Price of this best stapling machine, $21.75, F. O. B. factory St. Joseph. Mich. Write for all information to

FARMERS SUPPLY COMPANY,
Dept. D. St. Joseph, Mich.

Strawberry Plants

Only a price list issued this season. All wanting plants should send for it.

D. McNALLIE, Sarcoxie, Mo.

Strawberry Plants

Auto, Bubach, Climax, Uncle Jim, and all the best varieties. Catalogue free. CALEB BOGGS & SON. Cheswold, Del.

Strawberry Plants

at wholesale prices, from famous fruit belt of Michigan. Catalogus Free.
R. E. ALLEN, Paw Paw, Michigan.

WANTED—Position as foreman on fruit farm, by young single man, with good habits and very best of reference from last employer. Address, "Foreman," care The Fruit-Grower, St. Joseph, Mo.

WANTED—One special county salesman in each county in United States. Farmers with rigs preferred. No capital required. Write today, giving reference and naming county wanted. FRANK RABELL & CO., Manufacturers, Saegerstown, Pa.

the price is rebated to those who order seeds. The book is too expensive and too valuable to be distributed indiscriminately, and therefore the charge for postage is made. But the catalogue is worth having, even if one pays for it, for it is one of the very best American seed catalogues. A number of new things are offered for 1905, including Henderson's new Melting Marrow Pea, Tenderloin Tomato, etc. The firm is still pushing the special varieties of hollyhocks, which bloom the first year from seed.

Ford Seed Co., Ravenna, Ohio.—A catalogue of full line of seeds, with small fruit plants added. Fruit trees are also listed and a specialty is made of roses. See another column for list of novelties.

Ross Bros., Wichita, Kans.—This firm has a good catalogue, which is sent free for the asking. A specialty is made of alfalfa seed, and in its advertisement in The Fruit-Grower the firm calls special attention to its stock of pure, clean alfalfa seed. Located in a section where alfalfa succeeds finely, Ross Bros. are enabled to get good stock, and a good reputation has been established for this specialty of theirs.

D. Landreth Seed Co., Bristol, Pa.—General seed catalogue. The firm also issues a nursery catalogue, and one for bulbs, etc. The seed catalogue is very neat and is well gotten up.

M. M. Johnson Co., Clay Center, Neb.—This is an incubator catalogue, and a good one, too. It is written in the characteristic style of Mr. Johnson, and besides telling about the Old Trusty Incubators and brooders, it contains much other valuable information for those who are engaged in raising poultry, such as plans for poultry houses, etc. The book is a large one and contains a great many illustrations, showing those persons who have successfully used these incubators. If any criticism of the book were to be offered it would be that the book is not so well printed as it should be. Better quality of ink and better presswork would have made a great improvement. This is from the standpoint of the printer, of course, for from Mr. Johnson's standpoint the book is a good one.

Sure Hatch Incubator Co., Clay Center, Neb.—This catalogue describes the Sure Hatch machines, and also lists other poultry supplies, such as bone cutters, etc. Realizing that the hatching of chickens is not the entire business, the manufacturers also have prepared a chick feed and quote prices on it. Some good advice on poultry feeding is included and the catalogue is a good one, except that it might also have received better treatment at the hands of the printer, for many of the cuts do not print up as they should have done.

Prairie State Incubator Co., Homer City, Pa.—This is an excellent catalogue. The different styles of machines made by this company are described, and a feature of the catalogue are the illustrations, showing the yards and houses of different poultry raisers throughout the country who use Prairie State machines. The catalogue is excellently printed and the illustrations are a feature.

Anna L. Pinkerton Co., Clay Center, Neb.—The catalogue of this firm is ready for mailing, and Fruit-Grower readers who raise poultry will be interested in the same. The book tells about the chick food for which the Pinkerton Company is famous. and also quotes prices on S. C. White Leghorn and White Wyandotte fowls. In addition to this the Queen Incubators and Brooders are described. and the book altogether is one which is very helpful to poultry raisers. Send for a copy, mentioning The Fruit-Grower when you do so.

Truss & Cable Fence Co., Cleveland, Ohio.—This firm, which has been advertising in The Fruit-Grower for some time, has a catalogue which will be helpful to everyone interested in fence building. The company makes a wire board fencing which makes a neat, substantial fence, and at comparatively low cost, when the character of the fence is considered. All this is explained in the catalogue of the firm, which will be sent free to those who ask for same, mentioning The Fruit-Grower. Besides fencing, this firm handles a number of other lines of goods which are needed by farmers and builders everywhere.

Benton County, Arkansas.

Benton county is the northwest corner county in the state of Arkansas. The soil is sometimes flat and level, and sometimes hilly and broken. There are abundant springs, and the water is good all over the county. There is a subsoil of red clay in this locality, and this is what is needed for raising apples, as the clay enables the trees to stand the drought in dry weather. The flat land has little or no rock on it and is easy to cultivate. In the northeastern part of Benton county is a level scope of country known as Pea Ridge. A famous battle of the civil war was fought at this place, as attested by two monuments erected there.

Now this level scope of land is set out in fruit trees, and hundreds and thousands of acres are bearing apples to supply the great demand. Some of these trees are young and have not yet borne any fruit, but they are thrifty and will soon be in bearing. Young stock is considered by farmers as "good property," and so it is, but young fruit trees suitable for the soil and climate are just as good or better when the owner is in a fruit country.

Apples will not grow everywhere, as sometimes only thirty miles away the "hard pan" is too near the top of the ground, or there may be something lacking in the soil. Benton county is "the banner county of the state" for raising apples, no other county in this state, or in any adjoining state, raises the apples that this county does, and in no part of the United States, or in the world, have apple trees been set out more extensively in the past two years than in the "banner county," and this is especially true of the country round about Pea Ridge.

This is the natural home of the apple. Here the apple is raised in its beauty and perfection, as the writer recently saw one that weighed over two pounds. The great industry of this county is raising apples, and the last full crop was sold for over a million dollars. Evaporators and other things needed in a fruit country are found here in abundance, and the fruit industry gives employment at good wages to men, women and children.

One of the best equipped fruit evaporators in the state of Arkansas is owned by H. W. Gipple of Bentonville. The building is made of brick and is two stories high. It has six apple parers, run by a gasoline engine of five horsepower. The paring, transfrering the fruit to the main elevator, and elevating it to the bleachers and then to the slicers and slicing, is all done by machinery. The plant is built very conveniently, and has three drying rooms, each of which is twenty feet square, with a twelve by twenty fruit room in the center. The capacity of the evaporator is 500 bushels a day.

W. H. GIBBS,
Special Fruit-Grower Correspondent.

Fruit Growing in South Dakota.

I wish that I had known the Fruit-Grower and its discussions on market varieties before I planted my orchard of about 1,200 trees. All my knowledge consisted of what I read in the catalogues, and now I see that in too many instances I shot far from the mark. Since I find that I can raise hardy peaches and Jap plums, 12 trees gave me 15 bushels, I am not afraid to plant the best market sorts of the middle west, and I get them too.

I had a fair crop of apples, plums, cherries and berries also the most delicious pears which develop as fine in our soil.

Seven years ago this was prairie with sage brush and jack rabbits and now with irrigation in sig years blooming fields.

I inclose 20 cents for Nos. of May and June, if you got them on hand, for when we had visitors here for a few weeks, they didn't know the value of the paper, and so they are missing, but if possible I would like to have them so I might bind them the same as '03 volume.

Needless to say that I like your up-to-date paper. Very few are around here that can plant trees and do gardening.

F. NOERENBERG,
Cascade Springs, S. D.

The recent blizzard gave our strawberry fields a good mulch of snow. Even raspberries profited by the snow, for drifts formed ten to fifteen feet high in places, protecting the canes in good shape.—O. F. Griffith, Cedar Falls, Iowa.

Reliable Commission Merchants

The firms whose addresses appear below are all members of the National League of Commission Merchants, which fact insures their reliability. They are in the business to stay, and will appreciate and satisfactorily care for business of Fruit-Grower readers.

COYNE BROS.,
160 S. Water Street, Chicago, Ill.
Fruits, Butter, Eggs, Poultry.

GEO. MIDDENDORF CO., Inc.
Chicago, Ill.
Apples, Fruits, Vegetables, Eggs, Butter and Poultry.

SEESSEL & ASHNER,
Memphis, Tenn.
Produce and Fruits.

ARLINGTON NURSERIES

HAVE IN STOCK
500,000 APPLE TREES
100,000 CHERRY TREES
80,000 PLUM TREES
100,000 GRAPE VINES
600,000 STRAWBERRY PLANTS

A large and complete line of small fruits, Ornamentals, Roses, Evergreens, Shade trees, Weeping trees, Forest tree seedlings, etc.
Our fruits won highest awards at Omaha, Paris, Buffalo and St. Louis.
We make a specialty of hardy varieties which are adapted to the West and Northwest. Satisfaction guaranteed. Prompt access to leading railroads. Catalogue mailed upon application. Your patronage solicited.

MARSHALL BROTHERS
ARLINGTON, NEBRASKA.

To the Wholesale Trade
For Season 1904-5, we offer
Apple Seedlings and Grafts
We make a specialty of this branch of the business and are exceptionally well equipped for handling it.
Write for Winter List issued Dec. 1st.
Mount Arbor Nurseries
E. S. WELCH, Prop.
Growers and Propagators of a complete line of General Nursery Stock.
SHENANDOAH, IOWA

The Sanitary Washing Machine

Made of galvanized steel. Has overcome all objectionable features of a wooden washer. Laces, Blankets and Clothing washed without the slightest injury. Sent on trial. Holds more clothing and uses less water than any other washer. Agents wanted and exclusive territory given. Write for catalogue and particulars.
The Sanitary Laundry Mch. Co., 53 6th St., Tell City, Ind.

JUST WRITE
Upon request we send complete agents' outfit without cost. We trust you with goods to sell. Sell only 19 packages at 10c. When they are sold send us $1.90 and we make you a present of a
STYLEPHONE TALKING MACHINE.
Record—Sousa's "Stars & Stripes Forever," included. Watches, dolls, skates or other presents if desired.
CROSBY BLUEING CO., 93 Crosby St., New York City, Dept. 8.

"Not a Worm Remained"
Mr. H. F. Jackson, Clinton Co., Ohio, writes: "'DISPARENE' gave perfect satisfaction. The canker worms were quite thick in my orchard, but in three days after using your 'DISPARENE' there was not a worm left." Book Free.
BOWKER INSECTICIDE CO., Boston, Mass.; MO. VALLEY SEED CO., St. Joseph, Mo.

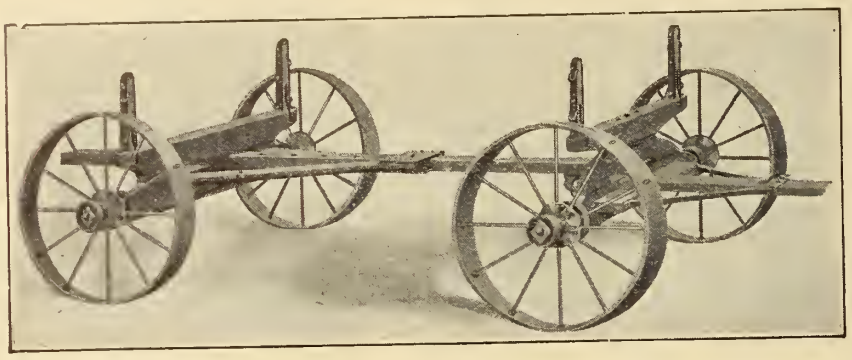
BUY LACE CURTAINS Direct from Makers and Large Catalogue FREE. **Save 1/3**
N. Y. CURTAIN MFG. CO., 396 Broadway, New York

Farm Canning Machinery
Complete, $10, $25, $50, $100, $125 and upwards. Make money by canning for market. Book free. Modern Canner Co., Bridgeport, Ala.

LOW WAGONS FOR FRUIT-GROWERS .

The low, handy wagon seems to be growing in popularity in all directions. We speak particularly for fruit-growers when we say it is a money and labor saver. Take the all important matter of spraying. A man with a large contract on his hands will sometimes put out as much as 1,200 to 1,500 gallons of liquid in a single day. Frequently the power to operate the sprayer comes from the wheel. A wheeled vehicle must, therefore, be used. Think of the saving in the lifting of this liquid upon a low wagon, such as the Electric Handy Wagon, manufactured by the Electric Wheel Co., Quincy, Ill., as compared with the high wheel, old style wagons. The same may be said of manure hauling and that is a continuing occupation with fruit-growers. There is also every reason it is superior to high wagons in fruit gathering and, in fact, all sorts of work requiring driving through the orchard or nursery. It not only saves many a high lift, but the broad tires do not cut in and rut the land. This, at the same time, means lighter draft.

The Electric Wheel Co. have done much to popularize this style of wagon. Their Electric Handy is the leading type. They should be encouraged in the work. Their metal wheels with staggered spokes are practically one solid piece. Wheels and wagon are alike equal to all burdens that will be put upon a wagon—guaranteed good for 4,000 pounds, under all conditions. This company also makes a specialty of supplying their Electric Metal Wheels separately in sizes to fit any axle, making it an easy matter to convert an old running gear, which is frequently good when the wheels are worn out, into the modern type of handy wagon. We direct the attention of our readers to the advertisementt of this company elsewhere. Catalouge and full particulars may be had by writing the company direct.



GOOD SEED CORN.

Last month a representative of The Fruit-Grower saw some very fine seed corn in the exhibit car of the Missouri Pacific industrial department. This was samples of the seed corn which is grown and sold by the Tucker Plant Breeding Farm, Blodgett, Mo., whose advertisement appears elsewhere in this issue. This farm is in charge of Mr. George M. Tucker, secretary of the Missouri Corn Breeders' Association, and it naturally follows that the most approved methods of seed growing are practical. The corn which we saw was very fine; ears were well formed and well filled, the grains plump and uniform. This farm makes a specialty of growing those varieties of corn which succeed in Missouri and states south, and will be pleased to furnish prices to all Fruit-Grower readers. Address Tucker Plant Breeding Farm, Blodgett, Scott County, Mo., mentioning The Fruit-Grower when you write.

DIBLER AND TRANSPLANTER.

John J. Olinger, 200 West Fourty-fourth street, New York, advertises in this issue a dibler and transplanter which will interest Fruit-Grower readers. This dibler is made of best sheet steel, and consists of two jaws pivoted together and forming, when closed, a perfect dibler, tapering to a point. The handles are so formed that a spring closes them, but a pressure will open them, so that the dibler can be used as transplanter, with the small plant inserted inside. The implement is inexpensive and is most highly recommended by those who have used it. It can be used with one hand, in which it differs from many of those now on the market. The illustration used in the advertisement gives one a good idea of the nature of the dibler, and the manufacturer will send further information to those who ask for same, mentioning The Fruit-Grower.

WICHITA NURSERY.

In this issue appears the advertisement of the Wichita nursery, Wichita, Kan., of which W. F. Schell is proprietor. Mr. Schell is known to many of the readers of The Fruit-Grower, having been superintendent of the Kansas fruit exhibit at the World's Fair. Not only this, but at the late meeting of the Kansas State Horticultural Society he was elected first vice president for the ensuing two years. Mr. Schell writes us that the stock of his nursery is very fine this season, and that he is prepared to serve his old customers and new ones to the best advantage. Fruit-growing is becoming a very important business in that part of the country, for it has been demonstrated that the business can be made profitable. The Wichita nursery grows a full line of stock, with particular attention to the varieties which succeed best in the southwestern country. We suggest that Fruit-Grower readers in that part of the country send for the catalogue of this firm.

A BOOK ON FRUIT GROWING

along the Frisco System by Prof. J. T. Stinson, who was superintendent of pomology, World's Fair. This book which contains forty pages of reading matter of intense interest and fifty beautiful full page illustrations, is published by the Frisco System and will be mailed you if you will send request with ten cents in stamps to Dept. E, Room 1021, Frisco Building., St. Louis, Mo. A. HILTON, Gen. Pass. Agt.

Western Seed Co., Shenandoah, Iowa.—The Catalogue of this firm has been received, and it is a good one in every way. This firm, as explained in its advertisement in another column, makes a specialty of seed corn, although all kinds of seeds are handled extensively. But in the seed corn the firm is especially prominent. The manager of the company has been working for the improvement of seed corn for many years, and has been one of the leaders in this work. He has had years of experience in selecting seed corn, and as a result has built up a great business in this line. Samples of the seed corn will be sent to those who wish to examine same, and all shipments are guaranteed to be up to grade.

Marshall Bros., Arlington, Neb.—This firm has an advertisement in this issue, and will be pleased to hear from Fruit-Grower readers. The members of the firm are practical fruit-growers and experienced nurserymen, and stand high among the members of their profession. Stock is in most excellent condition, and all shipments are warrantoeed to be up to grade and satisfactory in every other way, else they need not be received. Freight paid on shipments to points in Iowa, Kansas, Nebraska and the Dakotas. The firm is in every way reliable, and Fruit-Grower readers will do well to look up the advertisement and write to Arlington Nurseries, Marshall Bros., proprietors, Arlington, Neb.

George A. Sweet Nursery Co., Dansville, N. Y.—In this issue of The Fruit-Grower this firm begins its advertising for season of 1905. This firm has many customers among the readers of this paper, and they will be glad to know that the stock which will be offered for the season of 1905 is first-class in every way. The firm is not only reliable in every respect, but has an excellent reputation for furnishing good stock, true to name. Dansville is one of the best nursery points in the United States and trees grown there have a wide reputation. Look up this advertisement and write to Geo. A. Sweet Company in regard to your wants.

The Perfection Currant, now being introduced by C. M. Hooker and Sons, Rochester, N. Y., received the gold medal at the World's Fair, St. Louis. This makes the third medal this currant has received, as it was awarded the $50 gold Barry medal of the Western New York Horticultural Society in 1901 and the Pan-American medal the same year. It has never failed to take the highest honors wherever exhibited—See Advertisement.

Zimmerman Seed Co., Topeka, Kan.—Our 1905 Catalogue contains every known variety of merit and it would indeed be difficult to select the choicest from the many. A perusal of its pages would be necessary to do us justice. It is, we believe, the most up-to-date seed book issued in the entire west, and is entirely free from the "frills" and sensational features so characteristic of most seed catalogues.

The attention of our readers is called to the advertisement of the Nishna Valley Seed Co., of Hamburg, Ia., just appearing in this paper. This firm is composed of wideawake seedmen who have large experience in the seed and seed corn business and a most enviable record for fair dealing with their customers. This reputation they will strive to maintain. They will take it as a special favor if any or all of our readers will write them for full information free catalogue, etc. Address Nishna Valley Seed Co., Hamburg, Ia.

Our readers will be pleased to know that J. B. Armstrong and Sons, the original seed corn men of Southwestern Iowa, are ready with a fine supply of the best seed corn that care and experience can grow. Their first advertisement appears in this issue. The farmers who buy seed corn of J. B. Armstrong and Sons, practically insures his crop. Send for their new catalogue and samples of seed corn. Address J. B. Armstrong and Sons, Shenandoah, Ia.

W. W. Vansant and Sons, the reliable seed corn men of Farragut, Ia., are in this paper with their annual announcement of seed corn. Few men have given more intelligent attention and study to the breeding and development of perfect seed corn than W. W. Vansant and as a result he can offer farmers the purest and best seed corn on the market. Their seed catalogus is full of information. It's free for the asking.

All our readers who use seeds are familiar with Ratekin's Seed House, Shenandoah, Iowa, and this year those who have received their new 1905 catalog have certainly been delighted with reading over what it contains, and many new bargains of exceptional value and the elegant illustrations showing perfectly the development of certain seeds and plants. The book is made up of 72 pages and is easily the best thing in the way of a catalog that this well known seed house has ever gotten out. Write today, after reading the advertisement on page ——— and tell the Ratekin Seed House that you have been reading about their new catalog in this paper and would like a copy. It will interest every reader of this paper.

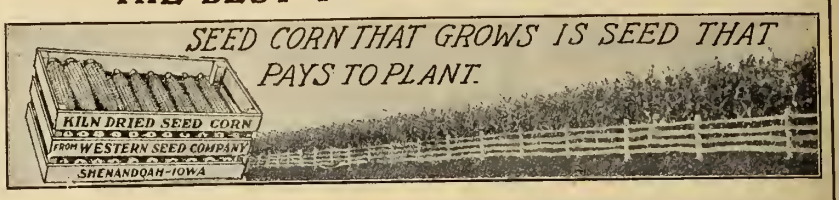
Once more Lott "The Land Man," of Kansas City, Mo., seems to have hit on a snap in the way of a bearing orchard; 8,000 trees planted on 124 acres of land for $6,000 sounds all right. Some of the apples and peaches from this place won prizes at the St. Louis Fair. Better write him for fruit and general farm bargains. He has a big list to mail free. His ad is on page 23.

Storing Grape Cuttings.

As this is the season of year for making grape cuttings for planting out next spring, a report of some experiments made by German experimenters, in the storing of cuttings, will be interesting. In this experiment four bundles of grape cuttings were used. One bundle was placed, immediately after being used, in dust, another in sand, a third half, in sand, and a fourth was left standing free. All were kept in a cellar. The following spring they were planted out in a nursery. The strongest growth was made by the cuttings preserved in the dust, followed by those wholly in the sand, and then by those half in sand. Those left standing in the open in the cellar gave the poorest results of all, only about a fifth as much growth being obtained as where the cuttings were preserved in dust.

DIAMOND JOE'S SEEDS

THE BEST THAT CAN BE GROWN



NONE LIKE IT. GROWN ONLY BY WESTERN SEED CO., SHENANDOAH, IA.

Try our Diamond Joe's Seed Corn and other Seeds and see the Difference between it and **Elevator** and **Crib Corn** sent out for seed. All such cheap commercial seed has nothing behind it except the dealer and speculator's word. It's bought only where it can be obtained the cheapest. They have neither pity or regard for your loss in crop. It's profit they are after. All such stuff is not only dear as a gift but ruinous to the man who plants it. **Don't be Fooled.** Be cautious of it or you will be sorry. All our seeds are fully guaranteed to grow or your money back. Write for our large beautiful illustrated catalog today. It tells you all about it. **It's Free** for the asking. It gives prices and descriptions of all the Farm, Garden and Flower Seeds that are worth planting. Every Packet, Package, Bag, Box or Barrel sold under Our Seal. Send today then you can order and receive your seeds in good time for planting. **Iowa Grown Seeds are the Best in the World. Address, WESTERN SEED COMPANY, SHENANDOAH, IOWA.**

SMALL FRUIT PLANTS

Gold Medal on Small Fruits
Bronze Medal on Raspberries

at Louisiana Purchase Exposition in St. Louis

Full Line of RASPBERRY, STRAWBERRY BLACKBERRY, GOOSEBERRY CURRANT, ASPARAGUS

HOLSINGER BROS.

Write for Descriptive Catalog. R. D. No. 2, ARGENTINE, KANSAS

J. A. BAUER

The Arkansas Strawberry Plant Man

THE NEW QUEEN OF

Almo *Strawberries*

A full line of Apples, Peaches, Pears, Cherries and other Nursery Stock.

Write for my New Catalogue

J. A. BAUER, Judsonia, Ark.
Rural Free Delivery No. 1

The Fruit-Grower for 1903 and 1904

We have on hand a few complete volumes of The Fruit-Grower for 1904 and thirty complete volumes for 1903. While they last they will be sold unbound at regular price.

Fifty Cents a Volume

Either of these volumes will be neatly and substantially bound in cloth and mailed postpaid for two dollars a volume. Write at once if you want them.

THE FRUIT-GROWER CO., ST. JOSEPH, MO.

Are You Interested in Apples?

THE APPLE SPECIALIST, QUINCY, ILL.

Is authority on apples. It treats of how to select, plant, cultivate, prune, fertilize and spray trees; extinguish orchard pests; pick, pack and market apples, including market and crop reports. Also furnishes interesting information about cold storage, evaporating and canning, as well as the making of cider, vinegar, etc. Nothing overlooked pertaining to the apple industry. Every nurseryman, grower or dealer of apples in any way, shape or form should be a subscriber to

The Apple Specialist, Quincy, Illinois SUBSCRIPTION 50c PER YEAR OR THREE YEARS FOR $1.00.

Trees That Must Be Sold

We have 50,000 two and three-year-old apple trees on leased land, leading varieties, all in first-class condition, and grades, that will be excelled by none. We grow them; scions taken from bearing trees, are mostly on whole root grafts. You will find none with better roots. Will quote prices to planters and dealers on application, as we cannot give prices through this paper. We also have a general assortment of Nursery Stock. Kindly submit us a list of your wants, stating number and size of trees wanted. Order early, as varieties may be broken later. Catslogue Free.

BROCK NURSERY CO.
Brock, Nemaha County, Neb.
H. A. BROWN & SON, Proprietors.

Small Fruit

Are you interested in small fruit, either for home use, commercially, or are you selling plants? If so you cannot afford to be without our 1905 catalogue and wholesale price list. Dunlap, Beaver, Oom Paul, and 40 varieties standard strawberries; Merceresu, Snider and other blackberries; Cardinal, Haymaker, Cumberland and all the best raspberries. CATALOGUE FREE. Tells how we treated our berry beds and picked herries seven months.

G. S. CHRISTY, JOHNSON, NEB.

Bush Fruits

Mersereau, Kenoyer and Early King Blackberries, Kansas, Cumberland and Cardinal Raspberries, Lucretia Dewherry, THE LOGANBERRY; well matured plants, true to name. Write for list. **W. W. CLARK, R. F. D No. 1, ATCHISON, KAN**

Your attention is ARRESTED to the fact that

OUR 1905 CATALOGUE IS NOW READY

for mailing. This book will give you information from A to Z regarding poultry, feeding little chicks successfully, and describing the newest and best incubators and brooders. Address **Anna L. Pinkerton Co., Box 5, Hastings, Neb.**

"KENTUCKY BEAUTY"

BEST FALL APPLE.

Send for description and colored plate. A few hundred trees left of the CELEBRATED eedling Peach, **"Jo . Celebrated** Seedling Peach, **"Johanna."** Salesmen wanted, at

SUNNY SLOPE NURSERY,
Hannibal, Mo. WILL S. HALL, Prop.

GINSENG

The Most Profitable Crop

All about how to grow it, FREE. Begin at once. We have the best nursery stock that skill can produce. Write at once.

Columbia Ginseng Co., Hartford, Ky.

Before You Buy

Apple trees you should get our prices. We have over 50,000 fine two-year-old trees that we are going to sell at wholesale prices. Stock guaranteed to satisfy you. It will be money in your pocket to write us.

FURROW BROS., GUTHRIE, OKLA.

DO YOU WANT A BARGAIN IN

Miller Red Raspberry Plants

or Michel's Early, Crescent, Lady Thompson, Clyde, Klondyke, Brandywine, Bismarck and Gandy Strawberry Plants? If so, write for special prices.

W. H. BROWNING,
Washington County, Springdale, Ark.

Fine Delaware-Grown Peach and Plum Trees

of the best new and old varieties in assortment, for spring 1905 planting, at very low prices.

THE DELAWARE NURSERIES,
D. S. COLLINS, Manager. **Milford, Del.**

Clear $5.00 to $10.00 a Day

Fitting Glasses, a profession you should learn; the demand is unlimited; write us today. Address *The Leader Optical College, Topeka, Kans.*

U. S. STANDARD, CAUSTIC POTASH

WHALE-OIL SOAP

A positive destroyer of San Jose Scale. The Owen SPRAYING SPAR, for power sprayers. Other orchard necessities. Write for catalogue and prices.

W. H. OWEN, PORT CLINTON, OHIO.

60 Varieties Strawberry Plants

The best for the least money. Send postal card today for my 1905 catalogue of Small Fruit Plants.

H. W. HENRY, La Porte, Ind.

THE LITTLE WEATHER COCK.

This is the very appropriate name that Mr. Geo. H. Stahl has given to an entertaining, interesting and really valuable little novelty which he will send free to any of our subscribers. It is a very fetching and saucy looking little rooster so dressed that the color of its clothes surely foretells the weather—dry, wet or changing. It

is really a scientific weather forecasting device. Mr. Stahl will send one free to any of our subscribers who will write to him for it, enclosing 6 cents for postage and packing and mentioning this paper. He will also send one of his new, large, illustrated Catalogues of the famous Excelsior Incubators and the Wooden Hens, which he has manufactured for the past twenty years. His advertisement will he found elsewhere in this paper.

We recommend that our readers send at once. Address Geo. H. Stahl, Quincy, Ill., and do not forget to mention The Western Fruit-Grower.

BUY POULTRY FOODS.

One of the best places to buy poultry supplies and particularly poultry foods, is Darling & Company, Union Stock Yards, Chicago, Ill. What poultry raisers want to make sure of is, that the ready prepared foods they buy really do contain the valuable elements claimed for them. The high quality of Darling & Company's Pure Poultry Foods, cannot be questioned. In the first place, these people have the facilities for geting raw materials that few poultry food makers enjoy. Their location, at the greatest packing center in the world, gives them this. In the second place, this Company has a standard that must be reached by everything it manufactures.

Their foods for egg production, for chick feed, for growth and development are not only the highest quality of their kind, but they are uniform. For example, take their beef products, such as Beef Scraps, Beef Meal and Concentrated Meal. The highest authorities we have, the government experiment stations, highly endorse the use of this class of goods, but warn poultry raisers against stale products, etc. This is where Darling & Company's scrupulous care has served them a good turn. Their poultry foods not only run exceedingly high in protein, hut have little or no fat. Protein is the essential element of any poultry food. An excess of fat is not desirable. In addition, they fulfill the experiment station's other requirements, namely, the foods are fresh, sweet and free from taint.

Darling & Company's Pnre Poultry Foods give results. The majority of the large and successful poultry raisers in this country and elsewhere feed Darling's products exclusively. Do you? If not, a trial would convince you of their merits.

Darling's litle pamphlet, entitled, "Fill the Egg Basket," should be in the hands of every poultry raiser. You do not have to be a patron of the house to secure it. They also publish a large, finely illustrated Poultry and Stock Supply Catalogue. Both will be mailed free upon request. See their advertisement elsewhere.

INCUBATOR CLEANLINESS NECESSARY.

Many experienced operators of incubators have often deplored the fact that many Incubators have so little room for the little chicks underneath the egg tray. Then again a few machines have considerable room in this space, but the chick tray is so constructed that it is extremely unpleasant and difficult to thoroughly clean and disinfect the inside after the hatch is over.

To overcome these objections was a problem that set the Gem Incubator people to figuring. A great many incubator nsers unite in deciding that the Gem Incubator fulfills the necessary conditions.

It has a commodious and well ventilated chick tray underneath the egg tray. At the end of the hatch all the newly-hatched "puff balls" are resting comfortably in this tray. After the hatch is over, the chick tray, egg trays and everything inside the cabnet can be removed, leaving a large, open, clear space to work in. Every experienced operator knows that an incubator must be free from filth and foul odors if high per cent hatches are to be expected.

This removable chick tray is one of the exclusive features of the Gem Incubator and commends itself to every thinking poultry raiser.

There are other points of superiority about the Gem that would be interesting to mention, which are taken up in detail in the handsome new catalogue. This catalogue is free. Write to the Gem Incubator Company, Box 50, Dayton, Ohio.

THE ARTISTIC TOUCH.

There is nothing more artistic in the home, nothing more useful to the eye, than house plants, such as ferns, palms, etc. They are graceful in outline and their beautiful color harmonizes perfectly with every surrounding hue, lending more cheer at slight cost, than any other ornament or bit of furnishing. Love of Nature, expressed by the presence of healthy growing plants, is indicative of strength of character in the home maker.

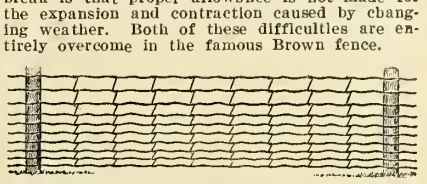
Some have been discouraged in trying to grow plants, however, hut this is largely due to not getting good ones in the first place, as there is nothing more simple, when once a good plant has become accustomed to its environment. It is essential, however, that the plant should be healthy, and for this reason it should he purchased from reliable, experienced growers. The remarkable success of the Storrs & Harrison Co., Painesville, Ohio, is well known to experienced cultivators of ferns, palms, and other house plants.

We take pleasure in directing the attention of our readers to a little book before us entitled, "Proper Care and Feeding of Chickens, Ducks, Geese and Turkeys." It is published by the Des Moines Incubator Company, Des Moines, Iowa, and is sold for 10 cents a copy. No reader will begrudge the small price to get the accurate, specific information which this little book contains. It is in neat, compact form, and gives directions and pointers in a way that they will be applied every day by the poultry raiser. The different classes of fowls are treated separately. Particular attention is given to right starting, the foods that are adapted and those not adapted to the new-born fledgelings. It is an especially valuable book for beginners. Old poultry raisers will get many valuable suggestions from it. A copy may be procured by mailing the 10 cents direct to the publishers.

THE FENCE THAT LASTS.

Why do wire fences give way, break and sag? Go out and examine carefully the average wire fence and you will have no trouble in answering this question. In all ready-made woven fences the stays, or uprights, are made of smaller wire than the horizontals, consequently they give way sooner and ruin the whole fence.

Another reason that the wire fences sag and break is that proper allowance is not made for the expansion and contraction caused by changing weather. Both of these difficulties are entirely overcome in the famous Brown fence.



The uprights are of the same size as the horizontal wires and the laterals are made from high carbon, hard spring coiled wire, which not only allows for all contraction and expansion due to change of temperature, but also relieves the posts of much of the dead pull upon them. It is an economical fence to build, and even if it cost more than others (which it does not), it would still be the cheapest in the end. Our readers are urged to send for the Brown Fence book. Address, Brown Fence and Wire Co., Cleveland, O. This company is headquarters not only for the Brown fencing, but also for coiled spring wire, smooth, soft, galvanized wire and barb wire, which they sell to the farmer direct from the factory at wholesale prices, guaranteeing both quality and price.

SOUTHERN MISSOURI LANDS.

N. F. Murray & Son, Oregon, Mo., who are well known to hundreds of Fruit-Grower readers, have an advertisement in this issue, calling attention to lands which they have for sale in South Central Missouri. Messrs. Murray are not only reliable gentlemen in every way, but with their experience they know pretty well the value of lands, and are therefore in position to give good advice to those who want to locate in South Central Missouri. If one wants grazing lands they know where it can be found; if dairy farming is to be the business, they know where are the best locations; and, of course, they are qualified to give advice to those who wish fruit farms. Anyone who wants to buy Southern Missouri lands should write to these gentlemen, telling them what you want, and they will be in position to give you some good advice. The lands which they offer are excellent bargains for investment purposes, even though one might not desire to improve the property. These gentlemen have just published a booklet telling of the resources and opportunities of Southern Missouri, which will be found helpful to all who are interested. It will be sent free to those who ask for same.

CALIFORNIA LANDS.

Among the advertisements on our "Farms for Sale" page will be found that of the Realty Company, Lodi, Cal. This company has issued a little booklet telling of the opportunities which are offered homeseekers in that conntry, and one of these will be sent to every reader of The Fruit-Grower who asks for same. This booklet is illustrated and contains just the information which everyone wants concerning that country—cost of land, the crops grown, condition of schools, churches, etc. We recommend that any of our readers who are thinking of changing their location send for one of these booklets, addressing The Realty Co., Box U, Lodi, Cal.

If you want alfalfa seed this spring, or maccaroni wheat, brome grass, kaffir corn, Russian speltz, sorghum, in fact any kind of tree or farm seed that is adapted to the western plains country, there is no better firm to look to than the Kansas Seed House (Barteldes & Co.) at Lawrence, Kan. The same firm has houses and is known as the Colorado Seed House and Oklahoma Seed House at Denver and Oklahoma City, respectively. They are advertising, as ususal, western seeds for western farmers. That means trees, grass and grain seeds that are indigenous to the western soil and climate. The firm has come up with the great western farming regious. It is an old, reliable concern. An elegant catalogue for 1905 will come free to any address if you write for it. Look up the advertisement and address the house nearest you.

THE PERFECTION CURRANT.

A report from the fruit exhibit at St. Louis, made during the summer, when currants were on exhibition, has the following to say concerning the Perfection currant:

"The Perfection currant, of which several shipments have been received from the introducer. C. M. Hoker, of Rochester, New York, has made a wonderful showing. Not only are the bunches very large, but the currants themselves are often nearly as large as small cherries. The fruit stems are frequently from five to six inches in length and as the stalk is quite long it greatly aids in gathering the fruit. Sections of fruiting canes which were upon exhibition indicate that the variety is very productive, and this, in connection with the bright color and pleasant flavor of the fruit, will make it a very desirable market sort."

HUMANE HORSE COLLARS.

The Howell & Spaulding Co., Caro, Mich., have an advertisement in this issue, calling attention to their humane horse collars. This collar is made of metal and is zinc coated to prevent rust. It has been indorsed by leading veterinarians and members of humane societies, for the collar fits the shoulder of the horse perfectly and prevents chafing, etc. The use of this collar does away with the use of sweat pads and is in every way an improvement over the old collars. If you have consideration for your horse investigate this collar. It is possible to save money, too, for the collars last indefinitely. Send for free catalogue.

$5000 Worth of Live Stock

TO BE GIVEN AWAY

$1,000 worth offered each month for the months of January, February, March, April and May. We want farmers and farmers' sons to get up clubs for the Agricultural Epitomist, the only agricultural paper edited and printed on a farm. We have 650 acres devoted to experimental and practical agriculture, breeding thoroughbred live stock, poultry, grain, etc., which we give as premiums for clubs for the Agricultural Epitomist. We have a plan by which you can secure the premium you want at once and get up the club as you have spare time.

If You Need Thoroughbred Stock

cattle, hogs, sheep, goats, dogs, poultry, eggs for hatching, incubators, brooders, feed grinders, wagon scales, farm and garden seeds, etc., etc.—this is a good opportunity to get them without cost and with hut little effort on your part. Regular premiums are worth 80 per cent of the money the club raiser sends us; the Grand Sweepstake prizes offered each month for the largest clubs take nearly all the remaining 20 per cent. We practically give you in value all you send us. The Epitomist is now 25 years old with a circulation of 200,000. We want to add 25,000 new names to our list by June 1st, and will give away $5000 worth of premiums to get them. You will miss the opportunity of your life if you do not get in on this quick. Full information free if you ask for it. Address,

Agricultural Epitomist, Spencer, Ind.

Treat Your Face

To a good SHAVE by using a sharp razor; treat your razor to a sharp edge by using a

Radiumite Self-Honing Razor Strop

Makes shaving a pleasure. It keeps razor in PERFECT condition without HONING. Price, $1.00 each, postpaid. MONEY BACK IF NOT SATISFIED. Send for Leaflet.

STROYER & CO.,
Englert Street, Rochester, New York.

Senator Dunlap Strawberry

The best all-round strawberry ever introduced. Buy plants from the Originator. Bulletin will be out about February 1st. Send for it, and read the testimonials.

J. R. REASONER, URBANA, ILLINOIS.

The Perfection Currant

Awarded the Gold Medal at the World's Fair, St. Louis; also the $50 Gold Barry Medal and Pan-American Medal. The largest, most productive and best Red Currant. Each plant bears originator's label. Circular Free.

C. M. HOOKER & SONS, Rochester, N.Y.

Strawberry Plants

Fifty choice varieties at half usual price.

Manitou Red Raspberry

produces enormously and costs no more than common varieties. Treatise and catalogue free.

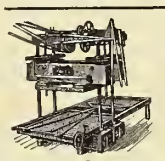
A. B. SIBERT, ROCHESTER, IND.

SURPLUS OF 35,000

Apple Grafts

Must be sold. Get prices at once. Large stock of apple trees must he sold before spring; also full line of stock.

Western Nurseries, Greenwood, Mo.



Cider & Wine Presses

Hand and Power. Manufactured by

Free Catalogue.

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DOUBLE DAILY SERVICE, with new 80-foot Acetylene Gas-lighted Pullman Chair cars (seats free) on eight trains and Pullman high-back seat coaches on day trains, between Kansas City and St. Joseph, Mo.; Hiawatha, Seneca, Marysville, Kan.; Fairbury, Fairfield, Hastings and Grand Island, Neb.

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$11.50 WINDMILL

FOR $11.50 and upward we furnish the highest grade galvanized steel Pumping Windmills made. For $22.40 and upward we furnish Windmills, complete, with the highest grade galvanized angle steel towers made. For the lowest prices ever known on all sizes of Windmills, Towers, Tanks, and the most liberal and wonderful windmill offer ever made, write for our Free Windmill Catalogue. Address **SEARS, ROEBUCK & CO., Chicago.**

Directory of Fruit-Growers' Societies.

St. Joseph Horticultural Society, St. Joseph, Mo.—R. E. Lee Utz, pres.; A. W. Bloomfield, sec.

Platte Purchase Fruit-Growers' Association—J. H. Karnes, pres.; James M. Irvine, sec., St. Joseph, Mo.

Republic Strawberry Association, Republic, Mo.—J. E. Davis, pres.; Dr. E. L. Beal, sec. and gen. mgr.

Mammoth Springs Fruit-Growers' Association, Mammoth Springs, Ark.—J. W. Smith, pres.; T. A. Sharp, sec.-treas. Strawberries ripen May 1; raspberries and blackberries, June 1; peaches from June to October; apples, canned fruits, etc.

Fruita Fruit and Produce Association, Fruita, Colo.—W. C. Rhinehart, mgr.

Barber County (Kan.) Horticultural Society—C. A. Blackmore, sec., Sharon, Kan.

Missouri State Horticultural Society—L. A. Goodman, sec., 4000 Warwick boulevard, Kansas City, Mo.

Kansas State Horticultural Society—William H. Barnes, sec., Topeka, Kan.

Illinois State Horticultural Society—L. R. Bryant, sec., Princeton, Ill.

Iowa State Horticultural Society—Wesley Green, sec., Des Moines, Ia.

Arkansas State Horticultural Society—Prof. Ernest Walker, sec., Fayetteville, Kan.

Southern Illinois Horticultural Society—E. G. Mendenhall, sec., Kinmundy, Ill.

Logan Fruit-Growers' Association, Logan, Mo.—G. W. Logan, sec.-mgr.

Wathena Fruit-Growers' Association, Wathena, Kan.—John Brazelton, Jr., sec.

Michigan State Horticultural Society—C. E. Bassett, Fennville, sec.

New Jersey State Horticultural Society—Hon. Henry I. Budd, sec., Mt. Holly, N. J.

Pennsylvania Horticultural Society—David Rust, sec.; meets third Tuesday of each month at Horticultural hall, Broad street, Philadelphia.

Springdale (Ark.) Fruit-Growers' Union—James T. Craig, sec., Springdale, Ark.

Willow Springs Horticultural Society, Willow Springs, Mo.—R. Carey, sec.-treas.

(Send in names of other societies with address of secretary.)

Program of West Virginia Horticultural Meeting.

The annual meeting of the West Virginia Horticultural Society will be held at Charleston, W. Va., January 26 to 28, with the following program:

President's Annual Address—Hon. Alex. Clohan, Martinsburg, W. Va.

"The West Virginia Fruit Exhibit at the St. Louis Exposition"—S. W. Moore, Elwell.

"Practical Problems in Orchard Management"—Prof. T. C. Johnson, Morgantown.

"The Food of Birds"—Rev. Earle A. Brooks, Waverly.

"The Horticultural Society and the Experiment Station." — James H. Stewart, director West Virginia Agricultural Experiment Station.

"The Six Most Promising Varieties of Apples for West Virginia"—C. S. Scott, Sink's Grove.

Discussion — Charles Miller, Gerrardstown.

"Peach Growing in West Virginia"—Hon. H. W. Miller, Paw Paw.

Discussion — Charles B. Newell, Chester.

"Fruit Packing and Packages as Seen at the St. Louis Exposition"—S. W. Moore, Elwell.

Discussion—H. L. Smith, Martinsburg.

"Some Troublesome Insects of 1904"—Fred E. Brooks, Morgantown.

"Storing Apples" — Hon. W. F. Brown, Arroyo.

Short Talks on the Needs of Our Society—R. H. Brown, H. C. Thatcher, B. F. Mann, W. W. Stevens, W. C. Mahan, S. W. Zinn, D. Gold Miller, G. C. Starcher, R. L. Hutchinson, G. W. Southern, M. Schwartzwalder, S. W. Moore and J. T. Catrow.

Want Lower Freight Rates.

The growers of Willow Springs, Mo., are circulating a petition as follows: "We, whose names are hereto subscribed, being materially interested in the growing and marketing of fruits of the various kinds in the state of Missouri, and being fully convinced that the life and development of this industry depends largely upon securing a lower freight and express rate over the railroads of our state, respectfully petition our legislature to enact some law providing for a lower rate of transportation over all railroads in the state."

This petition, while it will hardly secure the reforms desired, owing to lack of authority on the part of the legislature to secure the relief, but shows the general demand for better rates for fruit shipments. Not only are the rates in many cases too high, but the discrimination which is described in the article by Mr. Lord of Iowa is almost unbearable. The adjustment of freight rates is one of the most important matters which confronts fruit-growers today. The best solution seems to be President Roosevelt's recommendation that the interstate commerce commission be given power to adjust freight rates in interstate shipments.

QUESTIONS AND ANSWERS.

James Cooper, Palisade, Neb., wants a good horseradish grater. He says he has a large size rotary hand grater, but it is not satisfactory. He puts up quantities of horseradish and wants a satisfactory grater. Who can give name of one?

W. H. F., Plainfield, N. J.—Have any Fruit-Grower readers used Con-Sol for San Jose scale? If so, what has been the result?

A letter from Prof. H. A. Surface of Pennsylvania states that the preparation will not stand the dilution claimed by the manufacturers. He says that it will not be effective if diluted with more than four parts water to one of the preparation. Prof. Surface says it is a mistake to rely on the preparation being effective if it is weaker than this, but that at this strength it is effective, but expensive if one has a large orchard to spray.

J. L., St. Charles, Ill.—(1) How far apart should standard pear trees be planted? (2) Is it any protection against blight to seed a pear orchard down to grass? A neighbor cultivated his pear trees and they all blighted.

Pear trees, being of more upright growth, are planted much closer than apples; 16 to 20 feet is a good distance. (2) The cultivation of pear trees induces a rapid growth, and the trees are more subject to blight. Accordingly, in our rich western soils, most growers prefer to cultivate the trees until they reach about bearing age, and then seed down to grass or clover.

D. T. M., Capps, Ark.—(1 Who won the prizes on the different varieties of fruit at the St. Louis exposition? (2) Who won the prizes for new varieties of fruits, especially of peaches?

There were no competitive exhibits at St. Louis. Each fruit exhibit was judged as if there were no other exhibits on the grounds. It was judged on scale of points, for quality, size, color, etc. If the score were high enough the exhibit received a grand prize; if not extensive enough, then gold, silver or bronze medals were awarded. But there was no competition, so there was no "best" exhibit, nor was there any "best plate of Ben Davis apples." Nor were any premiums awarded for best new fruits. Everything was on score of points.

F. M., Olathe, Kan.—When is the best time to cut water sprouts out of my orchard?

Take them out at any time before growth starts in spring, same as any other pruning would be done.

J. C., Palisade, Neb.—(1) In fruiting raspberries is it best to keep all new growth cut back till after fruit is gathered? (2) Is the Columbian raspberry a good variety? Do the plants bear from the new growth if old ones are frozen down?

The new growth of raspberries is pinched off at about two feet, to induce the forming of laterals, but further pinching is not practiced by the majority of growers. After fruiting, the old canes are cut away. (2) The Columbian raspberry is a good variety, and fruits like other sorts. If the canes are frozen to the ground the new growth will not fruit the same season.

G. W. W., Vinemont, Ala.—What is the cause of the leaves falling from Agawam grapes, just as fruit commences to ripen? Have done this for the third year, while Concord, Moore's

SPRAY PUMPS

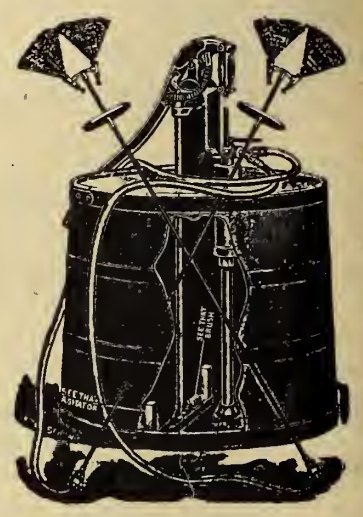
With All Brass Working Parts

MECHANICAL AGITATORS
that *agitate*—and
AUTOMATIC BRUSHES
for keeping Suction *Strainer Clean.*

No need using space to tell the advantage of spraying fruit in order to secure best results from your orchard—almost everyone is now convinced that fruit-growers must spray.

The point to consider is, What pump shall I use? You cannot afford to be without the best—the line of pumps manufactured by the Field Force Pump Co., Elmira, N. Y.

Best for several reasons. First—They have the greatest power, and great power is necessary to produce the fine mist in spraying which gives the best results. Second—They are strongly made and will last longest. Third—They are so constructed that the agitation of the spray mixture is perfect—and every practical man knows how necessary it is that the mixture be kept agitated. Fourth—Notwithstanding the great power of these pumps, and the thorough agitation they produce, they are easy to operate.



EMPIRE KING.
Mounted on 100 Gallon Tank, with two leads Complete.

Pumps and Appliances of All Kinds for All Kinds of Work

Send for Illustrated Catalogue—FREE!

Among commercial orchardists there is a growing impression that more powerful spray pumps must be used. A strong pressure must be maintained, to produce the fine mist so necessary for best results. Large tanks are required, to avoid lost time in going to and from the station where the mixtures are made, and a strong, reliable outfit must be used—one which will not break down when most needed.

Now, we believe the Orchard Monarch is the most powerful sprayer made. Tank of large size (150 gallon capacity); mixture is vigorously agitated; power is furnished by sprocket wheel on axle of wagon, with special air chamber, which will hold enough air to spray a tree after the wagon stops. It will pay large orchardists to investigate.

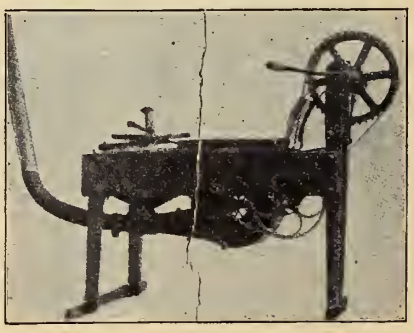
Our new catalogue tells all about our line of pumps. Send for it, free. Tell us the size and age of your orchard and we will recommend style of pump best suited to your needs. Better send in your order now, before the rush.

Write for Name of Nearest Agent

Field Force Pump Co.

Manufacturers (Formerly of Lockport, N. Y.) *ELMIRA, N.Y.*

SPRAY WITH DUST



That is the conclusion of every fruit-grower who expects satisfactory returns from the orchard, garden or berry patch. Get the machine that will do the work in a satisfactory way with the least expense.

The Whirlwind

Is the only machine that will do this. Write for descriptive catalogue and prices. A correct formulae furnished with each machine.

Letters below are samples of comments we are receiving on the Whirlwind:

Goreville, Ill., Dec. 27, 1904.

The Kiser Whirlwind Duster Co., Stanberry, Mo. Gentlemen:—Yours of Dec. 21, 1904, received. Will say in reply that I used the dust spray this season, and shall try it another year. Had but few wormy apples, but more scab than ever before, but this was a very favorable season for scab—so much wet weather. I am of the opinion that it will prevent scab to a certain extent. I picked 500 barrels of good fruit off of 14 acres, while no one else in this part of the country had any at all, or at least none of much account. If you had a man at Goreville about spraying time to give a practical illustration in dusting and how easily the dust is prepared and applied, you might sell some machines, as everyone attributes my crop this year to spraying, and many claim they will spray in the spring. Respectfully yours, J. M. MEAD, Goreville, Ill., R. F. D. No. 1.

Stanberry, Mo., Jan. 13, 1905.

Kiser Whirlwind Duster Mfg. Co., Stanberry, Mo. Gentlemen:—I am well pleased with the Whirlwind Duster which you furnished me last season. I sold over 200 barrels of apples gathered from about five acres of my forty-acre orchard near Mt. Pleasant, in this county. The remaining thirty-five acres having been set later, was not in bearing. My home orchard about two and one-half miles away, and also a thirty-five-acre orchard belonging to another man, and located between my home orchard and my Mt. Pleasant orchard, both of which have never been dusted, bad such inferior fruit that the buyer would not take it at any price. Now that the problem of making dry "Bordeaux mixture" has been solved, I think apple scab can be successfully combatted with your duster. The cost of dusting is much less than the liquid spray, and I am convinced that the dust process is far superior. I like your machine better than any that I have seen. Yours truly,
FRANK JONES.

THE KISER HIRLWIND DUSTER MFG. CO., STANBERRY, MISSOURI

BUSINESS PLANTS

For Business People

If you are thinking of setting out a patch of strawberry plants or are not getting results from your present patch, you want my catalogue. It is especially interesting to farmers and those just starting in strawberry growing. It will give you advice worth $ $ $ to you. It also quotes you low prices on thoroughly reliable business plants.

A. J. Nicholson, Manhattan, Kan.

Berry Plants

Buy MICHIGAN GROWN PLANTS for best results in fruiting. Immense stock of all the leading varieties of strawberries and raspberries, also fruit and ornamental trees and shrubs, seed potatoes, etc.

Nineteen Years in the Business

Our Motto: "Low prices for first-class plants that live and grow and bear fruit for those who plant them." Illustrated cataloyue with cultural directions and full particulars sent free. Write today.

Wooll & Tillotson, Elsie, Mich.

=BIG= MONEY

In Strawberries, Did You Say?

Yes. If you know the varieties to plant. My 1905 Catalogue will tell you all about the Money berries. There are many varieties advertised, hut few of them are Money makers. Berry culture has been my business over a third of a century. If you have failed with plants bought of other fellows, try me, and I will give you the FACTS about the Money makers. Catalogue ready to mail, Feb. 15.

B. F. Smith, Box 6, Lawrence, Ks.

HIGH GRADE SEED CORN

Scientifically grown, carefully selected, kiln dried and shipped in the ear. Varieties suited for the great Corn Belt and North far as Dent corn can be grown. Soil and climatic conditions here combine to make this the ideal location for growing the finest quality of Seed Corn. We grow all the corn we offer and guarantee all sent out. Orders booked in rotation and shipped when wanted. Write for Seed Catalogue. Seed Department of

The Gateway Nursery Co., LeMars, Iowa.

ARBOR VITAE

Infallible remedy for borers, scale, and all animal life inimicable to trees. Makes trees healthy and stimulates growth. Sold on guarantee. Write for particulars. Agents wanted.

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Big 4 Nursery

We grow on our own ground, a general line of Nursery Stock. We have a fine lot of cherry and other fruit trees; also Berry plants. We deal direct with the farmers. Get our Catalogue.

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We have to offer for spring delivery

Apple, Crab Apple, Pear, Cherry, Plum, Peach and Apricot Trees.

Grape Vines, Rhubarh, Asparagus, Roses, Shrubs, Evergreens, Hedge, Forest Tree Seedling—Catalpa, Black Locust, Russian Mulherry and Soft Maple. Write us for price list before ordering. Location 175 miles southwest Kansas City.

J. W. Hinshaw, Prop., Eureka, Kansas.

THE NEW BERRY

ABINGTON

The largest and most productive, perfect blossom, matted row herry on the market. Send for circular to the introducer and grower.

LESTER BLANCHARD, Abington, Mass.

GRAPE VINES AND SMALL FRUITS

Choicest varieties for the family.

Roses Strong, hardy two-year field-grown Hyhrid perpetuals, MOSS ROSES in variety, and the four RAMBLERS—Crimson, White, Yellow and Pink. GLADIOLUS—A fine strain mixed varieties. For price list address,

J. H. TRYON, Willoughy, Ohio.

FOR SALE AT A BARGAIN.

Complete spraying outfit, "Gardeners Choice," made hy Deming Co.' low steel wheels, 25-gal. capacity. Practically new. Guaranteed A 1. Write for price. H. B. MOORE, Box, 92, Burlington, N. C.

Early and other varieties show no signs of shedding leaves. Is it a disease or weakness of the variety?

Answer by W. L. Howard: The Agawam grape is very likely to overbear, which will so weaken the vine that the leaves are likely to drop off afterwards until it recovers. This variety is very susceptible to the downy mildew, which causes the leaves to fall. I suspect that your leaves are dropping from both of these causes.

A. L. H., Sylvester, Teas.—I have some high ridge land, the soil of which is 3½ to 4 feet to the clay. This is sandy land. with red clay foundation, of rather porous nature. I have part of this set in orchard, to peach, plum and apple trees. Some persons tell me that an orchard will not do well on this soil, as the soil is too deep. How about this? Which does best in deep soil, peach, plum. pear or apple trees? This soil stands the drouth remarkably well. No orchards have been tried in this sand.

Answer by W. L. Howard: I am not personally familiar with Texas soils, but in general the conditions you mention are favorable to the growing of orchard fruits. We do not usually think of soil as being too deep for fruit trees unless it be so rich in nitrogen that it causes too much wood growth and no fruit. Under such circumstances, the remedy is to check the growth by seeding the ground and root pruning by deep plowing. The trees may even be girdled in extreme cases. Plum and apple trees do well in rich soils, while peaches and pears are able to grow on very thin soils, although they are no better for doing so.

E. F. S.—What is the proper way to prune apricot and Japanese plum trees? Should a part of each year's growth be cut off the same as with the peach, to induce stocky growth?

Answer by W. L. Howard: All the plums and even apricots may be pruned in the same way, which is much like the peach; that is a cutting away from a third to a half of each season's growth.

F. A. S.—In what month would you plant potatoes, which are to be covered with straw for fall potatoes? How should the potatoes be handled before being covered with the straw?

Answer by W. L. Howard: Prepare the land as for ordinary manner of growing potatoes; plant the crop in the usual way and at the usual time, of course using the later varieties. Early sorts may be used, but there is more danger of their rotting before fall. Cover with straw as soon as convenient after planting. The straw answers the purposes of cultivation in that it conserves the moisture and keeps down the weeds.

S. B. Ansonia, Ohio.—Please give me formula for a good wash to prevent borers from working in forks of plum trees. They are working on about 100 climax plum trees.

Answer by Prof. J. M. Stedman: One of the most effectual and the cheapest washes you can make is as follows: Dissolve a quantity of hard or soft soap in water so as to make a strong soap solution. Then slack some good lime to a thick paste and mix enough with the strong soap solution to make a thick whitewash that will remain attached to the trunks of the trees for an eighth of an inch or so in thickness. This should be placed on the trees early in spring and then again about the last of May or the first part of June.

L. W. R., Falls City, Neb.—What remedy shoud I apply where leaf rollers put in their appearance just before strawberries begin to ripen? The leaf roller is a small worm hiding itself below the foliage, but finally appears on the upper side of the leaf and begins its work by forming a sort of gluish web, and will paste the leaf together, and in about two days the leaf begins to turn brown and die. They put in their appearance last summer just before the berries began to ripen, but somehow they disappeared all of a sudden, with hardly any damage. Just at the time it began to look serious we had several heavy rains, and in a few days they were all gone. Now, will they be likely to appear again next season. and what way would be the better to guard against the enemy, and at what time?

Answer by Prof. J. M. Stedman: The strawberry leaf roller may appear again next year in undue numbers, or it may not. It is entirely a matter of parasitism. Should they occur in sufficient numbers to cause any serious trouble you can kill them by spraying very early before they have curled up the leaves, with a good arsenical poison, or you can use powdered white hellebore—one pound in five gallons of water. The white hellebore is preferable where the berries are fairly well grown. It is also a good plan to mow the bed and burn it over after the fruit is all picked.

J. C. S., Cheyenne, O. T.—You will find enclosed for inspection insect on twig. Please answer through your paper what insect is present and how to get rid of it. They are scattered all over young trees.

Answer by Prof. J. M. Stedman: The specimen sent in the twig is the common twig borer. a beetle which lives normally in forests. but where orchards are near at hand they frequently get in the orchard in undue numbers. There is no successful way of fighting these insects. One can cut out the twigs containing them and thus lessen the number of beetles. but this will be unsatisfactory since the forests are full of them, and it is impossible to fight them in those places.

G. P. H., Goodenow, Ill.—Enclosed you will find twig of 8-year-old apple tree, which is covred with scales, trunk, limbs and all the same as enclosed piece. What is the name of this scale, and what kind of spray will I have to use to kill it off, and what is the best time to spray trees? (2) I have a large quantity of chicken droppings, and would like to know if that would make a good fertilizer for apple, pear and plum trees, and what quantity could be used per tree. The orchard is eight years old and on a light clay soil seeded to blue grass. The trees were mulched three years ago with horse manure and nothing done to them since, so the blue grass grew up through the mulch and made a tough waterproof sod about four inches thick. I just came here to work in November, and the first thing I did was to take sod from around trees from four to seven feet in diameter, and put good soil in place of sod. The grape arbor is in same condition as orchard. I turned the sod over lightly and was going to put some well rotted manure and good soil on top of sod, but cold weather came on and I had to put it off till spring. This is quite a lot of questions for a new subscriber to ask all at once, but I am an amateur and a greenhorn in Illinois. I came from New York recently, and I find a great difference in the orchard and tree growing industry. In New York they make them grow, and here they seem to take the short cut.

Answer by Dr. Whitten: The insect you mention is the oyster-shell louse, which is easily held in check by spraying two or three times during the summer with kerosene emulsion. (2) Poultry manure is excellent as a fertilizer for fruit trees, provided it is not used in too large quantities. It should be remembered, however, that poultry manure is rich in nitrogen, which does not particularly contribute to fruitfulness of trees, but favors, on the contrary, excessive wood growth and leaf growth. If it is not applied too heavily, however, there is no danger of its causing any too heavy growth, and it contains as well phosphoric acid and potash, which favor the production of fruit. The manure should be spread very thinly over he ground. It would be best not to apply more than two or three tons to the acre. Where the sod is to be broken in the vineyard or orchard, it is a good plan simply to turn it under and allow it to rot under the trees for a mulch.

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Our prices on all our Nursery Stock. You ask why? We are closing our entire stock this fall and next spring and they must go. Prices below wholesale to planters. Write **Today** for price list. Very best stock.

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Write Us TODAY for a Brief History of the Wonderful

SNYDER PEAR

A fancy fruit that sells for fancy prices. CAPPS BROS., Mt. Pulaski, Ill.

TO LET

77 acres fruit and truck farm, 5 miles from city hall, Buffalo, N. Y.; rent $500.

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Deafness Can Be Cured

I Have Made the Most Marvelous Discovery for the Positive Cure of Deafness and Head Noises and I Give the Secret Free.

With this Wonderful, Mysterious Power I Have Made People Deaf for Years Hear the Tick of a Watch in a Few Minutes.

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After years of research along the lines of the deeper scientific mysteries of the occult and invisible of Nature-forces I have found the cause and cure of deafness and head noises, and I have been enabled by this same mysterious knowledge and power to give to many unfortunate and suf-

I have Demonstrated That Deafness Can Be Cured.—Dr. Guy Clifford Powell.

fering persons perfect hearing again; and I say to those who have thrown away their money on cheap apparatus, salves, air pumps, washes, douches, and the list of innumerable trash that is offered the public through flaming advertisements, I can and will cure you to stay cured. I ask no money. My treatment method is one that is so simple it can be used in your own home. You can investigate fully, absolutely free and you pay for it only after you are thoroughly convinced that it will cure you, as it has others. It seems to make no difference with this marvelous new method how long you have been deaf nor what caused your deafness, this new treatment will restore your hearing quickly and permanently. No matter how many remedies have failed you—no matter how many doctors have prononnced your case hopeless, this new magic method of treatment will cure you. I prove this to your entire satisfaction before you pay a cent for it. Write today and I will send you full information absolutely free hy return mail. Address, Dr. Guy Clifford Powell, 1808 Auditorium Building, Peoria, Ill. Remember, send no money—simply your name and address. You will receive an immediate answer and full information by return mail.

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The company owns outright ten rich properties, including mill, in Plumas Co., California. Money is wanted to increase capacity of plant and for further development work.

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$15 WILL BUY 100 SHARES.

$30 buys 200 shares—$150 buys 1,000 shares. Take our advice and buy all you can.

Monthly Payments if Desired.

We have personally examined the entire property and honestly believe it will prove a great dividend-paying mine, in which case a small investment today may make you rich, at least hig profits. Write for Five Bears Prospectus. Map and latest reports from the mine. Booklet, "How to Judge Stocks," free. Address,

UNION SECURITY COMPANY.
534 Gaff Bldg. Chicago, Ill.

TEXAS SEED PECAN COMPANY had the honor o fexhibiting the largest Pecans in the world at the World's Fair Exhibition at St. Louis, known as the 20th Century Pecans; had also the Paragon (both grafted), and the Port's Select Pecans (seedling). We furnish also trees of the same. The 20th Century and Paragon both grafted on 2 or 3-year-old roots, bear in four years, the Port's Select in 5. Also furnish trees of the Japan Chestnut, Japan Walnut and English Walnut. Send for booklet.
TEXAS SEED PECAN CO., Fort Worth Texas.

Apple, Pear, Peach, Plum Trees

and Strawberry plants. Trees 1 and 2-yr.-old, free from disease, at prices that will surprise you. Write for Catalogue and prices.

Stevenson, N. & P. Farm, Fordyce, Ark.

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Surplus Apple Seedlings

We have them in three grades, No. 2, No. 3 and No. 4; straight and branched. Good clean stock that will please.

Write for special prices.

Shenandoah Nurseries

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An experience of over 30 years and our unequaled facilities have made our plates leaders. They are used by the leading nurserymen and agents in the United States and Canada. A trial order will convince you of their superiority. Send for catalogue and prices.

M. Brunswick & Co.

ROCHESTER, NEW YORK

LOGANBERRIES

Let every fruit-grower plant some Loganberries. They are proving more productive and profitable than Blackberries and ripen at a season before summer drouths. **Strong, well-rooted plants, $1.00 per dozen, postpaid.** Write for illustrated circular. Special prices in quantities.

J. B. Pilkington, Nurseryman

Portland, Oregon.

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Saves time, labor, staples and wire. To introduce quickly will send sample postpaid for **75 cents.** Your money back if it does not please you. Agents wanted in every county. Illustrated circulars Free. Address **Western Mfg. & Supply Co., L. Box A 711, Mexico, Mo.**

We sell Direct to Planters at wholesale

GRAFTED PECANS

and all kinds of **nut trees.** New **Plum —MAYNARD**—the money-maker. "The best that ever happened." Send for description.

OAK LAWN NURSERY, HUNTSVILLE, ALA.

WANTED---TWO MEN'S

names and addresses interested in Fruit-Growing. Our book, **Success and Failure in Orchard Growing, by a Practical Orchardist,** sent free to anyone sending same.

Messick T. F. Co., Quincy, Ill.

THE IOWA BLACKBERRY

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Mrs. James A. Root, Skaneateles, N. Y.

A. C. E., Leslie, Ark.—(1) When planting grapes on poor mountain land, what is the best fertillzer? (2) I am preparing to put 200,000 apple grafts on well-drained and in every way desirable land, xcept that it may not be sufficiently rich to secure a good, thrifty growth. What kind and how much fertilizer should be used per acre? (3) Where can I secure plate books, describing fruits and showing pictures of same?

Answer by Dr. Whitten: The best fertilizer for grapes depends upon the condition in which the planter finds his soil. Usually, however, bonemeal ls one of the safest fertilizers to use for grapes on an average soil. For nursery land, a complete fertilizer is best, one that contains nitrogen, phosphoric acid and potash. Bonemeal is a good fertilizer if lt is readily available, or any of the complete orchard mixtures sent out by reliable fertilizer houses will prove beneficial to nursery stock. Barnyard manure, well rotted, and plowed into the ground is good, provided it can be obtained in sufficient quantities.

I am not able to ascertain where the plate books describing fruits and showing pictures can be obtained. It might be well to write some leading nursery firm for this information.

[Write Brunswick & Co., Rochester, N. Y., and ment on The Fruit-Grower. —Editor.]

R. W. H., Chattanooga , Tenn.—I am preparing to set a peach orchard, and want to use bonemeal around the trees. The land is poor and of a gravelly nature. How much meal should be used to each tree, and should it be used at time of planting in February?

Answer by Dr. Whitten: From one to three pounds of bonemeal should be applied around each tree as the peach orchard is being set. It will be best not to put the bonemeal in a mass close to the tree, but to scatter it for several feet around the tree and work it into the ground as the trees are being cultivated. It will be well to apply it at the time of planting, as the bonemeal is not a quick fertilizer; that is, it gives up its fertility somewhat slowly and will not in any way be wasted before the trees begin to feed upon it.

J. W. S., Lewisburg, Ark.—I have some apple trees, planted one and two years ago. Some of them, set one year, are on land too poor to sprout peas; it has not washed any, but has been exhausted from continual cultivation in corn and cotton, and none of it would yield more than 20 bushels of corn per acre. It is a gray soil, with good clay, and I want to know the best rotation of crops to plant on this land to build it up so it will produce good, thrifty trees and paying crop of apples. Cow peas succeed well here; so do oats. How would it do to sow the land in peas this year, putting a few shovelfuls of barnyard manure around each tree; then mow the hay and turn the stubble in the fall and sow oats the next spring; then mow the oats in the early dough state and follow with peas; then sow crimson clover after peas, and so on until trees begin bearing. I think by the above rotation, by turning under the whole crop of crimson clover, I can make the land rich enough to make forty or fifty bushels of corn per acre in five years, and still save some feed at the same time. Would oats injure the orchard if cut before maturing the seed? Should the orchard be cultivated after it begins to bear? (2) Will the Black Ben Davis apple keep any further into winter than old Ben?

Answer by Dr. Whitten: The rotation suggested for the orchard is a good one, except that I would leave out the oats. Oats may occasionally be grown in a young orchard, provided the rainfall is abundant up to the time they are harvested, without apparent injury to the trees, and yet there is great danger of injuring young trees by sowing any kind of grain crop in the orchard, even though it may be harvested before the seeds are fully ripe. Cowpeas and crimson clover will be far better for the land. The more of the peas and clover that are turned under the better, although as soon as the land is rich enough to produce a heavy crop of either of these plants, it may be pastured or used for hay and the stubble plowed under. In case cowpeas are not going to be followed by crimson clover every fall, it will be best to leave the cowpeas on the ground during the winter and plow them under in the early spring and cultivate the ground well up to the time the cowpeas are to be seeded again, say, in June. Usually in the Ozark region it is best to continue cultivation in the orchard after the trees begin to bear, though it is not best to keep the ground cultivated clean of crops for many years in succession. If cowpeas are put in in June, allowed to lay on the ground over winter, plowed under next spring, and the ground given good cultivation up to the time cowpeas are sown again in June, the orchard ought to thrive splendidly.

Some growers claim that the Black Ben Davis apple will keep longer than the Ben Davis. So far as our observation goes, however, we have observed no difference in their keeping qualities.

H. M. W., Port Washington, Wis.—(1) Can blueberries be cultivated in gardens, the same as raspberries? If so, are they profitable? What soil and care do they need, and where can plants be obtained? (2) Does the Haymaker raspberry require pinching or cutting back in spring? If so, must the long canes of last summer's growth, or the new shoots or branches growing next spring, be cut, and when?

Answer by Dr. Whitten: Blueberries are not usually cultivated in gardens, as other small fruits are, although in some sections wild areas of land are being planted to them so as to encourage their growth very much as they grow in wild plantations. In some sections of Wisconsin blueberries will thrive splendidly. They need a sandy soil, but preferably one which is comparatively low and with a permanent water table not very many feet below the surface. In fact, the blueberry grows well in swamps provided the land is not actually flooded with water for a large portion of the year. (2) In the case of the Haymaker raspberry, it will be well to cut back the long canes which grew last summer sometime before they begin growth next spring. They should not be cut back very severely, but only to where the wood is firm and strong. I am not able to find out from our list whether the Haymaker is a black raspberry or a red. If it is a red, the new shoots will not need pinching in the spring; if it is a black raspberry it will be a good thing to pinch off the young shoots when they have reached a height of twenty inches in order to induce them to branch near the ground.

M. L. B., Clinton, Mo.—I have a disease in my raspberry plants that threatens to destroy them. They grow nicely until about the first of September, when the leaves begin to fall and the canes soon begin to die near the tips and keep this up until freezing weather, when they are nearly all dead, but only in the canes, for the roots seem all right. This has been on the increase for two or three years. What is the cause, and what the remedy?

Answer by Dr. Whitten: The raspberry plants are probably suffering from anthracnose, a fungous disease which causes the symptoms above, provided it is attacking the plants severely. It would be well, however, for the correspondent to send us a sample of the diseased canes so we can see whether it contains the anthracnose before we give a positive answer. In case it is anthracnose, the canes will be found to be infected with blotches of grayish color up and down the stems where the disease is attacking them. In case the stems contain these scabby-looking blotches, it will be well to proceed as follows: Prune the plants more severely than usual in order that they may not set too much fruit and may conseuently have more vitality in spring. In early spring before the buds start, spray with a strong Bordeaux mixture—6 lbs. copper sulphate, 6 lbs. lime, 50 gallons of water—thoroughly covering all the parts of the plants and the ground under them. This will no doubt hold the anthracnose in check next year.

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The Tucker Plant Breeding Farm

of the Johnstone Land Co. Write for our Free Corn Booklet and Prices. **Geo. M. Tucker, Ph. D., Mgr. of this Department.**
Blodgett, Scott County, Missouri.

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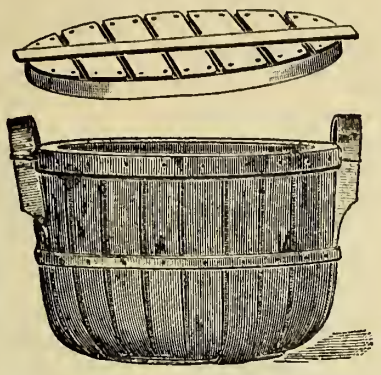

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HAVE A SURPLUS OF

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SIOUX CITY SEED & NURSERY COMPANY, SIOUX CITY, IA.

Fruit and Vegetables in Pennsylvania.

Away off here in Pennsylvania I read with interest The Fruit-Grower. On our 50 to 100 acre farm, one fourth of which, on account of side hills or stone, is fit only for pasture, where we grow a little of everything, fruit, flesh and grain it seems strange to read of thousands of acres in one crop. A large orchard with us is 200 trees, a big field of grain is 10 acres. Located all through the eastern states, and old Pennsylvania in particular, are manufacturing towns of more or less importance, which consume the products of the surrounding farms; there are very few communities so far away from one of those towns but what can be reached in at least a day's drive, so most farmers cater to the needs of patrons, being not on'y producers direct sellers of their products. My market own is Fr nklin, the county seat of Venango county. which is the banner oil producing county of the state, a city of 9,000 population, 3,000 of whom are employed in the various manufactories and in the production and manufacturing of oil. Franklin dates back to when the French and English were contending for the possession of the Ohio valley. We have six miles down the historic French creek valley. Our principal business is dairying, but we do a lot of truck gardening for pleasure and to get something to sell. What started my pencil going, (they say it starts easy) was Major Holsinger's several articles on asparagus. We do not at all dispute the major's report of his asparagus crop. We sell gobs of asparagus. We tie in bunches about half inch in diameter and wholesale at 80 cents per dozen bunches for the first to 50 cents at the fag end of the season. We have 4 rows of rhubarb across our garden, 8 rods long, planted in hills four feet apart. On the 25th day of March we began selling, and put six stalks in a bunch and sold to the stores at 60 cents per dozen bunches; sold five dozen the first week and sold on an average of ten dozen per week until June 28, increasing the size of the bunches and decreasing the size of the price until our bunches were three inches in diameter and the price had shrunk to 25 cents. Our rhubarb account stood twine 10 cents, proceeds, $40.00. We do not produce anything on our farm which gives us as much money for capital invested and labor expended as our 40 rods of rhubarb. We go between the rows with a garden barrow, snap the stems and wheel them to a shady place or if cold to our general out house and bunch them, tying them at each end and cutting away a part of the top. The work of bunching is dozen in a half a day. Fifteen is our best record.

If any of your readers want my way of cultivation I will cheerfully give it. I am also a Ben Davis man. Have 50 of them in an orchard of 200 trees. Now Mr. Editor a little taffy at the proper place and time is good. We get a number of general farm papers, but The Fruit-Grower fills the bill in regard to the growing and handling of fruit better than all the rest put togetner.

O. C. SIGWORTH.

Venango Co., Pa.

More Reports Regarding Munson"s Grapes.

Perhaps our experience with the Munson grapes may be of interest to C. B. P., Albany, Mo., as we are but a little south of the fortieth parallel. We planted in the spring of 1901 one plant each of several varieties which were recommended by the Munsons as being most likely to prove of value here. The season of 1903 we had no grapes at all, owing to late spring frosts, so that we have only last year's fruitinf to judge by. We have them, with the exception of Beacon, on cold clay soil and all would undoubtedly do better on a more suitable location Beacon we found to be the best bearer, it being on rich, warm black soil, and altogether very satisfactory, barring some disposition to attack by mildew, which was very bad last year on nearly all varieties. The description given it in the Munson catalogue fits in every particular except flavor. The catalogue says, "Very juicy, sprightly and of a very similar flavor to Concord—rather more agreeable." We find it not at all similar to Concord, having inherited much of the flavor of its wild parent—very agreeable, but depending upon individual tastes as to whether or not it is more so than Concord. From a limited trial, we think very well of it and think it will prove valuable for all purposes.

Manito is of most agreeable flavor, as good as Delaware to our taste, very prolific of medium to small bunches and berries. Ripe about with Moore's Early, but hangs on much longer than that variety, as it does not crack. An excellent table grape and too good for anything else. Has just the least bit of the wild flavor. This and Beacon were the only ones carrying any Post-Oak blood that impressed us favorably.

Presly is a much better grape than its parentage (Elvira X Delaware) would indicate. To our taste of fair quality, bears extremely well, packs well and sells well on its looks. A few which we sold on on the St. Joseph market in four-pound baskets were eagerly taken at 12½ cents per basket. With us not ripe "with or before Champion," but a few days after.

Wapanuka is very promising and on proper soil we have no doubt would show more good points than any of the others. It ranks in quality with Moore's Diamond, but the vine seems to be stronger in growth and more prolific than that excellent variety. Large berry.

We were not favorably impressed with any of the other varieties tested, though one season is not long enough either to recommend or condemn. Brilliant winter killed entirely, root and branch, during the cold winter of 1902. Carman and Fern Munson have not produced a grape so far, but neither has Norton, planted at the same time, though this latter variety is one of our best bearers. R. W. Munson and Xlnta both bore a very few fruits fit only for wine. Marvina was quite promising, but lost practically the entire crop from mildew. Yomago did as well as Delaware, which, however, did not do well last season.

JOHN BRAZELTON, Jr.

Wathena, Kan.

Difference in Description of Fruits.

I happen to have a few nursery catalogues from various sources and I will give you a few quotations from them which I trust you will publish for the enlightenment of your readers.

I will commence with the Abundance plum. First comes the catalogue of the New Haven Nurseries, of New Haven, Mo..

Abundance.—A hardy productive Japanese sort. Large **purplish red**; quality very best. **Season, early in July.**

Next the Lee's Summit Star Nursery catalogue:

Abundance (Japan).—July 15. Beautiful lemon yellow ground, nearly overspread with bright cherry and with a heavy bloom; large to very large, oblong, tapering to a point like wild goose; flesh orange yellow, melting, rich and highly perfumed, etc., etc."

Next we will look at Messrs. Storrs & Harrison catalogue of Painesville, Ohio, and see what they say.

"Abundance, (Botan).—One of the oldest and best known Japanese varieties; hardy and productive; fruit large, **Lemon Yellow**, with heavy bloom; good quality, August."

Missing Link Apple Co.'s catalogue.

Abundance—Large, **bright red**, with a **yellow cheek**; flesh light yellow, very juicy, tender, with delicious sweetness; early, annual, profuse bearer, September."

And there are others!! Now, I suppose all a fellow would have to do to obtain a variety would be just to obtain as many catalogues from the various sources as he could and get an **Abundance** tree from each one of them and he would be fixed! I have not looked up the other kinds of fruit as yet, but will leave them for the next rainy day.

Anyone can prove what I have said to be true with the least of trouble.

G. D. LYNCH.

P. S.—We do stumble over some funny things sometimes.

These differences are not so marked as would appear, however. The different catalogues were written by different men, and each gave the description of the variety as he knew it. The locations of the different nurseries are different soil, climate, etc., are not the same, so that it is true that the variety will be several weeks earlier in one place than in another. The color of the fruit, too, will vary, owing to the sunshine, density of foliage, etc. Still, it would seem there is too much difference in the time of ripening of this fruit, as given in the several catalogues. Perhaps one was written one year and another the next season, and the time of ripening was earlier one year than the next season. How about this, nurserymen?

Plano 1905 Calendar
Lithographed in 10 Colors
Size, 14 x 21 inches.

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Currants, Gooseberries, Blackberries, Raspberries, Strawberries. Price List **FREE.**
Send 2c stamp for illustrated descriptive catalog.
T. S. HUBBARD CO. Fredonia, N. Y.

Two Iowa Horticultural Meetings.

The Southwest Iowa Horticultural Society held their thirtieth annual meeting at Harlan Dec. 6, 7 and 8.

The meeting was called to order by President C. F. Duer, of Missouri Valley. The president's address was read; also secretary and treasurer reports. Then followed reports of the directors, placing exhibits and other preliminary work.

"Lessons Learned in Montana," was a paper by O. H. Barnhill of Holt, Montana, formerly of Shenandoah, Iowa. It was quite an extensive paper and well arranged.

"Lessons Learned in California" was discussed by H. C. Raymond of Council Bluffs. Mr. Raymond talked quite extensively about many things he learned in the coast state. One of the many was that the ladies were much more polite out there than in this country, as they invariably took off their hats in church, but as most of what he learned did not refer directly to horticulture work it did not incite much discussion.

Next was a discussion of the strawberry; first, on plant making, by R. D. McGeehan of Atlantic. Mr. McGeehan is an old grower and authority along this line and among other things he advises new beginners to let the novelties alone and plant only those varieties that have been thoroughly tested. He recommends several varieties, among which he places Senator Dunlap at the head.

"Growing of the Strawberry, Commercially" was a paper by Dr. J. E. Bender of Oakland. Dr. Bender grows from five to ten acres yearly, and has had several years' experience.

"Growing the Berry for Local Market," by W. A. Fouts of Missouri Valley was an exhaustive paper. Mr. Fouts is a practical grower and looks after the dtails very carefully; but, like many others in the small fruit business, finds many things to discourage him. These papers were discussed quite extensively and evidently all growers are laboring under the same difficulties, by the evidence brought out. The growing of the strawberry is the easy part of the work; picking and marketing are the greatest problems, but the picking appears to be the sticker. To know how to handle the pickers to best advantage and how to get good pickers.

"Grafts from Bearing Trees," by Louis Annin of Clarinda brought out quite a discussion. Mr. Annin claims that in order to get a good bearing tree from any variety the cions should be cut from trees that are known for their bearing qualities.

In the course of the discussion Mr. F. P. Spencer of Randolph made mention of the fact hat he had Ben Davis growing side by side of same age and conditions same and yet one had borne quite profusely, while the other had not produced a half dozen apples; and the same occurs in every orchard.

J. P. Jackson: "If I were cutting cions for myself, I certainly would cut from trees that had a record for their bearing qualities. I think this a matter that will bear investigation and should be followed up by our experiment stations."

The evening program was occupied by George H. Van Houten of Lenox, who has lately returned from Alaska, where he spent two and a half years. Mr. Van Houten is a very close observer and gave quite an extensive talk to a crowded house. In the course of his talk he spoke of the climate in different parts, also vegetation, the people and the various nationalities; how each live and the discouraging efforts which have been made at farming and fruit-growing.

The next morning L. M. Lord and D. L. Heinsheimer of Glenwood read papers pertaining to freight rates on apples and other fruits. They were both able papers and created quite a discussion. This matter was also extensively discussed at the state horticultural meeting and also at the meeting of the state board of agriculture, which was held in Des Moines December 13 and 4.

"Street Trees" was a paper presented by Wesley Greene of Davenport and discussed to some extent.

"Packing and Storing the Grimes Golden Apple" was the title of a paper read by F. P. Spencer of Randolph. Several papers on the peach and plum were read, but owing to the fact that they were crowded for time they were past without discussion. There were also several papers on spraying. which were discussed extensively. This subject is attracting the attention of most all fruit-growers in Southwestern Iowa.

The evening session was mostly occupied by Prof. L. H. Pammel of Ames, with lantern slides, presenting views of various homes, with and without the beautifying effects of trees, shrubs and vines artistically arranged.

Officers elected were C. H. Duer, president, Missouri Valley; W. M. Bomberger, secretary, Harlan; J. P. Jackson, treasurer, Glenwood.

The exhibit of apples was extra fine for this season, there being over 300 plates on the tables. W. M. Bomberger took first premium on best exhibit, E. B. Gray of Griswold second. The citizens of Harlan gave this society the most cordial welcome they have had accorded them in years. And especially is much credit due the Commercial club of Harlan for their kindly interest in our behalf.

The Northwest Iowa Horticultural Society held its thirteenth annual meeting at Storm Lake in the opera house on November 29, 30 and December 1, 1904-5.

The territory comprising this society is the northwest twenty-four counties of the state, mostly prairie country, and practically new, especially so in regard to fruit-growing, and yet there are many bearing orchards. The varieties are quite different from those grown in Southern Iowa, the majority being of the Russian varieties. There were on exhibition 150 plates of very fine apples, but what was the most surprising was to see the old reliable varieties of Ben Davis, Jonathan and Grimes Golden quite prominent. Those three varieties are gradually working their way father north, until today there are now and then favorable locations as far north as the south one-third of Minnesota, where they are to be found growing. The meeting was called to order by President P. F. Kinne of Storm Lake. The forenoon was taken up with preliminary work and arranging exhibits. The afternoon session was entirely taken up by the ladies of Storm Lake.

First on the program Wednesday was a paper, "The Cherry," by C. K. Pelmulder of Grant City. This paper was extensively discussed as to cause of leaf spot. This is a vital question to the cherry-grower, as the loss in cherry trees has been enormous throughout the entire state, many thousands having died the past two years, especially of the Morellos, which have almost all gone out.

"The Plum," by H. L. Felter of Washta, was read and discussed as to varieties for the northwest portion of the state and from evidence brought out in the discussion it appears that each locality has its special favorite, while hardly any two could agree as to which variety was best as to flavor, etc. H. H. Fritch of Sac City read a paper on "Soil and Drainage of Farm Orchards." Prof. E. T. Erwin of Ames also read a paper on the orchard site. Both the papers were thoroughly discussed. This was regarded as a very important question and occupied some time.

Mrs. A. S. Caulkins, Storm Lake, read a paper on evergreens and exhibited photos of rows of Norway spruce set four rods apart, forming a driveway between. These trees were set thirty-five years ago and today they form an archway over the road.

H. P. Baker of Ames read a paper on "Wind-Breaks for Iowa Farms," which was an excellent paper and thoroughly discussed.

The students of Buena Vista college gave an entertainment in the evening which was fine.

Thursday morning election of officers, reports of committees, etc., occupied the time. In the afternoon several papers were read, among which was one by Wesley Greene, secretary of the State Horticultural Society, entitled "Some Hard Plants." This was a splendid paper and showed that the writer was well up in horticulture.

"List of Roses and Early Flower-Plants for Outdoor Culture," by D. B. Healy of Sioux City, was a well gotton up paper. Although Mr. Healy is a lawyer this paper gave evidence that he spent a portion of his time among the beauties of nature. Mr. Healy is also quite a horticulturist, as he owns a forty-acre orchard inside the limits of Sioux City, which is just coming into bearing.

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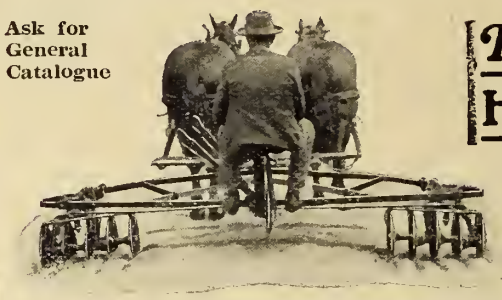

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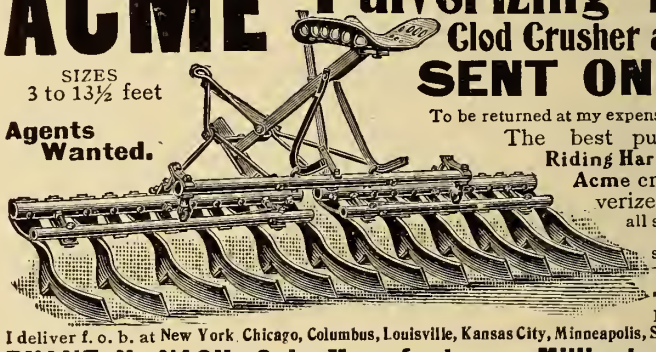

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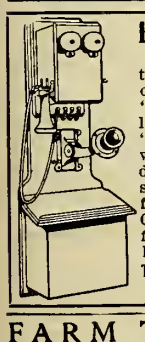

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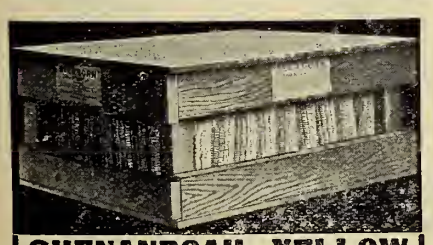

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Queries from the East.

How should I prune apple trees in an old orchard? Is it best to paint the stumps of branches, and if so, with what? F. M. D., McAiry, Pa.

Ans.—It is difficult at any time to give advice on this subject without seeing the tree, and especially so, for trees in an old orchard. Unless the trees are valuable market sorts, the best treatment would be to dig them out and plant young trees of good varieties. If they are desirable sorts I should say prune as little as possible. Cut out all limbs that cross and rub other limbs. Don't cut out a large limb unless it is absolutely necessary, but do the cutting on the small branches that interfere. See that the top of your tree is open, so as to allow the sun's rays to get at the fruit, and keep the lower limbs rather dense, so as to shade the ground, and do not cut off the large lower limbs because a horse cannot get under them. Your horse does not need to get under them and you want these limbs to hang down low, so as to shade the ground and conserve moisture. If you must cut off large limbs they should be painted after about a week with any good lead and oil paint. The majority of old orchards which I have seen need fertilizing more than pruning. A good dressing of barnyard manure will not hurt your trees and may do them a great deal of good.

What is the verdict at this time of practical men regarding the value of the dust spray? R. E. H.,
Hagerstown, Md.

Ans.—The verdict has not been rendered from many sections in the east. It seems that our fruit-growers are so busy writing about San Jose scale, and methods for its suppression that they are overlooking other very important matters. However, those who had sufficient energy to get out very early in the morning and dust their trees before the sun had time to dry the dew are well satisfied with the results, and determined to continue to use it.

There is a fertilizer called "Odorless Phosphate" made at Pottstown, Pa. It is refuse of steel, and in German is called "slag." Is it good for peach and apple orchards? If so, how much should I apply per acre? Also, is a mixture of lime and wood ashes good for trees, and how is it applied?

Ans.—Thomas Slag is a waste product obtained during the manufacture of Bessimer steel. The slag which accumulates while the steel is being made is rich in phosphoric acid. This slag, when finely ground, is used—especially in Europe—in large quartities as a fertilizer. It is rather slow acting, and the slow acting forms of fertilizers are ususally considered best for fruit trees. Do not apply at base of tree, but sow broadcast as far as the roots extend. Both apple and peach trees need phosphoric acid to develop size and keeping qualities in the fruit, but they also need potash in still larger quantities, and wood ashes is an excellent form in which to apply it. The wood ashes also contain some phosphoric acid and considerable lime. When wood ashes are applied liberally it is not considered necessary to use lime the same season. Without knowing anything about the nature of your soil or the condition of your trees it would be impossible to say how much of each material should be applied per acre, but on general principles under normal conditions we would recommend 300 to 500 pounds of Thomas slag, and 900 to 1,800 pounds of wood ashes. Whenever land shows by its mechanical condition or by the volunteer crops that grow on it that it needs lime, it should have it. Sandy soils will generally need about twenty-five bushels of fresh burned lime per acre every six years. Clay soils, forty or fifty bushels per acre every seven or eight years. I have never had any experience in mixing lime and wood ashes, and do not know any one who has.

Can you please tell us something about the methods of constructing a cold storage house for fruit and the expense of the same, and also the expense of operating it? Is a cold storage house or room practicable for the average fruit-grower?
M. L. R., Rochester, N. Y.

Ans.—The principles of construction are the same for a cold storage house as for the refrigerator you use in your dining room or cellar. The first requisite is heavy double or triple walls containing one or two dead air spaces, so that the storage room is not affected by the outside temperature; and, second, some means for cooling the air within, either by means of ice placed overhead or by pipes containing cold brine. In addition to this a ventilating system must be arranged to regulate the temperature and the moisture of the atmosphere. It would seem useless to attempt to go into details of construction or estimate the expense of such a building in a newspaper article, as the success of the storage house depends upon accuracy in a number of small details of construction, and so many improvements have been made within the past few years that I would not attempt it. The buildings are expensive, and unless properly built in every particular are very unsatisfactory. When properly constructed and operated by a careful, intelligent man they will keep good fruit as long as necessary in perfect condition. I do not think it is practicable for an average fruit-grower to have his own cold storage house, but it is not only practicable but would be good business policy for three or four growers to join together and erect one for their joint use, as it would render them practically independent of the market in the fall and able to take advantage of the rise which always occurs after the apples have passed out of the farmers' hands. It will pay anyone who thinks of building to get from Mr. G. Harold Powll, assistant promologist, United States department of agriculture, Washington, D. C., the address of a few of the best cold storage houses in the state of New York, then go and examine them all carefully and get an estimate on a house that will combine the best points each, and build according to that plan.

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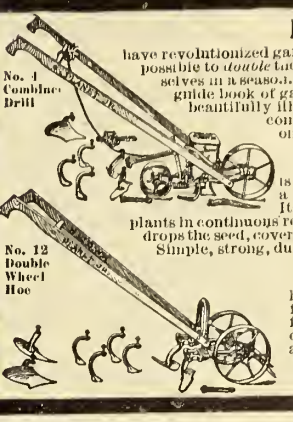

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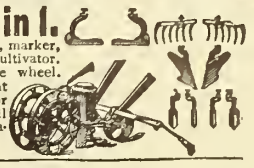

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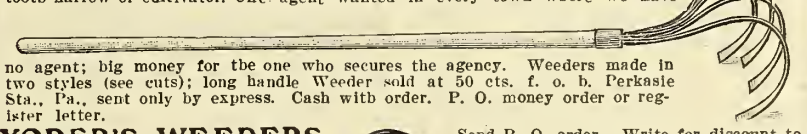

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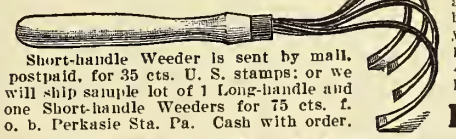

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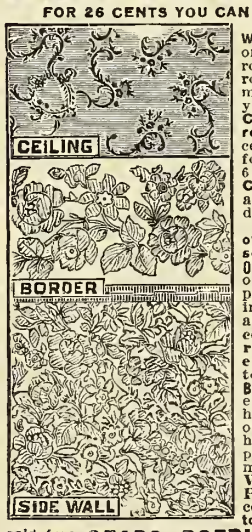

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Large vs. Small Orchards.

Reports have recently been coming in of proposed large orchards of peaches and apples that will be planted in the near future, if present plans carry out. Notably, 5,000 acres of Elberta peaches in Arkansas and a much larger plantation in Texas, with orchards of Ben Davis and Gano apples in several western states which will number their trees by the hundred thousand. There seems to be a craze just now for planting immense orchards. The success of men like Hale and Morrill has turned the heads of these "Westerners" who do everything on a large scale, and they are determined not to be out done by the "Yankees." Some of our Pennsylvania fruit-growers are trembling in their shoes for fear, when these great orchards come into bearing, the whole bottom will drop out of the fruit business, all of our markets will be overstocked and they will be "crowded off the earth." We believe these fears are groundless. That it is absolutely impossible to pick, pack and ship the fruit from such an orchard in the short space of two weeks, even if the railroad would furnish cars sufficient to carry them away, which is very unlikely. Then, again, the season at which they would be harvested is different from ours. So that they will be out of the way before ours come in; that, is, the peaches will, and the apples will be distributed through the great northwest, where apples cannot be grown successfully and will interfere very little with our apple crop. To produce good fruit and put it on the market in good shape requires great care and skill in handling. The kind of help required to pick and pack the fruit cannot be secured in large numbers, when wanted for only a month or two. Skillful, reliable men and women can secure and hold positions which give them steady employment the year round—and this question of help when needed is the one great drawback to the large orchard scheme. While there are a few men who have made a success of these large plantations, you will find the "little farm well tilled" has, in a great majority of cases, brought most comfort, ease, pleasure and profit to the owner; and it is the little orchard in all sections, with the right tree planted in the right place, properly cared for and made to produce its best, the fruit picked just at the right time and packed in the best possible manner and sent to the market that will pay the best price for it, that will prove a winner every time. We read of apple kings and peach kings and pear kings, and it may seem very nice to be a king—probably it is at times—but we must remember that kings are not the happiest or most comfortable men in the world. They have worries that the ordinary mortal knows nothing about. Imagine, if you can, the sensations of your peach king, as he starts an army of workmen to pick peaches in his 5,000-acre orchard of Elbertas, all getting ripe at once, and just as they are getting fairly started a rain storm comes up which lasts two days and clears up with a high wind, which is not at all an unusual occurrence. Here he has his army of pickers to pay; his peaches, instead of being packed nicely in baskets and cases, are in the mud, and the market a thousand miles away. He feels anything but a king at such a time. Our advice to the average fruit-growers is go slow. Be careful what you plant, how you plant it and where you plant it. Study your markets and plant just as many trees as you can care for properly and market the fruit properly. The man who starts in this way should be able to increase his acreage each year and he will grow with his business; and as it increases will be able to develop a system of management that will be easy to operate and profitable to himself. He will not run any great risk, and if he should be confronted by unfavorable weather at harvest time his loss will be trifling as compared with his profits along other lines, and these losses are reduced to a minimum by his ability to dispose of his damaged fruit in near-by markets, for immediate consumption. So we say to more conservative growers, don't worry about these large plantations in the west, but make your own little plantation a model farm. If properly distributed there will never be too much good fruit grown in this country; but the time has come when more attention must be paid to marketing and to the proper distribution of it. Our western and southern neighbors realize this fact; many carloads of peaches from Georgia and Tenness were shipped to glutted markets during the past season and were sold at prices that barely paid the freight, leaving nothing to pay for fruit and packages; this, too, when there were other markets that could have been just as easily reached which were perfectly bare of fruit at the time.

G. H.

How to Save Fruit Trees From Destruction by Mice and Rabbits.

By Prof. H. A. Surface, Economic Zoologist of Pennsylvania.

(a) **Mice.** The mice which destroy fruit trees are generally the species known as the Short-tailed Meadow Mice, or more properly called the Vole. They are very numerous in practically all portions of the state, and are the kind that form the path or runways in the grass and clover fields. They are destructive to grain, and also to nearly to all kinds of vegetation in the fields. We have known where they have devoured clover roots as deep down in the ground as they could gnaw them. They are voracious creatures, and also multiply rapidly. Their chief enemies are snakes, hawks, owls, shrikes, weasels, foxes and cats. We have recently taken three mice of this species from the stomach of one blacksnake.

It is an easy thing to poison these mice because they eat the food that is placed in their runways or in the regions they infest. A small quantity of strychnine—about one fouth of a level teaspoonful—may be dissolved in a quart of sweetened water and stirred into two or three quarts of bran. One-half teaspoonful of this should be placed in each runway, or in each hole. Repeat the operation daily for a few days, and there should be no further trouble from the mice. The poisoned material should be placed around the roots of the trees in winter, and as the mice come here to feed. They will take this substance rather than gnaw the bark of the growing trees. It should not be thrown upon the snow, but placed in their runways or burrows beneath the surface of the snow. As they eat vegetation of nearly all kinds, they can also be poisoned by dipping slices of potatoes, sweet potatoes, apples, etc., in paris green, and placing these slices where the mice will find and eat them.

Trees are protected from mice by mounding them with earth or ashes as deep as possible and to a height of about one foot. We know several places where this has been done effectually, especially in the orchard of the Pennsylvania state college farm, but we also know another orchard in which mounding did not give satisfactory results. This may possibly depend upon the depth of the snow in

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The Louisiana Purchase Exposition, St. Louis 1904.

The most wonderful the world ever saw, purchased by the Chicago House Wrecking Company. The dismantling of this exposition is the most gigantic undertaking of modern days. Millions of dollars of material for sale by us at prices that mean an enormous saving to purchasers. Now is the time to put into execution your long contemplated improvements. Buy quick because the prices we offer this material at will sell it as fast as we can make delivery.

100,000,000 Feet of Well Seasoned Lumber.

The time to buy lumber is today. Prices are advancing. Within the next 60 days you will see a decided increase in the market prices on lumber. Do not wait until the prices go down. They never will. Even though you do not happen to need any lumber today, it will pay you to purchase it now and store it for future use. It will prove to be a better investment than money in the bank. Its value will double in a year's time. The finest grades of lumber were used in the construction of this grand Exposition. The quality of the interior as well as the exterior material could not have been better and was purchased at the time with a view to strength, durability and finish. We are offering for sale everything needed in the construction and furnishing of a building for any purpose. **Studding, joists, planking, dressed and matched flooring, sheathing, timbers,** in fact every variety of lumber for any purpose.

Send Us Your Lumber Bill for Our Estimate.
You can save from 30 to 50 per cent if you buy at once.

This is your opportunity to build or improve your home or barn. In fact it is the chance of a life-time to get lumber below regular prices. If you are intending to build, be sure and take advantage of this offer which can only last for a limited time. We are selling material for houses, barns, warehouses, churches, halls, elevators, tool sheds, granaries and cribs, stores, school houses—in fact any kind of a building. If your County Fair buildings or race track need improvements, now is the time to order the needed supplies. Among the enormous stock we have just what you want.

Millions of Dollars Worth of Other Material for Sale.

Besides lumber, we have for sale at prices below the original cost, all kinds of SASH, DOORS, STEEL AND FELT ROOFING, PIPE, HARDWARE, MACHINERY, HOUSEHOLD GOODS, FURNITURE, RUBBER HOSE, ROOFING GLASS, WIRE AND FENCING, ELECTRICAL APPARATUS, FENCE POSTS, FIRE FIGHTING APPARATUS, STRUCTURAL IRON, PLUMBING MATERIAL, FLAGS AND POLES, ROPE, TOOLS of all kinds, TURNSTILES, STATUES, RAILING, MOULDING, IRON RODS, CONDUCTOR PIPE, EAVE TROUGHS, OFFICE FIXTURES, OPERA CHAIRS, SETTEES, and thousands of other articles.

Ask for Our Special World's Fair Catalog No. 399.

We purchased and dismantled the **World's Fair, Chicago, 1893,** the **Trans-Mississippi Exposition, Omaha, 1899,** the **Pan-American Exposition, Buffalo, 1901,** the **World's Fair, St. Louis, 1904.**
We have but little time to dismantle the St. Louis World's Fair with its millions of dollars of materials and furnishings used in its construction. Quick delivery to those that purchase now. **Address St. Louis Office**

Chicago House Wrecking Co.

Main Office and Yards
35th and Iron Sts., Chicago

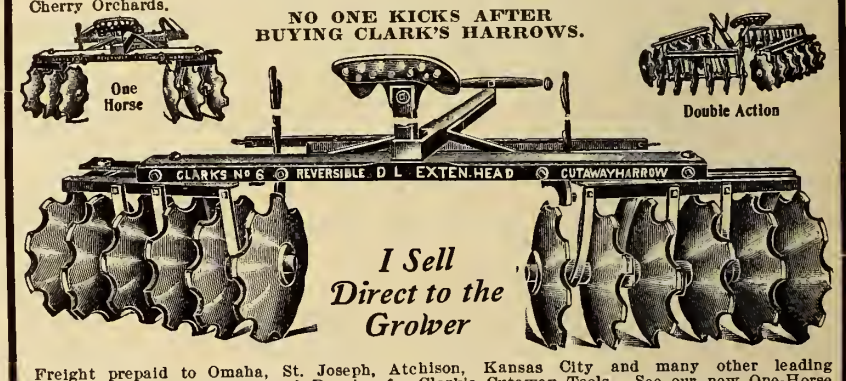
St. Louis Office and Yards
World's Fair Grounds, St. Louis

Clark's CUTAWAY HARROWS

Are Reversible and Extension Headed

You do not have to add to or take off a lot of steel work to extend or run gangs closed in our Harrows. A "6" for Apple Orchards. A "4½" and "5" for Peach, Pear, Plum and Cherry Orchards.

NO ONE KICKS AFTER BUYING CLARK'S HARROWS.



I Sell Direct to the Grower

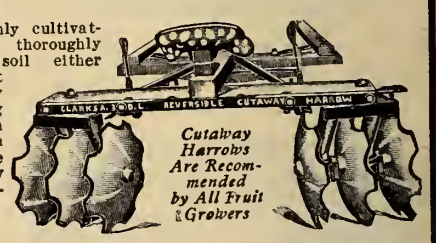
Freight prepaid to Omaha, St. Joseph, Atchison, Kansas City and many other leading railroad centers. Full line of Repairs for Clark's Cutaway Tools. See our new One-Horse Reversible Extension Harrow for all purposes. Fine for Small Fruits and Young Orchards. For Descriptive Circulars and Prices, send to

E. G. MENDENHALL, Box 300, Kinmundy, Illinois

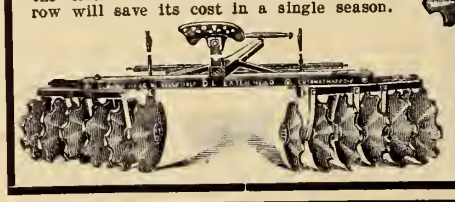
General Agent for Central and Western States. Only Western Distributing Agent.
Our Double Action Harrows and Reversible Disc Plows are a Wonder.

Cutaway Harrows

Are the best implements made for thoroughly cultivating the soil. Works in sod ground and thoroughly tears it; discs are reversible, throwing soil either way; fitted with extension head, to permit cultivation close to trees. The Cutaway Harrows are just the thing for cultivating orchards, and successful orchardists, such as J. H. Hale and others, recommend them above all other implements. Send for free descriptive catalogue, which explains how the implements work. One Cutaway Harrow will save its cost in a single season.



Cutaway Harrows Are Recommended by All Fruit Growers



CUTAWAY HARROW COMPANY

HIGGANUM, CONN.

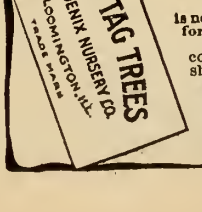
Red Tag Trees

When You Plant Trees Plant the Best

For over fifty years we have grown and sold the best and sturdiest nursery stock that good soil can produce. We now have the largest business of its kind in the United States. To protect our name and reputation and as a guarantee of high quality, all

Phoenix Nursery Stock

is now labeled with the **Red Tag,** with lettering as shown in the illustration. **Look for this tag on every Phoenix tree, it is your protection and our guarantee.**
Order your stock for Spring planting from the oldest and largest growers in the country. We have a great variety of fruit trees, ornamental trees, evergreens, shrubs, plants and novelties. Write for free catalogue. It tells why Phoenix Nursery Stock is best. You can deal with us by mail more satisfactorily than through agents, and at *half the cost.* Fifty years' experience insures careful packing and safe delivery. Phoenix Stock is exactly as represented and flourishes everywhere. *Write to-day.*



PHOENIX NURSERY CO., 870 Park St., Bloomington, Ill.

the orchard. Mice do not come above the snow to gnaw trees.

The trees may be painted with pure lead and linseed oil from the ground, as low as possible, up to the level of the branches. This will not injure the trees and will keep out borers and give protection from mice and rabbits. We have seen large orchards successfully treated in this manner. This is especially desirable as a preventive of borers. We know one person who painted his trees with linseed oil and tar, equal parts of each, and protected them until the latter part of the winter, when the mice become so nearly starved to death that they were forced to gnaw through the coating of oil and tar in order to get food. They then gnawed and girdled the trees and practically killed the entire orchard. Banding trees with wire netting will give protection from both mice and rabbits, as well as from borers.

One of the simplest means of protecting trees from mice is stamping down the snow for a short distance around them. These rodents will not come out on top of the snow to feed, and will not burrow through the packed snow. The only objection to this method is that every time there is a heavy snowfall it should be tramped again.

(b) **Rabbits.** Rabbits are more destructive to trees when the snow is on the ground. This is also the time when they can be most easily tracked and killed. Every person in this state has a right to kill the rabbits that destroy the property upon the premises of which he has control. This may be done at any time of the year However, if one should wish to preserve the rabbits and trees at the same time he may be able to do this by painting the latter with linseed oil and whit lead, or by banding them with paper or wire netting, or the wooden wrappers.

Another method of protecting trees from rabbits which has been found quite effectual, and is highly recommended by persons who have tried it in this state, is to kill a rabbit, cut it open and rub the trunks of the trees with its fresh insides. This is said to be effective in protecting them from the attacks of rabbits for a few weeks, but must be repeated occasionally. However, this will not protect the trees from the attacks of mice. Smearing the trees with grease, blood or the offal from butcherings will have the same effect.

Rabbits may also be poisoned by using pieces of apples and strychnine or arsenic, but it is doubtful if this is a desirable method, in view of the fact that dogs, cats and other creatures may eat them and be killed in this way. They are easily trapped by any ordinary trap and the old-fashioned dead-fall, baited with apple or a small ear of corn, is an easy means of catching them. The noose and spring pole, box trap and spring trip can also be used.

It should be remembered that the mice gnaw the trees beneath the snow, and the rabbits gnaw them above it. Packing the snow around the trees will do no good toward preventing the destruction by rabbits. the trees should be watched during the winter and as soon as any evidences of their being destroyed by these rodents are observed, practical measures should be applied. One of the practical means of saving trees is to cut off small branches, such as should be pruned away, and throw them upon the ground for the mice and rabbits to eat. In this way they may be fed without forcing them to gnaw the trunks of the trees.

Agriculture in the Public Schools.

Much has been said at our farmers' institutes during the past few years about the propriety of introducing instruction in elementary agriculture and horticulture into the public schools. For three winters one session of each institute held in Pennsylvania was devoted to this subject, but so far it has ended in talk. The principal objection seems to be that there are no teachers, or at least, very few who are capable of taking up this subject. Missouri has shown how this objection may be overcome. For five years the Missouri school law has recognized it as part of the course of study by requiring applicants for a first grade certificate to be examined in a group of agricultural subjects. The state normal schools have had departments of agriculture and nature study. Instruction was given to the teachers at the county institutes by members of the agricultural college faculty, and, although no attempt has been made to teach the subject thoroughly, much has been done to awaken an interest, and a great deal of information has been imparted to the pupils.

This plan was strongly urged in Pennsylvania several years ago by the writer at a number of farmers' institutes which he attended, and was indorsed by the county superintendents of a number of counties. Resolutions were passed favoring the adoption of the plan, and there it ended. Missouri has been working for fifteen years along this line and has now gotten fairly started. Pennsylvania would do well to fall in line, and by taking advantage of Missouri's experience would not need fifteen years to reach the same degree of advancement.

G. H.

Honey Bees Cutting Grapes.

At the meeting of the Pennsylvania State Bee Keepers Association in Harrisburg on December 7, the much-mooted question of bees cutting grapes was brought up. Hon. N. E. France, general manager of the National Bee Keepers' Association, explained that the mandibles of the honey bee are not made for cutting, but rather for moulding; but the yellow jacket is furnished with cutters, and it is this insect that cuts the grapes and afterward the bee sucks the juice. That in order to prove his point he had taken bunches of ripe grapes and hung them inside the hives of bees that were hungry and they remained untouched for several days. Then he pierced several grapes with a needle and immediately the bees attacked them and sucked all the juice; that he had tried this same experiment at different times on the grounds of men who were sure the bees were cutting their grapes, and with the same result every time, proving conclusively, not only to his own satisfaction, but to that of the fruit-growers, that the bees would never touch a grape unless a small hole had been made in the skin previously. G. H.

Fall Setting of Strawberry Plants.

Spring planting of strawberries which requires work and has the use of one's land a whole year without profit, may be a good system in dry summers, but in wet summers like 1904, and the last three, give me late summer and fall planting. My spring plants were put on clean ground, but rains came on and made it too wet to go upon with horse and cultivator, but weeds grew like magic. Being busy with more pressing work, they had to be hoed or given to the weeds. Not counting other crops, which would have to be neglected, it would cost more than the berries would bring, and so much of the spring planting must be plowed under. Now, let us look at the August planting. Early potatoes and bean vines were turned under August 1. First runners were set in rows three inches apart August 6 and would have made matted rows before frost, i fallowed to do so.

A. T. GOLDSBOROUGH,
Washington, D. C.

Nine Nations

Now Use Liquozone. Won't You Try It=Free?

Liquozone is now used almost the world over. Peoples half-the-world away from you are curing their ills by it. And so are people next door to you—your neighbors, your friends. Won't you ask some of them what Liquozone is doing? Then ask us for a bottle to try?

Liquozone is so new that few people realize how many millions are using it. One year ago it was almost unknown in America. Now nearly half the people you meet—wherever you are—know some one whom Liquozone has cured.

Don't you realize that a product which has spread like this must have remarkable merit? We have never asked a soul to buy Liquozone. We have published no testimonials, no evidence of cures. We have only asked the sick to let us buy the first bottle—to let the product itself show what it could do. Those sick ones told others, and the others told others. That is how it has spread.

Won't you do as those millions have done? If you are still using medicine for what medicine cannot cure, won't you learn what others know about Liquozone? Won't you let us pay the cost of your test?

Not a Medicine.

Liquozone is not a medicine. It is not made by compounding acids or drugs, nor is there any alcohol in it. Its virtues are derived solely from gas—largely oxygen gas—by a process requiring immense apparatus and 14 days' time. Each cubic inch of Liquozone requires the use of 1,250 cubic inches of the gas.

Liquozone is the result of a process, which, for more than 20 years, has been the constant subject of scientific and chemical research. The main result is to get into a liquid, and thus into the blood, a powerful, yet harmless, germicide. Another result is to create a vitalizing tonic with which no other known product can compare.

Acts Like Oxygen

The great value of Liquozone lies in the fact that it does what oxygen does. Oxygen is the vital part of air, the very source of vitality, the most essential element of life. It is the blood food, the nerve food, the scavenger of the blood. It is oxygen that turns the blue blood to red in the lungs; that eliminates the waste tissue and builds up the new. Too little oxygen always causes lack of vitality. An excess of it gives strength to every function of Nature.

Oxygen is also a germicide. The reason is that germs are vegetables; and an excess of oxygen—the very life of an animal—is deadly to vegetable matter.

Liquozone acts like oxygen. But it does more than oxygen, because it is stable. It carries its virtues into the blood to go wherever the blood goes. It is a remarkable tonic—the best thing in the world for you. Yet it is a germicide so certain that we publish on every bottle an offer of $1,000 for a disease germ that it cannot kill.

The discoverer of Liquozone has solved the great problem of killing germs in the body, without killing the tissues, too. And there is no other way. Any drug that kills germs is a poison; and it cannot be taken internally. Liquozone is the only way that any man knows to end the cause of any germ disease.

We Paid $100,000

For the American rights to Liquozone; and the British rights sold for a like sum. That is the highest price ever paid for similar rights on any scientific discovery.

Before making this purchase, we tested the product for two years, through physicians and hospitals, in this country and others. We employed it in all germ diseases; in thousands of the most difficult cases obtainable. We proved that in germ troubles it did what all the skill in the world could not accomplish without it.

Now Liquozone is more widely employed than any medicine ever was. It is more widely prescribed by the better physicians. And no one can doubt that it is doing more for sick humanity than all the drugs in use combined.

Germ Diseases.

These are the known germ diseases; all due to germs, or the poisons which germs create. These are the diseases to which medicine does not apply, for drugs cannot kill inside germs.

All that medicine can do for these troubles is to act as a tonic, aiding Nature to overcome the germs. But those results are indirect and uncertain. They depend on the patient's condition. When drugs were prescribed for these troubles, nobody knew of germs. Now every good physician knows that they call for a germicide.

Liquozone alone can destroy the cause of these troubles. It goes wherever the blood goes. No germ can escape it, and we have found no disease germ which can resist it. Discases which have resisted medicine for years yield at once to Liquozone, and it cures diseases which medicine never cures. In any stage of any disease in this list, the results are so certain that we will gladly send to any patient who asks it an absolute guaranty.

Asthma
Abscess—Anaemia
Bronchitis
Blood Poison
Bright's Disease
Bowel Troubles
Coughs—Colds
Consumption
Colic—Cronp
Constipation
Catarrh—Cancer
Dysentry—Diarrhea
Dandruff—Dropsy
Dyspepsia
Eczema—Erysipelas
Fevers—Gall Stones
Hay Fevers—Influenza
Kidney Diseases
La Grippe
Leucorrhea
Liver Troubles
Malaria—Neuralgia
Many Bheat Troubles
Piles—Pneumonia
Pleurisy—Quinsy
Rheumatism
Scrofula—Syphilis
Skin Diseases
Stomach Troubles
Throat Troubles
Tuberculosis
Tumors—Ulcers
Goitre—Gout
Gonorrhea—Gleet
Varicocele
Women's Diseases

All diseases that begin with fevers—all inflammation—all catarrh—all contagious diseases—all the results of impure poisoned blood.

In nervous debility Liquizone acts as a vita er accomplishing what no drugs can do.

50c Bottle Free.

If you need Liquozone, and have never used it, please send us the coupon below. We will then send you an order on a local druggist for a full-sized bottle—a 50c bottle—and will pay the druggist ourselves for it. This applies only to the first bottle, of course—to those who have never used it.

The acceptance of this offer places you under no obligations. We simply wish to convince you; to let the product itself show you what it can do. Then you can judge by results as to whether you wish to continue.

This offer itself should convince you that Liquozone does as we claim. We would certainly not buy a bottle and give it to you, if there was any doubt of results. You want these results; you want to be well and to keep well. Then be fair enough to yourself to accept our offer today. Let us show you, at our expense, what this wonderful product means to you.

Liquozone costs 50c and $1.

CUT OUT THIS COUPON

for this offer may not appear again. Fill out the blanks and mail it to The Liquozone Company, 458-464 Wabash Ave., Chicago.

My disease is .....
I have never tried Liquozone, but if you will supply me a 50c bottle free I will take it.

.....

.....

.....

M 110. Give full address—write plainly.

Any physician or hospital not yet using Liquozoen will be gladly supplied for a test.

Keep Orchards Off Low Ground.

Will you kindly advise me which would be better in starting an orchard, to plant the trees in low meadow land or to plant the trees in high land. I contemplate starting a new orchard, and I thought that by planting the trees in my meadow, and each year plowing the ground underneath the trees, even if I don't plant anything in it, they would thrive better than by planting on higher ground or on a hillside.—W. M. W., Spring Forge, Pa.

Each year competition is becoming more severe in the apple market; each year the margin of profit is growing smaller. The apple tree that is planted this fall will not come into profitable bearing for ten years, therefore, it is of the utmost importance that in planting a commercial orchard we plant the right tree in the right place, so as to gain all the advantage possible from this source. While it is true that an apple tree will grow and will bear some fruit in almost any soil, the best results are obtained when the tree is planted in a deep, well-drained soil. Whatever the other characteristics may be, it should be deep to allow extension of roots, well drained, either naturally or artificially to prevent injury from stagnant water below the surface, and firm, not peaty or spongy, to preclude injury or destruction from frosts; stones and boulders are not injurious, but on the contrary rather a benefit, the loose stones on the surface serve as a mulch and retain moisture, and the roots find their way around and under the boulders, and then secure a good supply of moisture; for this reason many stony hillsides which cannot be utilized in any other way, furnish excellent sites for orchards. Fruit grown on low land does not have as high color, as rich flavor or as good keeping qualities as that grown on the hillside; it is more liable to the attacks of fungus which injure both foliage and fruit, and is more subject to injury from late frost, and from severe winter weather. We would most emphatically advise against planting apple or any other fruit trees in your meadow. G. H.

Peach Trees in Old Apple Orchard.

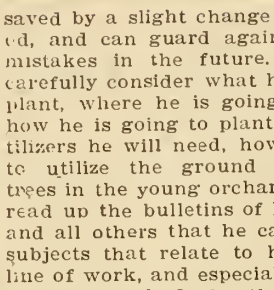
(1) What have you to say about an old apple orchard? Do you think peaches will do there? The apple trees are cut down. (2) What do you have to say about mushrooms growing under peach trees? Good or no good, any harm to tree? I was told that the peach would show blight. Is that so? (3) Is lime good for a peach orchard? (4) Would tobacco stems be any good to peach trees as a fertilizer?—R. G. B., Schwendsville, Pa.

Answer: (1) If the location is right, the soil deep and well drained, the fact that apple trees have grown on it for a number of years will not in itself unfit it for growing peaches. But the practice of our fathers in the old orchards in the East has been to trim the apple trees high so the ground could be cropped under the trees, and in addition to the crop of apples have taken crops of wheat, corn and grass off of the ground without the use of fertilizers, and for this reason the soil of most old apple orchards has about all the available potash and phosphoric acid taken out of it. Therefore, if you propose to plant peaches, the ground should be thoroughly and deeply plowed, and be treated to a heavy dressing of fertilizer rich in these two substances. (2) No good, very decidedly; the soil conditions that will produce good mushrooms, will also encourage the growth of fungus on the roots of your trees which will cause them to sicken and die. (3) Whenever land shows that it needs lime it should have it, whether planted in orchard or farm crops. Ordinary sandy loam will be benefited by an application of twenty-five or thirty bushels of stone lime per acre every six or eight years. (4) Tobacco stems are rich in potash, and for this reason are valuable as a fertilizer for peach trees. G. H.

Hints for January.

This is the month when the fruit-grower has more leisure than at any other season of the year, and he should use a portion of this leisure in carefully laying his plans for the coming year. By a review of his last year's work, he will see a great many places where money might have been saved by a slight change in his method, and can guard against the same mistakes in the future. He should carefully consider what he is going to plant, where he is going to plant it, how he is going to plant it, what fertilizers he will need, how he is going to utilize the ground between the trees in the young orchard. He should read up the bulletins of his own state and all others that he can get, on all subjects that relate to his particular line of work, and especially those that treat on methods for the suppression of San Jose scali. He should decide definitely how he is going to fight this pest, make an estimate of spraying materials needed for this and other insects and fungoid diseases, and by correspondence with dealers secure the lowest rates by purchasing all the material necessary in one order for spot cash. On cold, stormy days, when he cannot work out of doors, he should overhaul the spraying apparatus and replace all defective parts so that pump, nozzles and hose are in perfect working order and see that he has a sufficient number of good sound empty barrels on hand for mixing the material. He should prepare a list of all trees, seeds and plants needed, and have his work carefully mapped out and an estimate of expense drawn up, so that when actual work begins he can take it up systematically and have everything done at the proper time.

This is also the season when the impecunious sharper is most active working the farmer, and so we take this occasion to urge our readers to go slow in buying anything from strangers, who represent business firms in distant states. If they have not already called on you they will very soon be offering you the borer proof peach, the blight proof pear, the curculio proof plum. They will talk learnedly about the superiority of whole root grafts over piece root grafts, and show you sections of diseased apple wood—young trees sawed through lengthwise—to prove that their particular nursery is the only one that grows trees that will live long enough to bear fruit. They will show you fruit put up in glass jars that magnify the size wonderfully, and pictures of impossible new fruits. For the benefit of those who may be tempted to believe these wonderful fairy tales we want to say that there is no borer proof peach, there is no blight proof pear, there is no curculio proof plum, although there are some of the Japan varieties that are so very acid that the egg of the curculio seldom matures in them, but they are not desirable market varieties, and are not as valuable as the more common Japan plums, such as Abundance, Burbank, etc.; and when they talk about whole roots and piece roots remember that all of our best nurserymen use practically the same methods in growing their stock, so that if you want whole root grafts, or budded, or top worked trees, you are not confined to anyone nursery, but can get any of these from any of the nurseries within your own state, or an adjoining state. The safest plan, when approached by a tree agent who is a perfect stranger to you, and who claims to represent a nursery in a distant state, if you really want any of the stock he offers, is to take his card and write to the firm he claims to represent, asking them to price your order and give the agent credit for it. In about three cases out of five you will find they never heard of the man, but they will send what you order and treat your fairly. If the agent is doing an honest business he will not be injured in the least, as your order will be placed to his credit and he will get his commission the same as though you had given your order direct to him. As a rule, however, it is best for each grower to make out his own list, that do well in his own neighborhood, selecting those standard market sorts and send the order to the nearest nurseryman in his own state, and it is always best to deal direct with the nursery, unless the agent is a neighbor whom you know to be honest and who goes to the nursery and selects the trees to fill the orders he has taken. G. H.



THE GREAT HOUSEHOLD REMEDY SWANSON'S "5-DROPS"

A Bottle Sent ABSOLUTELY FREE to Any Reader

CUT OUT OUR EXTRA-FREE OFFER in this advertisement and send direct to Swanson Rheumatic Cure Co., with your name and address, and a trial bottle of "5-DROPS" will be mailed to you at once, FREE, postpaid.

RHEUMATISM, KIDNEY TROUBLE

Lumbago, Sciatica, Neuralgia, La Grippe, Asthma, Catarrh, Coughs, Colds, Dyspepsia, Indigestion, Croup, Neuralgic Headache, Earache, Heart Weakness, Creeping Numbness, Eczema and Scrofula, can be cured by the use of Swanson's "5-DROPS."

SWANSON'S "5-DROPS" **is an internal and external remedy,** that gives quick relief and permanently cures Rheumatism, Lumbago, Sciatica and Neuralgia. "5-DROPS" taken internally will dissolve the poisonous acid, remove it from the system and cleanse the blood of all impurities. An application of "5-DROPS" to the afflicted parts will stop the pains almost instantly, while the cause of the disease is being surely removed by its internal use. You, who are suffering from Liver Complaint or Kidney Trouble, will find a positive cure in "5-DROPS." It is the most effectual remedy ever discovered for these diseases. A single dose will give immediate results. It goes direct to the spot. It keeps the liver-cells properly at work. It restores the kidneys to their normal condition by removing the acids which are the cause of the trouble. It is the most successful medicine for the cure of diseases of the Blood, Kidneys and Liver that has ever been produced.

To Cure Colds, Coughs, La Grippe and Bronchitis use "5-DROPS." It cures La Grippe by immediately destroying the germs which cause the disease. "5-DROPS" taken at bedtime and in the morning before breakfast will relieve and cure the most severe cough. It will break up a cold quicker than any other medicine.

CURED BY SWANSON'S "5-DROPS"

MRS. J. H. LACKEY, West Wardsboro, Vt., writes: "For ten years my feet were so swollen that every time I stepped I was in misery. Your "5-DROPS" has cured me. My husband is taking it for Sciatia Rheumatism and it is helping him."

DOCTOR C. L. GATES, Hancock., Minn, writes: "A little girl here had such a weak back caused by Rheumatism and Kidney trouble that she could not stand on her feet. The moment they put her down on the floor she would scream with pains. I treated her with "5-DROPS," and today she runs around as well and happy as can be. I prescribe "5-DROPS" for my patients and use it in my practice."

MARY CARBAUGH, Black Gap, Pa., writes: "I suffered terribly with kidney trouble for years, and after using less than two bottles of "5-DROPS" I am now entirely well, and I give "5-DROPS" the praise for my cure. I could not find anything that would give me the slightest relief until I tried this remedy, and I recommend it to everybody as a permanent cure for Kidney Disease."

NOTE—Large Size Bottle "5-DROPS" (300 Doses) $1.00. If "5-DROPS" is not obtainable in your town, order from us direct and we will send it prepaid on receipt of price.

CUT THIS OUT—No. 90000

EXTRA—FREE

In addition to sending free a trial bottle of "5-DROPS" we will for the next 30 days include, absolutely free to any person who is sick our

ONE DOLLAR COUPON

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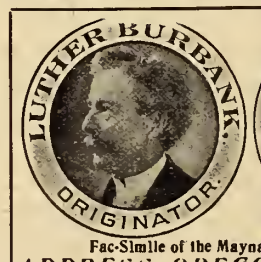

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Fruit Growers send 25 cents for 6 months trial subscription to THE PEACH GROWER, Savannah, Ga. It is a practical paper for growers of all kinds of fruit, of peculiar interest to peach growers. Published in the greatest peach state in the world, it publishes much matter of interest to peach growers everywhere.

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THE RANCH, Seattle, Washington.

Missouri Valley Horticultural Society.

The December meeting of the Missouri Valley Horticultural Society was held at the club rooms of the Coates House in Kansas City.

The chair called on Mr. M. Butterfield, now of Farmington, Mo., but one of the oldest members, to give an account of his successes and failures during the past year.

Mr. Butterfield said in part: "Mr. President, in coming into this meeting, I feel I am coming home. I have long been associated with you; this is indeed my Alma Mater. The most I ever learned of horticulture I learned here. Any success I may have had in fruit culture is due largely to my associations here. Many changes have taken place since I first became a member of the dear old Missouri Valley Society. The old members with whom I used to associate are missing; new faces and new blood are at the helm. The society, however, still lives and is doing good work.

"I am, as you know, way down in southeastern Missouri. There I commenced anew in a cornfield, and since going there have had both success and failures. The past season I harvested as much as $750.00 from an acre of land that at the time I took charge was low in price and not very productive. This year I had a good crop of strawberries and a splendid crop of peaches, realizing the above amount from my peaches.

"I believe, from my experience, that southeastern Missouri will eventually become a great fruit section."

The Chair: "The Yorks shown by Mr. Lowmiller were as fine as I ever saw. To what do you attribute your success?"

Lowmiller: "I can't tell. My trees seemed to hold their foliage, while just across the road the orchard shed their leaves in August."

This brought out a discussion on the late cultivation of orchards, both pro and con. Mr. Butterfield said that while this society had long since tabooed politics and pear blight, he would have to make a departure from the rules, as he must say that he noticed an orchard of Keiffer pears, a larger part of which was cultivated, while the party, at his solicitation, allowed two acres to be unplowed. The facts are that every tree on the part thus cultivated has long since succumbed, while on the uncultivated all are still doing business, having had a splendid crop the past season. He further said that the apple was differently constituted, and results might be different.

Miss Beard asked if he ever used salt on his pear trees.

Mr. B.: "Yes, I am greatly in favor of salt both for pear and quince."

"How do you apply?" was asked.

"I dig a trench around the tree 18 inches from the tree, and scatter one quart of salt to the tree. Mr. Compson uses salt on his quince, and always has good fruit."

We remarked that recently we visited Mr. Reid of Reid's Station, Ill., and found him raising quinces successfully by grafting into the red haw.

Mr. Espenlaub: "Why graft in the red haw? What is gained by it?"

"The red haw is immune from the borer, while the quince is the most subject to its ravages of any of our trees. Then the red haw is a nuisance, keeping up the supply of codling moth. Now, if these trees are top-grafted to quince these conditions are changed. The codling moth is reduced to the minimum, while you abolish the digging for borers."

The election of officers resulted as follows: G. W. Holsinger, president; W. G. Gano, vice president; Mrs. Harriet Chandler, secretary; G. F. Espenlaub, treasurer; executive committee, G. L. Holsinger, Dan Lowmiller, A. W. Wilson, Mrs. Asa Chandler and Olive W. Holsinger.

FRANK HOLSINGER.

Minnesota Horticulturists meet.

The Minnesota State Horticultural Society is the largest of its kind in the country, having more than 1,800 members. The annual meeting in December was a good one, with good show of fruit. The society encourages the growing of seedling apples, and has a reward of $1,000 for a new apple which is possessed of certain specifications. Mr. Frank Yahnke has a seedling which is entered for this prize, and this variety is now being tested over the state to prove its worth.

A feature of the meetings of the society every year is a banquet of the members, and this social feature has helped to increase the attendance very perceptibly. At the meeting last month this feature was a great success.

In his annual address President Wedge offered suggestions for the good of the society. The state was congratulated upon the showing made at St. Louis, where Minnesota fruits won a grand prize, and five gold, thirty-eight silver and thirty-nine bronze medals.

While much of the discussion of the members of the Minnesota society is interesting only to those who are living in the same climate, many points brought out will be read with interest by all Fruit-Growers readers. Particular interest attaches to the discussion of seedling fruits. H. M. Lyman, T. E. Perkins, Frank Yahnke and a number of others are growing seedlings, in an endeavor to get something better for that country than has been produced up to the present time. In producing these seedlings the most favorable varieties have been found to be Wealthy and Malinda. These sorts have exerted a marked influence on their progeny, and the most promising seedlings have been produced from these. It is believed that best results will be secured by choosing seed from the hardiest varieties, crossed by some of the less hardy, but more desirable, varieties. If hardy stocks are top-worked with several branches of the less hardy sorts, perfect cross-pollination will be secured.

It was stated that after the seedlings have been grown, even before they are old enough to bear, one may form a good idea of the character of many of them, especially as to hardiness. Those which mature their terminal buds early in the fall are hardier, as a rule, than those which retain their foliage until later in the season.

The discussion of the subject of orcharding was interesting. It has been proven that apples can be profitably raised in Minnesota if proper methods are followed. Trees with good root systems should be planted. On clay soils it was recommended to plant the trees only a few inches deeper than trees stood in nursery row, but in the lighter prairie soils many growers plant as deep as eighteen inches to two feet. Trees should be well cultivated, and should be protected by windbreak. Soil which is left bare in winter will freeze to a greater depth than that which is covered with a mulch, and therefore it is best to have a cover crop on the ground during the winter, or to mulch the trees with barnyard manure.

Figures were submitted to prove that it does pay to raise apples in Minnesota: "A good 3-year-old apple tree may be considered worth 75 cents when planted, and an expenditure of 25 cents a year should care for it. By the time it comes into bearing it will have increased in value to at least $5, and also increases the value of the property many times its cost. From a financial standpoint, money is not worth over 6 per cent, and after the tree comes in bearing it soon pays back both capital and interest and is giving the owner pleasure as well as profit.

"At times this fall, in some markets; early apples could hardly be given away, but after the glut cleared up those who had held their fruit in storage realized well and found a ready market for all they could supply. Mr. Kenny of Morristown stored his Wealthy in bushel boxes in cellars, selling them soon after for 80 cents per bushel—boxes returned. Patten & Son, Charles City, Ia., realized about $300 per acre from their Duchess—shipping them direct to the Twin City market from the orchard. J. A. Howard, Hammond, Minn., has a cold storage of his own construction in which he held several hundred bushels. The Duchess selling $2.25 per barrel when the market cleared up and later varieties for $3.25. His cold storage is 18x30 and ten-foot posts. It required but one filling of ice while the Duchess were in and after that by opening the doors on cool nights and closing mornings it was kept at about 40 degrees, which he considers about right for shipping. For commercial purposes the Duchess, Wealthy, Okabena, Patten's Greening and Northwestern Greening seem to be the unanimous choice as to the best varieties to plant."

Hardy Blizzard Belt

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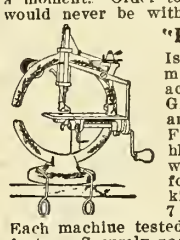

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Fruit and Poultry

The Industries Go Well Together

By T. E. Orr, Beaver, Pa.

Certainly we need not argue at length the possibility of producing both fruit and poultry on the same grounds. Everyone who has given the subject intelligent consideration admits the possibility, it is the advisability of doing so that comes up for argument.

The Objections.

Some "reasons why not," always present themselves when considering any new project, and in this case the following are more worthy of attention :

1. "I'm making a success of the fruit. I'd better stick to that one thing and continue to be a specialist." The same argument would make you a producer of just one variety of apples, devoting all your area, time and attention to the one variety, even though your work of picking and marketing must be done in a single fortnight, and you and your help remain idle the remainder of the season when you might be picking and marketing a half-dozen other varieties.

2. "I have my fruit houses, my packing sheds and my storage cellars. I don't wish to clutter them up with chickens."

Don't imagine for a moment that the writer of this article will advise you to put hens into your cold storage houses, or that he will urge you to run incubators in your fruit cellars. When he comes to outlining the subject he will urge the erection of additional houses, convenient and comfortable, but of small cost, for the exclusive use of the poultry.

3. "I fear that attention to the fowls will be demanded at the very time that the fruit most needs it and the fruit will be sadly neglected."

In this series of articles the writer will not be urging poultry breeders to raise fruit, although he does both preach and practice that doctrine. He presumes that his readers are already fruit-growers and he will simply give some reasons why they should add the poultry. In no case will he advise that the poultry be substituted for the fruit .

4. "I fear the presence of the poultry will damage my trees or my fruit."

The same objection was formerly raised to bees—"spoil the blossoms and puncture the fruit." No one thinks of such a thing now. Producers of fruits are urging apiarists to establish colonies of bees on their grounds, so they may have the recognized advantage of the presence of the bees. We shall try to prove that the hen is more of an advantage to the fruit grower than is the bee and that she pays better

5. "I do not know anything about the poultry business and am too old to learn."

If both these statements are strictly true, don't take time to read these articles. We wish to be candid with out any false ideas. The poultry business must be learned. To make it a success requires as much ability as does the fruit business. To the man past middle life who knows nothing of animals, who has no knowledge of the habits of the hen and who does not take naturally to a close study of details, we say "keep out of the poultry business."

Who May Enter.

1. The man (or woman) who has a natural love for animal life, who can find as much pleasure in noticing the peculiar actions of a little chick as he will in the day-by-day development of a choice variety of fruit.

2. The man who feels that he has some time especially in the fall, winter and early spring that he could devote to some side line without interfering with his main business. The busiest time with the fruit is when the poultry requires the least attention.

3. The man who has built up a private retail fruit trade, covering many months of the year. The very people who want choice fruit are the people who most want choice poultry and fresh eggs, and they are the people who have the money to pay for what they want. More and more in both these industries are the middle man being eliminated. The man who has learned how to put up his fruit in neat attractive packages is the very man who will so handle his eggs as that people will buy whether they need them or not.

Advantages of the Combination.

1. The chickens destroy insect enemies of the fruit. With all your spraying, and trapping, the insects do get past you. The hens may not get all that remain, but they and the little chickens will get many of them. Hens like fruit, and hens in an orchard will eat the unmature fruits as they fall and in doing so they kill off the worms that made these fruits fall prematurely. Just watch a flock of little chicks in an orchard! They seem to be constantly chasing insects, many of them so small we can scarcely see them; but we know when a chick catches one of them by the chick's self-satisfied manner. That chick has probably saved several apples. And it is good for the chick.

2. The poultry destroy the root enemies of the trees. Most enemies of fruit pass through three stages of life, and one of these is generally a worm, and many of these worms burrow in the ground under the trees. Just dig up the old sods a little under a fruit tree, scatter a little millet seed there to get them started and see how thoroughly the hens will harrow that ground. And they do this too without damaging the rootlets as you often do by a thorough cultivation. Many a fruit grower fails to cultivate his orchard as he should lest he peel the trunks of the trees or unduly cut the roots. Just a few strokes here and there with a pick or a strong fork, followed by scattering small seeds, and the hens will do his cultivation just right.

3. The poultry enrich the ground. The properly managed hen is a busy creature. She seems happiest when working hardest for something small. During these working hours her droppings, so rich in the needed nitrogen, are scattered just where they will do the most good. The fertilizing value of the droppings of a well-fed hen (and when we come to speak of feeding, we shall advocate liberal feeding) are worth much to the truck gardener or orcharist. For good hen droppings we much prefer to pay one dollar per barrel than to buy commercial fertilizers at market prices.

If two trees of same size are planted one in the poultry run and the other not, the difference in the growth and vigor can readily be noted at the end of the first season.

One of the chief advantages of this combination is the benefit derived by the poultry and their greatest advantage is not found in the fruits or insects they pick up, but in the comfort they get in the shade. We have observed many times and do not hesitate to repeat it here—"fowls suffer as much from heat in summer as they do from cold in winter." All the larger houses of the writer were built in orchards, so there would be two or more trees in each yard, and in all our extensions we have set out young fruit trees in the runs. The pleasure of a hen in digging, scratching and wallowing in the fine cool soil under a tree is only surpassed by the pleasure of a brood of half-grown chicks when allowed to do the same.

How To Do It.

In our next article we shall proceed to describe some neat low-cost houses for combining fruit and poultry, these houses as we have said to be used exclusively by the poultry.

A word of caution: While we shall treat on houses in advance of breeding and feeding, we urge our readers not to build houses in the winter for immediate use. The results either in the human family or the hen family are usually disastrous. Build houses in the summer so they can dry out thoroughly.

If you wish to start in poultry this spring start in a small way by procuring eggs for hatching. This is really the best way to begin. Hints on this subject will be given in an early issue but start now in only a small way and get your experience slowly.

It need hardly be added here that you should of course start with one of the pure-bred varieties. Take advantage of what others have done in developing varieties for special purposes. Study the subject, study your market and decide what your special purpose shall be—eggs, breeders or roasters—then select the variety best suited to your purpose or to the combination you propose to make. Take up only one variety.

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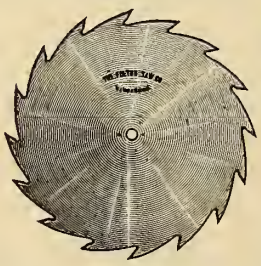

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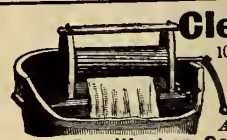

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THIS MILL GRINDS RICE, CORN, WHEAT, RYE, COFFEE, SPICES, ETC.
Makes best corn meal and Graham flour. Will grind as fine or coarse as desired. Just the thing for Poultry Raisers. Circulars and testimonials free.
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Strawberries at Troupe, Texas.

The Texas Experiment Station has published a summary of results of tests of strawberries which were made at the Troupe station, which are interesting to fruit-growers in the southern part of the country. The tests covered a variety test, as to growth and productiveness, and also shipping tests, to determine the shipping qualities of the different sorts. The land used consists of sand and fine clay washed from a neighboring hill. It is of a dark gray color and is commonly called "made land," being carried in by the washing of the higher ground. Being of a fertile nature, no fertilizer was applied except a light dressing of dissolved bone a few weeks before fruiting. The soil on which the experiment was located drains well, hence it was not considered necessary to plant on beds.

Cultivation—Level culture with five and fourteen-toothed cultivators was given throughout the growing period both of the first and second seasons. Occasional work with the hand hoe was necessary as the strawberry but weakly resists the encroachments of weeds and grass and while young needs frequent assistance from the gardener in its battle for existence. As a rule straw mulches rather than cultivation are depended on during the spring of the second season but owing to the wet, cold and packed condition of the soil in 1903 it was thought advisable to use the five-tooth cultivator, and from February until the plants were fruiting frequent cultivation was given. This treatment caused some sandy berries and under ordinary circumstances should not be practiced. The straw mulch should be the main dependence for keeping down weeds and retaining moisture.

The summary of the shipping test will prove interesting to shippers everywhere, and the following results are reported:

1. For distant market Excelsior and Lady Thompson for early, and Aroma and Haverland for mid-season are the varieties of proven value.

2. For distant market the Klondyke for early offers great promise and is worthy of extensive trial by commercial growers. For late market the Barton's Eclipse is a promising variety, but should be tested further before given extensive trial.

3. For the home table Johnson's Early and Darling for early, Haverland, Aroma and William Belt for medium to late.

For strawberry-growing in the Southwest, the report gives the following suggestions as to soil, preparation, etc.:

Perhaps the best preparation for the strawberry field is to turn under deeply in fall a heavy crop of cow peas. Barn yard manure and wood ashes may be applied any time during the winter and harrowed in. Plow again early in spring and harrow until perfectly mellow. Continue work with the harrow once a week until planting. Early in March the plants should be set about 18 inches apart in 3½ foot rows.

None but young plants which have never borne a crop should be used in the new field. All dry stems and old leaves should be removed leaving only one to three of the small young leaves about the center. In case the plants are obtained from a distance and are received in a poor condition they should be taken from the bundles and heeled in with roots well spread in long shallow trenches. Sprinkle lightly once a day and in a short time their condition will indicate which will likely endure field planting. Great loss of time in setting worthless plants may be saved in this way.

The success attendant upon obtaining a full stand depends much upon the manner of setting. The strawberry cannot withstand the rough treatment commonly given cabbage when transplanted. The plants must not be put over a quarter inch deeper than they were in their original situation, otherwise, the terminal buds are liable to be covered with earth and thus injured or killed. Plants set too high suffer when the ground settles, as this leaves their roots and crowns exposed and dried; dead plants quickly result. Another apparently small but essentially important point is care to spread the roots out thinly so that their entire surface may be against the soil which should be opened for them by the use of a spade or a flat dibber.

The cultivation throughout the summer should be shallow and thorough and the rows must be kept free of grass and weeds by means of hand labor. When the runners form it is sometimes necessary to assist them to establish the young plants in their proper places but after sufficient plants have been grown the subsequent runners should be kept down by cutting off with a hoe or a rolling cutter attached to the cultivator.

Late in the fall after all growth has stopped it is desirable to cover the rows with a mulch of clean straw or pine needles. This should be left in place until the middle can be cultivated in February after which the mulch may be raked off the rows to cover the middles and more straw added if necessary to make a blanket deep enough to retain moisture and prevent weed growth.

If the soil is reasonably rich and has been prepared in the manner suggested, no further fertilization is necessary, but failing this it is desirable to work in 500 pounds of acid phosphate and 50 bushels of ashes per acre between the rows during the February cultivation before the mulch is raked from the rows.

In harvesting the berries should be picked by passing the thumb a forefinger over the berry and snipping off the stem about a half inch from the fruit. Due care must be taken to keep the fruit of an even degree of ripeness, the degree being dependent on whether the fruit is for home or distant market.

It is almost needless to say that harvesting and marketing a large crop requires management and business ability of a high order. As in all new enterprises it will pay the novice not to attempt very extensive operations the first year.

As to expenses and profits, it is variously estimated that the cost of production is from $35.00 to $77.00 per acre and basing returns on the prices of the year at Troupe, the average there being $2.00 per 24-qt. crate, f. o. b., one can see that strawberry culture is fairly remunerative. However, it is more safe to consider returns on the basis of $1.50 per crate f. o. b. your station, as that figure would more often represent the average return of the season.

Of the diseases attacking the strawberry the leaf spot (Sphaerella fragarioe) is the most serious. It is almost impossible to grow certain varieties on account of this fungus as it attacks both leaves and fruit stalks, girdling the latter and causing the spray of young fruit to wither. In setting new beds remove from plants all spotted leaves and dry stems and if convenient spray with Bordeaux mixture once or twice within a few weeks after planting. In renovating old beds the practice of burning over is recommended. This is desirable unless the mulch and old plants are very dry in which case there is likelihood of killing them. Choose a time when soil is damp and leaves and mulch dry enough to burn slowly. When the young leaves push forth supplement the burning by thoroughly spraying with Bordeaux, after which serious difficulty is not probable.

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Held Dec. 17, 1903, at Minnesota Dairymen's Convention

Our Claim
We will place a Sharples Tubular beside any other separator and guarantee the Tubular to cut in half any record for clean skimming the other machine can make.

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Three competitors, each beaten hundreds of times singly, band together and enter a contest against the Sharples Tubular. Providing the "combine-of-three" are allowed to furnish the milk. Providing the "combine-of-three" dictate temperature of milk. Providing the "combine-of-three" dictate quantity of milk. Providing the "combine-of-three" run three machines, and if any one leaves less than double the fat of the Sharples Tubular they win. The "combine-of-three" select cold, hard-skimming cows' milk (62° to 70°) 200 lbs. at a run.

The Result

Sharples Tubular		.05
"The Combine of Three"	Alpha De Laval..	.175
	United States....	.125
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The report was signed by Robert Crickmore, Creamery Mgr.; A. W. Trow, Pres., Minn. Dairymen's Ass'n.; and E. J. Henry, Babcock Tester Expert, the judges mutually agreed upon. Write for complete report and catalog E-241.
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Cancer—How J. S. Parke, of Iola, Kan., Got Rid of One on His Temple—His Experience With a Combination of Oils.

Iola, Kan., March 7, 1904.
Dr. D. M. Bye Co., Indianapolis, Ind.
Dear Sirs—Please accept our sincere thanks for the personal interest you have taken in my case. We found your written instructions so plain and easy to understand that it was an easy task to apply your Treatment. And then we found the results just as you said they would be. Altogether it has been a very satisfactory job, and we are all delighted. There was scarcely any pain at all, every particle seems to be removed, and it is nicely healed over; a wonderful cure. While I am not writing this as a testimonial, I feel like I would like to tell all who are afflicted of such a good Treatment. So if you have the opportunity just tell them what a good cure it was, and I will gladly answer any who care to write to me about it. You understand, of course, that yours is not the first treatment I have heard of. There are hundreds of them, but yours is the first one I cared to trust. I have not expressed half of my appreciation of the cure, nor can I, but such works as yours done in a Christian spirit will surely receive a just recompense. With sincere wishes for your future success, allow me to remain, Yours very respectfully, J. D. PARKE.
No. 1103 East St.
There is absolutely no need of the knife or burning plasters, no need of pain or disfigurement. The Combination Oil Cure for cancers is soothing and balmy, safe and sure. Write for free book to the Office, Dr. D. M. Bye Co., Drawer 505, Dept. 65, Indianapolis, Ind.

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"The ear seed corn man."

Poultry Department

Selection and Care of Breeding Stock.

Do not think that when you have decided what breed you will keep that your work ends there, says J. S. Jeffrey, in a bulletin of the North Carolina State Board of Agriculture. There is as much variation, from a market standpoint, at least, in birds of the same breed as there is between different breeds. It is more necessary to select the individual than to select the breed. It is not sufficient that the cock to head your breeding pen be a Plymouth Rock or a Wyandotte, as there are plenty of both breeds that are not what they should be. The first consideration in any breeding animal is constitution. Look for a bird with a bright, full eye, short, well-curved beak, a short, stout neck, a broad back, full, well-rounded breast, and standing on good straight legs set well apart, and you will be almost certain to get a bird that is vigorous and strong.

Mate a male such as this with ten or twelve good females one year old that have been good layers as pullets and have always been healthy, showing no tendency to colds and roup; birds that have come through the molt quickly and in good condition, and they should produce chicks that will make a fair fight for existence. If you have not ten such hens as I describe, don't fill up the pen with inferior ones, but make the pen smaller. It is better to raise fewer and better. No matter how much room you have you have no room for sickly, puny chickens. Do not make the mistake so commonly made on farms of breeding from all the hens—good, bad and indifferent—but select only the best to breed from if it be only half a dozen hens. You will make more progress in this way in one year that you would in the hit or miss method in six.

But male and female should, if they have been properly cared for, be at their best for breeding purposes in their second year, but well-developed young fowls in good condition will make better breeders than older ones not in good condition.

The usual number of females to a male of the American class is eight to twelve. A great deal, however, depends on the individual male bird, as some will give good results with twenty or twenty-five hens where another bird will not give fertile eggs with twelve.

If it be necessary to use more hens than one male can attend to and only one yard is available, a good plan is to use the males on alternate days. The hens intended for breeders should not be forced for laying during the winter; many breeders indeed try to keep them from laying till eggs are wanted for hatching. Constant laying tells on the vitality of the hen, and eggs laid near the end of the laying period will not, as a rule, hatch well or give as strong, vigorous chicks as will the eggs first laid.

Eggs for Hatching—It is by no means too early to think about where the supply of eggs for hatching is to come from. We have at various times procured a shipment of 50 or 100 eggs, where we could get them at a comparatively low rate from a breeder of our acquaintance (an old neighbor), at 50 or 60 cents per dozen. But the chances to get eggs from a reliable breeder, at such rate, and of just the breed wanted, are very rare. In most cases we have to depend on our own flock to furnish the eggs, and it would not be a bad plan to have a separate pen of birds for breeders. The early pullets begin to lay in the fall or early winter, and we cannot expect to get eggs in sufficient quantity and A No. 1 in point of vitality from them. The best birds for breeding, no doubt, are hens in their second year. They have laid well the year before, but rested during the fore part of the winter, and are ready to produce just the right kind of eggs for breeding at about the time that we want them (March and April). This pen should never be overfed, and be given regular exercise daily. We would rather underfeed than overfeed. In this way we might get fewer eggs, but these would hatch well, and give us chicks of the strongest vitality.—Practical vitality.

Turkey Raising.

It was not a false alarm which reported the turkey crop as being short this season, for the supply ran short of the demand during the holiday season. Prices were high—so high, in fact, that many city families had to content themselves with some other bird on the dinner table.

At first sight, it would seem that there is much money to be made in growing turkeys. Yet how many farmers there are who used to raise a good-sized flock every year, who now raise perhaps enough to supply their own table on festive occasions. Turkeys are not easily raised, and there is no use saying they are. They are subject to disease, and require plenty of room. If one is so situated that the fowls can have plenty of room, and the season is favorable, with not too much wet weather at hatching time, turkey-raising may be made profitable. But don't be stam-

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get strong and healthy—gain steadily in weight, are chicks hatched in Reliable Incubators.

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provides automatically a constant current of odorless, warm air at a uniform temperature—chicks pip, hatch and thrive under its nature-like conditions. Send 10 cents and get our 20th annual catalog—full of poultry information.
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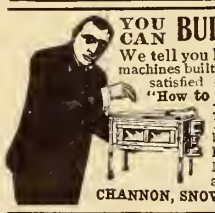
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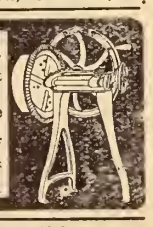
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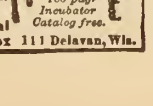
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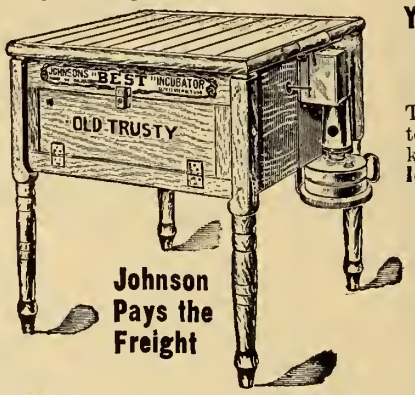

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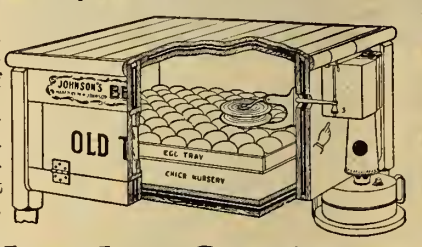
The more you know about it the better you like it. Johnson wants you to know all about it. **Take a square look at the cuts and read:**

Made of select California redwood and 12-oz. cold-rolled copper. Miller Safety Lamp, Taylor Bros.' guaranteed incubator thermometer, double doors, sides, bottom and top. There could be no better material or construction.

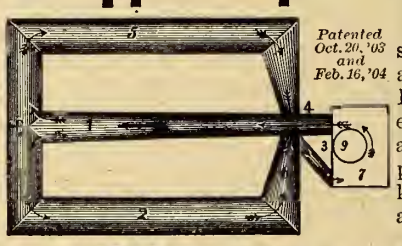
Forty Days Free Trial

And Johnson Guarantees Every Machine 5 Years.

This cut shows the workings Johnson's system is planned for results and convenience. Note positions. All parts below the level of the lid, leaving the lid for a table. Automatic regulator comes already attached and connected, a single adjusting nut on the outside of the machine. The double wafers well out over the eggs and down close to them. Regulator counter-balanced within itself.



Copper Pipe Heating System



Patented Oct. 20, '03 and Feb. 16, '04

The hot water discharged to opposite end of the egg chamber, divided and returns back to boiler, No. 7. Pipes 2 and 5 and 1 at point No. 4 equal in radiation to pipes 2 and 5 at any point. Boiler No. 7 fitted with patent return hood, saves half the kerosene and draughts of air do not affect the lamp.

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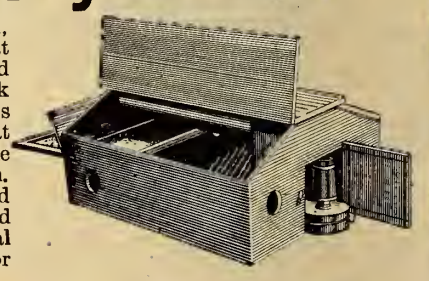

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The Great Western is the most perfect Incubator made. Possesses all the good points of all other Incubators. Easiest to operate—best for amateur and expert. Strong and durable. **Sold on a Ten Year Guarantee.** Send for large illustrated Incubator Catalog FREE.
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FOR $3.95 AND UPWARDS, about one-half the prices usually asked, we furnish the very best Incubators ever manufactured; the highest grade, latest and most improved, easiest to operate, safest, surest, most substantial, simplest and most successful incubators sold, under our binding guarantee and refund offer and offered to anyone on sixty days' free trial. Write for our free **Incubator Catalogue** and we will send you free, by return mail, the most astonishing incubator offer ever heard of, our big illustrated special Incubator Catalogue showing everything in incubators, indoor and outdoor brooders, combined incubators and brooders and yards, poultry supplies of all kinds; we will explain our free trial plan, our pay after received terms, our binding guarantees, our money returned proposition. You will be surprised at our low prices and liberal offers.
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begins right who begins with the right machines. Many beginners have met with phenomenal success whose first experience was with the

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Incubators and Brooders

Some who started with one machine now have 30 or more. We like the beginner. Know our machines will help to make them experts by and by. We were beginners one day—sold 20 machines the first year; sold 20,000 last year. Winners of 385 first prizes. Beginners, and those who have been disappointed in other makes, write for our beautiful, illustrated catalog and begin right. Tells all about Prairie State Machines and is sent free on request.

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A Free Book About

Incubators

For your own sake don't buy an incubator until you read our book. It is written by the man who knows most about incubating—a man who devoted 23 years to the problem. It tells vital facts that you must know to buy wisely—facts you would not think of. It tells of Racine Incubators and Brooders, of course, but whether you buy ours or another, the facts are important. The man who writes the book made the Racine Incubator. When you learn what he knows you will want his machine, we think. The book is free—write today for it. **Remember, We Pay the Freight.** Address

Racine Hatcher Co., Box 77, Racine, Wis.
Warehouses: Buffalo, Kansas City, St. Paul.

No Guessing

You know in advance what will come if the eggs are fertile when you use the self-regulating

Successful

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The machines for busy people and the inexperienced because they run themselves. That's the unqualified experience of thousands. The same under all conditions. 100 pens standard fowls. Incubator, poultry and poultry supply catalog **FREE.** Poultry paper one year ten cents.

Des Moines Incubator Company,
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Get One Hatch Free

Don't buy an incubator until you first try a

30 Days Free. Royal

It is the best hatcher in the world. If you don't like it send it back. Incubator, poultry and poultry supply catalog **free.** Poultry paper one year 10 cents. Write now.

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I Will Teach You the

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WITHOUT CHARGE

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CHAS. A. CYPHERS

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9 Don't even think of buying an incubator and brooder without first sending for our catalogue. It tells of nine new

INCUBATOR AND BROODER IMPROVEMENTS

which no other machines possess. They are fully explained by words and pictures in this free catalog. Send for it today.

GEO. H. LEE CO., OMAHA, NEBRASKA

peded by the high prices which are received for the birds when placed on market.

It is really remarkable that so little progress is being made in raising turkeys. Experiment station officials need to consider this matter very carefully. Indeed, it would seem that the United States Department of Agriculture can well afford to undertake the work, or else our national bird, the Thanksgiving turkey, will belong to the lost species, with the dodo and other things now extinct. Let us work to make turkey raising more profitable—for the country needs them.

Breeding for Egg Production.

Poultrymen are now discussing the "egg-producing type" of fowls, just as the live stock breeders discuss the dairy type or beef type of cattle. No set rules have yet been formulated so that one can look at a hen and tell whether or not she is a good layer, but perhaps this will come in time. It is an easy matter, however, to determine whether a hen pays for her keep, by using trap nests. This nest is being used by many poultrymen, who are anxious to cull out their unproductive hens.

Perhaps never before has so much attention been paid to the profit of individual hens as at the present time. At the meeting of the Maine Poultry Association last month the interest of those present was not entirely taken up with the exhibits of the birds which were scored for points, but the members took time to listen to an address by G. M. Gowell of the Maine Experiment Station, who told how poultry is managed at that station. This station, it will be remembered by Fruit-Grower readers, is one of those which is undertaking to solve the problem of egg production.

"It is possible," said Prof. Gowell, "to raise a strain of hens producing 200 eggs yearly, and even more. We have been working with the Plymouth Rock because this is the best all-round variety, has a strong constitution, and makes a vigorous growth. Select eggs for hatching from the hen with the largest yearly production. We bred first for color of shell and size. In 1898 we began to breed for large production of eggs.

"The use of the trap nests comes in here. Each hen is banded on the leg and given a number; she can go into the nest when she chooses, but has to be released by the one in charge, who looks at her number and gives her the credit of the egg. The first year we found seven up to or exceeding the 200 mark, while there was one laying only eight eggs. We have in this way raised the yearly average from 120 to 150 eggs per hen. The ancestors of our present stock for four years past have been birds of the 200 or more egg production. We feed in this manner: For 20 birds a pint of wheat in the morning is scattered in 6 or 8 inches of chaff; about 9:30, half a pint of cracked corn; at 1 o'clock, half a pint of oats; before they go to roost, all the mash they will eat. In cold weather, birds in open pen require one-fourth more dry feed. Mangels are hung up for them to peck. This compels exercise, and we have overcome the problem of too fat birds of this breed.

"Start pullets to growing early, and keep them at it; this is absolutely essential in order to get them into condition for early egg production. This year we have kept corn and beef scraps before the young birds from the last of June till they went into winter quarters. We feared they would fill up and get but little range, but it was not so. We had our corn and scraps in different troughs scattered throughout the fields. These troughs are 6 to 8 feet long, with lath slats about a foot high and two inches apart. The roofs are A-shaped and detachable, shedding the rain. From 600 birds, 75 hatched in March, the rest in April or May, we have been getting, for the past two weeks, 200 eggs a day. It is by no means certain that it is best to keep the corn and beef scraps constantly before We have been accustomed in previous years to feed mash morning and night, with cracked corn at noon, when old enough to leave the brooder for good. The material is cheaper, but the labor greater.

"The variable fertility of the egg from the same hen under the same conditions is exasperating, and so far has defeated many of our experiments. An egg may be completely fertilized one day, partially so the next, or entirely infertile another. Were they uniform from day to day, incubator experiments would be a simple rather than a complex problem."

In answer to a question, Prof. Gowell said he sometimes alternated two cockerels in a pen of 20 birds, sometimes used only one. In other pens he used three cockerels to two pens, and had tried three with 50 hens, allowing all to run together if not quarrelsome. The weakest point in the work he allowed to be the low fertility of the eggs. Continuing, he said:

"We have usually allowed from 8 to 10 feet of space to a bird; we decreased the allowance last year, with as good results as from the larger allotment. This season we have constructed a house, making the pens 30 by 16 feet, and in some of these pens have placed 100 birds, in the others 150, giving in the latter case little over three feet to a bird. They seem to have room for exercise, and thus far the large lots are laying as well as the smaller. If the plan continues to be successful, it will simplify and lessen the labor question, besides economizing in the cost of buildings.

"Feeding for bone and feathers in contrast to meat, applicable to all fowls, is exemplified in the case of ducks. With common meal, they will be round, plump and downy; give them bran and middlings, and they will feather out quickly. Avoid fat in beef scraps; use a coarse variety that smells of beef rather than phosphate."

I have taken a good many horticultural papers in my life, but The Fruit-Grower is the best of them all. No fruit-grower can afford to be without it; very often one copy is worth the price of a year's subscription.—F. H. Corner, Granby, Mo.

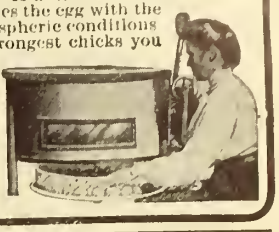
I wish to congratulate you on the excellence of The Fruit-Grower. It is fresh, breezy and up-to-date, and must be of great value as an educator.—W. M. Munson, professor of horticulture, University of Maine.

New Method Incubator Co.

Box 38 Morrow, Ohio.

No trays to drop or jar the eggs. Instead a round and **open self-ventilating nest,** swinging on a pivot so easily that a lady or child can operate and turn the eggs with perfect ease. **It's near to nature's method** as it constantly furnishes the egg with the purest of atmospheric conditions Results, the strongest chicks you ever saw and more of them. Our catalogue tells you more.

"This is the New Method."



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A Hen In It.

She was the first hatcher. You can't beat her. Siems learned how to use her and he put her in the

Natural Hen Incubator.

Nature's way. Exceeds all other incubator results at a fraction of the cost. **200 egg hatchor costs only $3. Agents wanted.** Money savers, money makers. For large or small poultry raisers. Write for plan. **Catalog and 25c lice formula free.**

Natural Hen Incub. Co., B-87 Columbus, Nebraska

TWO FOR THE HEN

From **Darling's** standard line. Rich in protein, free from taint. Poultrymen's stand-bys.

BEEF SCRAPS, BEEF MEAL.

Beef Scraps, $2.25; Beef Meal, $1.80; Granulated Bone, $2; Laying Food, $2.25; Chick Feed, $2.50; Oyster Shells, 60c.; Mica Crystal Grit, 65c. All 100 lb. bags, f. o. b. Chicago, cash with order. Lice Killers and all Supplies. Write for booklet, "Fill the Egg Basket" and large Catalog.

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20th Century Wonder Made entirely of metal and asbestos—fireproof. The **CYCLE HATCHER** is wonderfully efficient. Fifty egg size $5.00. Catalogue free.

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We sell the high-grade, automatic **BADGER INCUBATOR** on 30 day's free trial. Hatch one batch before you pay. Return it if it doesn't suit. We sell pure bred poultry and eggs. Catalog free. **Badger Incubator Co.** Box 26 Delavan, Wis.

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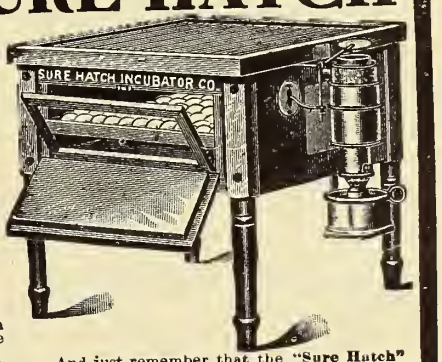
Clay Center's Claim to Fame Rests on the "SURE HATCH" Incubators and Brooders

60,000 IN USE AND SALES INCREASING ENORMOUSLY



When you send to Clay Center, Neb. for an incubator or brooder, be sure and specify the **"Sure Hatch"** and get the best.

The **"Sure Hatch"** is the incubator that gave to Clay Center its claim to fame. It has passed through the stage of experimentation and is today a pronounced success. Why pay your good hard money for an untried incubator and waste time with an imperfect experiment, when you can get a **"Sure Hatch"** for the same price, that will not disappoint you? The **"Sure Hatch"** experience is paid for. You don't have to help pay for experimenting with uncertainties when you get a **"Sure Hatch."**

It takes time and money to build up a record like the **"Sure Hatch"** record.

Sixty thousand machines in successful operation in all parts of the world, attest their superiority and make it certain that you take no chances when you invest in a **"Sure Hatch"**

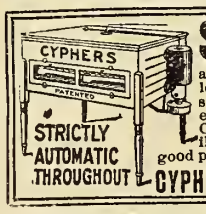
We take chances on the success of every **"Sure Hatch"** that goes out. How? By giving the purchaser a 60 days' free trial, during which he can take off two hatches to thoroughly test the machine.

And just remember that the **"Sure Hatch"** Guarantee protects you for five years. It is worth something to know and to feel that money cannot buy more in the incubator line than what is furnished for the price in the **"Sure Hatch."** All we ask for our 120-Egg Machine, with freight charges prepaid to your station is $10.00. We can ship promptly.

Among the strong points of the **"Sure Hatch"** are: Its **heater**—live, hot air all around it; cold air can't get to it; saves oil and trouble; other incubators have coolers and waste oil. Built of California redwood, that will not warp, crack, shrink or swell; patented copper heating system and tested patent regulator; full asbestos lined.

A good incubator is a money-maker from the word "go." Place your order for one now. There is but one **"Sure Hatch."** It is made at Clay Center, Neb. Our eastern office is at Indianapolis. **Free Catalogue and Poultry Book** now ready. Send at once. Address the nearest office.

Sure Hatch Incubator Co., Box 475 Clay Center, Neb. Box 1475, Indianapolis, Ind.



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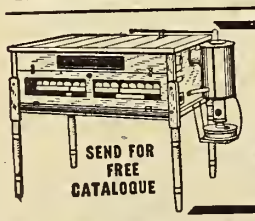
are guaranteed to hatch more and healthier chicks with less oil and less attention **in your hands** than any other, or your money back. Absolutely automatic and self-regulating. Used and endorsed by 42 Government Experiment Stations and by America's foremost poultrymen. Complete Catalogue and Poultry Guide, 212 pages (8x11,) more than 500 illustrations. **FREE,** if you send addresses of two neighbors who keep good poultry and mention this paper. Address nearest office.

CYPHERS INCUBATOR CO., Buffalo, Boston, Chicago, New York, Kansas City or San Francisco.



A NEVER FAIL HATCHER

The Improved Ormas Incubators and Brooders

are not the "failure" kind, as our patrons testify. See proof in our catalogue, which we send free for the asking. **Incubators from $7 up. Brooders from $4.50 up.** Fully warranted. No better on the market. Easy to operate. Self-regulators. Self-ventilators.

BANTA MFG. CO., LIGONIER, INDIANA

200-Egg Incubator For $12.80 Fully Guaranteed

The wonderful simplicity of the **Wooden Hen** and the greatly increased production forced by its immense sales, makes it possible to offer this perfect batcher for **$12.80.** Self regulating and guaranteed to hatch as large a percentage of eggs as any other hatcher at any price. Send for the free illustrated catalogue with 14 colored views. **GEO. H. STAHL, Quincy, Ill.**

68-Page Book and Trial Free

Cures All Uric Acid Diseases—Kidneys, Bladder, Rheumatism.

Free Treatment Proves the Cure; Free Illustrated Book Tells all About It. Send For Them Both Today.

To Readers of the Western Fruit-Grower: If you or anyone you know of is suffering from a disease of the kidneys, the bladder or any form of rheumatism, you are urgently invited to send name and address to get a free trial treatment of a wonderful non-alcoholic discovery by the

Are you in the grip of a Uric Acid Disease? This will cure you; prove it free.

celebrated French-American specialist, Dr. Edwin Turnock, by which you can cure yourself of any Uric Acid disease in a short time in your own home and save the necessity of an operation and the expense of doctors and druggists. Send for it if you have Bright's disease, diabetes, dropsy, gravel, weak back, stone in the bladder, enlarged prostrate, frequent desire to urinate, pains in the back, legs, sides and over the kidneys, swelling of the feet and ankles, retention of urine, wetting the bed, or such rheumatic affections as chronic muscular or inflammatory rheumatism, sciatica, rheumatic neuralgia, lumbago, gout, etc. It will promptly remove every trace of uric acid poison and its complications, stop all aches, pains and swellings, strengthen the kidneys and the bladder so that they will become normal again, and so revitalize and build up the entire constitution as to make you feel as healthy and strong as in your prime.

It did this for legions of others, among them such well-known persons as Mrs. Martha Coker, Tyler, Tex.; G. G. Rector, Marshall, N. C.; Mrs. Mack Devean, Noank, Conn.; Archibald Ritchie, Mt. Forest, Ont., Can.; Mrs. C. H. Sweetland, Webster City, Iowa; Ph. J. Brown, Kelispell, Mont., and it will surely do it for you. Write to the Turnock Medical Co., 2371 Bush Temple, Chicago, Ill., and since every free treatment is accompanied by a 68-page illustrated book going fully into all the details, it behooves you to send your name and address promptly for these free offerings. Do so today sure, for you cannot justly say you are incurable until you have tried this really remarkable treatment, and as neither money nor even stamps are asked for, you should certainly make a free test of it at once.

Apples Wanted

Also Potatoes and Onions.

We want your consignments, offer you the best markets in the country, prompt returns and satisfactory service; 36 years in the produce business means that we deal **fair and square.** Refer to leading banks and commercial agencies.

Write or wire us what you have to offer. **Do it right now.**

C. C. CLEMONS & CO.

Second and Grand Avenue.

KANSAS CITY, MISSOURI.

A **Sure Way** to make money is by sending us your shipments of **Fruits, Butter, Eggs and Poultry.**

COYNE BROS.

COMMISSION MERCHANTS.

160 South Water Street, Chicago.

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Wholesale Fruits and Produce

Berries a Specialty

Dealers in Berry Box Material, Grape Baskets, Egg Case Material. All kinds of Baskets in stock. Established 1864.

FARMER AGENTS WANTED—One farmer sold thirty in five days; another eight one afternoon; another five in two hours. Liberal commission. Write quick before someone else takes agency for your locality. Sample pages free. Farmers' Account Book Co., Newton, Ia.

Managing a Farm at Long Range.

Throughout the country there are many farms, and particularly fruit farms, which are owned by persons who depend on farm managers to look after the place and report the work done, its cost, results, etc. To profitably manage a farm in this way is a hard matter, but one person at least, has solved the problem. This is Mr. John R. Williams, second assistant treasurer of the American Car Company, St. Louis, Mo., who has a farm over in Illinois. Mr. Williams had samples of his report sheets on exhibition in the Illinois exhibit in the Horticultural building at the world's fair, and has sent The Fruit-Grower an account of his method.

In the first place, report sheets are printed, one for use each week. This sheet has a diagram of the farm, with each field or orchard marked off, each being designated by a letter, A, B, C, etc. Below this diagram is a space for every day in the week, showing just what work was done each day, in what field it was done, and by whom. At the close of this report is a space for the superintendent to forecast the work he proposed to undertake for the next week. Space is also provided to show what articles were sold from the farm, and the price received; also to show the employes who were at work and any purchases which may have been made for the farm.

Concerning the practical working of this plan, Mr. Williams writes as follows.

"My superintendent has a bound volume of these reports and a supply of unbound sheets. Each day he report to his wife (who acts as his secretary) the transactions of the day. At the end of the week the record is copied off and sent to me. If stormy weather, or other causes, interfere with, or prevent, work being done that fact is reported. The projected for next week is, of course, the superintendent's plan which I can alter if I think other matters demand earlier attention. In practice his plans are rarely interfered with. When the plan was first started it was irksome to them to keep the record and make the reports but they, themselves, now find the record so useful that they make it cheerfully. In financial matters, of course, I have to trust to the honesty of the superintendent. In order, however, to render it easy for him to keep things straight I have him deposit any money received by him in the local bank in the town nearby. I maintain a fund to his credit in the bank and he makes all disbursements by check. The checks are numbered and the payments are reported each week on the lower part of the report. A division of the amount is made between the various accounts shown on the report. No other record is required of the superintendent, as from these reports I am able to make any classification of the costs and revenue I may desire. The superintendent is paid a salary (and in crop years an honorarium) and is furnished house, barn, garden and pasturage for his cow. He owns a team and receives pay for its use. He employes other men and teams as may be required. Credit for him is established at the local hardware store, lumber yard, etc., for supplies. The periodical bills rendered by these dealers are passed upon by the superintendent before being paid. There are four dwellings connected with the place. Each is occupied by an employe, who pays a nominal rental for house and garden and one-half the rent of the telephone with which each house is provided. These telephones are on the local exchange there which, in turn, may be connected with the instrument in my office, one hundred and forty miles away. Employes are paid every week at a liberal rate and seem to be faithful and efficient. I believe this will give a good idea of our plan. I should be glad to learn of others, or to receive suggestions for improving ours."

This plan is one of the most complete we have ever seen, and we would commend it not only to those who are managing farms at long distance, as Mr. Williams is, but also to every farmer who looks after his own work. It will simplify matters very much in the way of keeping accounts, and it will lead to the adoption of a system which will show whether the farm is paying a profit, and if so, what branch of the business is most profitable.

Must Have Been a Crab.

Big Apple—One of our agents reports that the State Fair at Hutchinson, Kan., was one of the best he ever attended. The horticultural department was especially interesting and the display of apples unusually fine. One apple shown measured eight inches in circumference.—Northwestern Agriculturist."

Whew! The Minnesota man must have seen a Kansas crab and thought it was a full-grown apple.

The Fruit Prospect.

In answer to letters asking in what condition are fruit trees and vines and what is the prospect for fruit the coming year, I will say much rain during the summer caused a big growth of wood, and dry weather in fall caused the forming of many fruit buds on apple, pear, peach, cherry, plum and other tree fruits. Trees not exhausted from a crop the past year have good prospects for fruit in south west Missouri at present. Grape, raspberry and blackberry made a good growth of canes and went into winter well matured able to endure a severe cold. Strawberries made good healthy plants and dry weather in September and October caused the roots to grow deep, able to endure much cold, also caused the forming and developing of fruit buds. (The strawberry is the only one of the berries that forms fruit buds in the fall.)

The prospect for fruit the coming season is as good as ever and at this season is as good as I ever saw at this the past year, which is the cold rains when trees in bloom reduced the fruit to the poorest for many years and we also learned not to count eggs before they are laid.

Letters asking if some of my trees shed their leaves in August and September; what is the cause and will they bear next season?

Loss of foliage at that time of the year—caused by dry weather, mildew, fungus weakens the vitality of the tree and vine and they seldom bear a full crop the next year.

JACOB FAITH.

Monteorallo, Mo.

Seedling Apple From Iowa.

About the middle of October, Lewis Ray, Fremont, Iowa, sent us several specimens of an apple which he says is a chance seedling in that section. The apples were of good size, greenish color, with red cheek, the green turning yellow as the fruit ripened; flavor sub-acid, quality fair to good. Mr. Ray writes as follows concerning the apple:

"The original tree grew wild in the woods until it was destroyed. I secured some grafts, however, and grafted them into some of my trees. I have known the tree for ten years, and have never known it to fail to produce a crop. The apples are fine keepers; I have kept them in good condition in my cave until the first of March, and I think there is no better tasting apple among the winter varieties. The original tree was a very heavy bearer, limbs often breaking from their load of fruit. I would like for some nurserymen to propagate it if it is worthy of it."

The George B. Peck Dry Goods Company, Kansas City, Mo., believe in good reading matter, as is evidenced by their subscribing for three copies of The Fruit-Grower, one to be sent to their reception room, one to the employes' reading room, and the other to Mr. Peck himself.

Bad grocer confesses his badness by selling bad lamp-chimneys.

MACBETH.

You need to know how to manage your lamps to have comfort with them at small cost. Better read my Index; I send it free.

MACBETH, Pittsburgh.

DO THIS NOW

And I Will Give You a Pair of my Handsome

Gold Spectacles

Just send me five names of spectacle wearers and I will do this:—First, I will mail you my Perfect Home Eye Tester, free. Then (after you have sent me your test), I will mail you a

perfect-fitting five dollar family set of Spectacles for only $1, which will include a pair of my handsome Rolled Gold Spectacles, absolutely free of charge. This set will last a family a lifetime. I have never sold this family set for less than $5 and you could not buy spectacles anywhere near as good as these, even for $10 a *pair.* I am really charging you nothing for them now, as the dollar I will ask you to send with your test is only to help pay for this announcement. This very remarkable but honest offer (to send a five dollar set of spectacles for only $1) is open to everyone (my old customers also), but only for a short time, as I am just doing this to prove to every spectacle wearer in the world the following two very important facts: *First,* that my Perfect Home Eye Tester is positively accurate and reliable and with it you will be able to give your own eyes a perfect test in your own home and thereby I fit you with absolutely perfect fitting spectacles *by mail,* which could not be improved on even if you had undergone a personal examination in any occulist's office, at a cost of $10 or more. *Second,* and most important of all, that on account of my latest improvements, my spectacles have become known the world over as the "Dr. Haux Famous Perfect Vision Reading and Sewing Spectacles" and they are now greatly superior to all others on the market. With them you will be able to thread the finest needle and read the smallest print, day and night, with perfect ease and comfort, just as you did in your younger days, and this, even if your eyes are so very weak now that you cannot read the largest print in this paper. In fact the large number of physicians who have for years and years used and recommended my spectacles to their weak-eyed patients will tell you that they are the most perfect fitting, clearest and best in the world today, and I will give you your dollar back and let you keep the five dollar set of spectacles also, if *you yourself* don't find them to be the finest, clearest and best you have ever bought anywhere at any price. I can only send one set to a family at this price, and this only for a short time, so write me *right now* for my free Perfect Home Eye Tester, and address my company as follows:—

DR. HAUX SPECTACLE CO.,
Haux Building, ST. LOUIS, MO.

I WANT AGENTS ALSO And any man or woman (also storekeepers), without any previous experience whatever, can fit the weakest eyes with my Perfect Home Eye Tester, which is so simple that any one can work it and easily earn from $25 to $100 weekly selling my famous spectacles, either in their own homes, travelling or in stores. My agents need no license anywhere as I furnish the necessary documents with the Agent's Outfit

NOTE:—The above is the largest mail spectacle house in the United States and perfectly reliable.

FRISCO SYSTEM

FRISCO SYSTEM

Chicago & Eastern Illinois R. R.

Double Daily Trains BETWEEN St. Louis & Chicago

MORNING AND EVENING

From LaSalle Street Station, Chicago.....9:50 a. m.—9:10 p. m.

From Union Sta. (Merchants Bridge) St. Louis, 9:30 a. m.—9:46 p. m.

Morning or evening connection at both termini with lines diverging.
Equipment entirely new and modern throughout.
A DOUBLE-TRACK RAILWAY.
Equipped with practical and approved safety appliances.
Substantially constructed.

M. M. Johnson Incubator Co.'s Factory, Clay Center, Neb.

Last winter a young man came into the Fruit-Grower office one day, and announced that he was going to open up shipping headquarters in St. Joseph for M. M. Johnson, Clay Center, Neb., manufacturer of the "Old Trusty" line of incubators and brooders. We had known that Johnson was doing a good business, but up to that time had not been aware just to what extent his business had been built up. The young man hustled around, found a good location, and in a few days was ready for business. This was last season, and yet the first season's shipments from St. Joseph alone were more than fifteen carloads.

This fact in itself was an eye-opener for us, but not more so than we experienced recently, when a representative of The Fruit-Grower visited Clay Center, and inspected the factory of the M. M. Johnson Company.

The growth of the business of M. M. Johnson has been remarkable. It has been only a few years since he was a feature at fairs, poultry shows, etc., with an exhibition incubator, which brought forth a hatch at the appointed time, notwithstanding the machine had been hauled over the country in a wagon while the eggs were undergoing the process of incubation. To this business at that time Mr. Johnson gave his personal attention—and this is the secret of his success. Having developed an incubator which was a success, the next move was to get people acquainted with it, and this is the work which he was doing when we first saw him a number of years ago.

"Seeing is believing," and after having seen the machines and their work, the people were willing to invest in his machines, and the business began to boom. From the very first he gave his personal attention to the work of looking after the machines which were sent out and answered all letters in regard to their operation. All this took lots of time and required hard work—but it paid. It resulted in increased sales and secured satisfied customers for the incubators and brooders. He has gone on the theory that his customers must be satisfied, and has spared no pains to see that this result is achieved. He has built his business substantially, on a good, solid foundation, and the growth, while rapid, has not been of a mushroom nature, but a steady increase. The accompanying illustration shows the original Johnson factory, the one which was used last year, and also the one which is occupied by the company at the present time. The present factory is complete in every particular, and is well adapted to the business. Over 17,000 square feet of floor space is contained in the factory, and during the busy season equal to an output of 100 finished machines per day. About one hundred people will be employed in the factory when the rush is on, and at the time of our visit nineteen persons were busy in the office handling the correspondence of the firm—and the season had hardly opened.

Mr. Johnson has used rare good judgment in the selecting of his assistants. In the management o fthe business he is assisted by his son, Mr. H. H. Johnson, and Mr. H. H. Harvey. His factory employes, too, are men in whom the greatest confidence is placed. At first, as stated, he could look after the details of the entire business himself. Now, of course, it is not possible for him to look after the work of manufacturing the machines, but he realizes that this work is most important, and he has taken great care to get competent men for all the positions. That he has succeeded in getting good workmen, who take a pride in their work, is evident to anyone who visits the factory. The place is as neat as can be, with no dust or litter strewn around the floor. The place is a model for neatness and cleanliness—no ordinary workmen would take such pride in the appearance of their workshop. The latest improved machinery is installed in every department, and every facility provided for doing the best work at a minimum of expense. This is one reason why the "Old Trusty" machines are good machines, and at the same time are reasonable in price.

Mr. Johnson has just finished his catalogue for the coming season, which is fully up to the standard of previous years—and that is saying a great deal. Early in his career as an incubator manufacturer he began to use great quantities of illustrations, showing his machines in actual operation, with the pictures of the chickens which were taken off at different hatches. These illustrations came to be a feature of the catalogue—and a popular feature, too. Is a Missourian himself, and believes that everyone appreciates "being shown." The catalogue this season has a great many of these illustrations; the book contains nearly 100 pages, is printed in two colors, and is written in his own popular style.

"We are better prepared to handle our business this season than ever before," said Mr. Johnson, "and I may add that we will likely have a much greater business than ever before, if the opening of the season is to be taken as an indication."

We questioned Mr. Johnson as to the growth of the business, and he assured us that it has been in every way satisfactory. As stated in the beginning of this article, shipping headquarters were opened in St. Joseph last season. This was to give better shipping facilities for the east, southeast and south. The machines are shipped to St. Joseph in car lots, and the first season after the branch was opened over fifteen carloads of machines were sent out from this city.

In this article no attempt has been made to tell the merits of the "Old Trusty" machines—all this is told, and well told, in the handsome catalogue which will be sent free to those who ask for same, addressing M. M. Johnson Co., Clay Center, Neb. Instead, this article is simply to tell of the present condition of the business, the wonderful record the firm has made and the methods which made this possible. The history of the M. M. Johnson Company is a splendid testimonial of the value of the personal element in business, for it is M. M. Johnson's personality which has been behind the business through the years, and is still pushing it on to still greater things.

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Fertilizers for Strawberries.

A large number of experiments with fertilizers for strawberries have been tried in New York state last season with remarkably favorable results on the whole. The fertilizers tried were the sulphate and muriate of potash, dissolved rock phosphate, ashes and nitrate of soda. These were used separately and also combined in varying amounts. These pertilizers were applied to young plantations in the spring before the plants blossomed and a year before the recorded crop. The materials were scattered alongside the rows a few inches from the plants and were cultivated in. In fifty-five experiments the fertilized plants yielded an average of 5,197 quarts per acre, or about 2,000 quarts above the average. The potash and phosphorus were much more effective than nitrogenous fertilizers, the fruit being firmer and of better color and flavor. The nitrogenous fertilizers, especially heavy applications of manure, made the plants run too much to vines, and the fruit was soft and inferior. Particular success was secured with a top-dressing of nitrate of soda in the spring. The nitrate was ground fine and applied broadcast after the foliage was well started, but before any blossoms appeared and while the leaves were perfectly dry. The plants thus treated showed a deeper color, a stronger bloom, larger leaves, and a greater freedom from rust. The fruit yield also was increased from 18 to 31 per cent, largely due to the increased size of the berries; the ripening of the fruit was not delayed beyond the usual time by the use of the nitrate.

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Booklet on Strawberry Culture.

The German Kali Works, 93 Nassau street, New York, has just issued a booklet on strawberry culture, especially the fertilization of soil for this fruit, which will be in demand by strawberry growers. The booklet gives directions for planting, etc., but this booklet is especially interesting for the facts it gives regarding the application of fertilizers. The booklet says: "Correct fertilizing is far more important than the selection of the soil, for almost any soil will make fine berries if properly manured. No soil can make them for any length of time without judicious and liberal manuring. Some of the reasons why it pays to fertilize strawberries are: It vastly increases the yield, gives larger berries, a better color and flavor, and firmer fruit. The last-named quality—firmness—enables berries to be shipped long distances to a market and arrive fresh." And then it proceeds to give the fertilizing properties which strawberries require. The booklet will be sent free to all who ask for it. Address German Kali Works, 93 Nassau street, New York City, and state that you want the strawberry booklet which was mentioned in The Fruit-Grower for December, 1904.

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He Found a Man.

In October and November issues of The Fruit-Grower appeared an advertisement of a man who wanted to hire a superintendent for his farm in Nebraska. This was the advertisement signed "Owner." This gentleman received a great many answers to the advertisement, and to save time in writing to all of them, he wishes to announce that he has found a man for the place.

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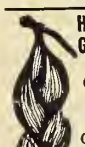

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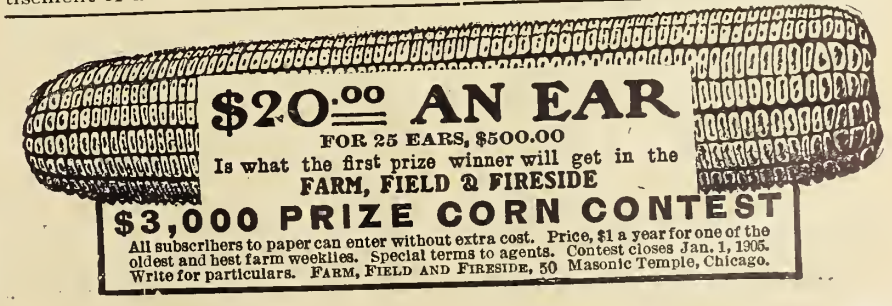

Kansas Horticultural Society Meeting.

(Continued from Page 7.)

opinion, the old railway pool, which has been condemned so many times, would go far to settle the present trouble. The pool should be correctly managed, but he believed it was not an unmixed evil.

Edwin Taylor read a most excellent paper on "Land." This paper took the position that the available land for settlers is becoming limited, and that as a result there is an increase of tenantry. Mr. Taylor regards this as undesirable for the country, and advanced the opinion that no man should be allowed to own more than one farm. In this way there would be fewer tenants and more land owners—and the hope of the country must lie in the contented owner of a farm, who is interested n all that makes for the improvement of society.

Wednesday morning Frank Yaw showed some bands which he had used about his apple trees, for the purpose of catching the larvae of the codling moth. These bands, as has been explained many times in The Fruit-Grower, are simply to afford a hiding place for the larvae of the insect when it pupates. They were put on about June 20, at which time the larvae of the first brood were leaving the apples. The bands should be examined about every ten days and all pupa destroyed. On July 10 one of the bands was removed, and by August 1 all the insects had emerged as adult moths. During the season a great many insects were destroyed, and some curculio were also caught under the bands. Mr. Yaw said he tried paper bands, and they were too slick to afford the proper hiding place for the insects. The best bands are made from gunny sacks or something of that sort.

Mr. Cutter said that in Colorado these bands are used quite extensively, and growers there believe it is half the battle in fighting the codling moth.

The subject of fertilizers for orchards was discussed, the opening being by J. H. Hale. Mr. Hale said that the production of fruit is a manufacturing process, and one must study his soil to see what it needs. In the east he has found that chemical fertilizers are better than barnyard manure for orchards and fruit gardens. Nitrogen is the most expensive element of soil fertility, if it is to be bought, but he grows leguminous crops and gets this expensive element from the air. Mr. Hale said that growers in the east had found that home-mixed fertilizers are less expensive than the ready-mixed article. For strawberries, he said he would plow under a good crop of cow peas to furnish the nitrogen; then he would add from 1,200 to 1,500 pounds of ground bone and 300 pounds of potash per acre. On the stony hillsides there is usually enough potash in the soil.

Mr. Hale was asked when he sprays to prevent leaf curl of the peach. He said he used to spray just before growth started in spring, using Bordeaux mixture. Now, however, in in spraying for San Jose scale in Georgia, he has found that spraying with the lime-salt-sulphur mixture controls the leaf curl perfectly.

In answer to a question, Mr. Hale said they had a large plant for preparing the lime-salt-sulphur mixture, but on the basis of one barrel the method is as follows: Fill a barrel about one-third full of water; boil the water by using a steam pipe, then add twenty pounds of lime; the slaking of the lime and the boiling of the water will generate intense heat, and then fifteen pounds of flowers of sulphur should be added. Boil for about twenty minutes, and then fill the barrel with water and bring to a boil again. Nothing has been said about the salt, for it is really not needed to make the insecticide effective. It is added to the mixture to make it stick to the trees better. He uses only ten pounds of salt to the barrel of mixture.

Mr. Hale was asked if he ever used salt as a fertilizer. "What for?" he replied. "Salt is often used for asparagus, but not as a fertilizer. It simply kills the weeds without hurt—only reason I know for using salt for asparagus."

In reply to a question, Mr. Hale said he applied wood ashes—in fact, all kinds of fertilizers—broadcast and cultivates into the soil.

Major Holsinger said they had tried commercial fertilizers on their soil near Kansas City and could see no effects. He is satisfied the soil there does not yet need the fertilizers.

Referring to the unfruitfulness of some trees, Mr. Hale said that he believes the time has come when attention should be paid to the individuality of trees; they are not all alike, and only the best should be used to propagate from. He said that nurserymen usually get their scions from the nursery row, and this is all wrong.

"The planters are to blame, however, and not the nurserymen," he added. "Purchasers want to get cheap trees and they have forced nurserymen to produce them as cheaply as possible. The curse of the fruit-grower today is the demand for cheap trees and nursery stock."

The reports of President Wellhouse and Secretary Barnes showed the society to be in flourishing condition. Mr. Barnes called attention to the improvements in the rooms of the society. A new carpet has been laid and the executive council has promised to make some more needed improvements, so that there are hopes of even better quarters for the society.

J. H. Hale delivered a very interesting address on the subject of "Commercial Peach Growing." He said that last year there were 18,000,000 peach trees in Georgia, and this number will have been greatly increased by spring. Not only has planting been on the increase in Georgia, but other southern states have been planting largely.

"I am often asked what I think of the commercial peach business, and in reply I want to say that there are now enough peach trees growing south of Mason and Dixon's line to supply, when they come into bearing, 1,000 carloads of fruit a day for the two months of mid-summer. This will flood all markets, if the trees come to full fruiting. But of course they will not. Many will prove not of the right varieties, others will be taken by the San Jose scale (of blessed memory), and still others will be neglected because the planters are not persons who love trees for their own sake, but who have invested in the peach business as they would in a gold mine—for the money there is in it. Not many of these will succeed."

Notwithstanding this heavy planting in southern states Mr. Hale said there are abundant opportunities in this section for growers to plant orchards on a small scale, to supply local markets. Southern competition cannot take away a trade of this kind, if growers are careful to produce peaches of good quality and appearance. The southern grower has to depend on freight shipments, and this, at least, is not satisfactory. He told of the private refrigerator car monopoly, and said that this is one of the evils of which needs to be corrected.

Mr. Hale referred to the experiments which have been conducted by Mr. Harold Powell of the United States department of agriculture in regard to the shipment of peaches. The past season two refrigerator cars were stationed at the Hale packing shed, with the bunkers filled with ice, these cars to be used as storage houses in which trial lots of the fruit were cooled before shipment. The fruit was placed in these cars as soon as packed and allowed to remain for twenty-four hours before being loaded into the cars in which it was to be shipped. Being stationary, the cars could be ventilated and the temperature watched carefully, and the temperature of the fruit was speedily lowered. When this fruit was finally shipped it carried in splendid condition, and demonstrated beyond question that the cooling of the fruit before shipment will greatly add to its carrying qualities.

"The first twenty-four hours after shipment, when the fruit is placed in the cars in a warm condition, are most trying on fruit. The cars are veritable sweatboxes, because they are not ventilated as they should be. But if the temperature of the fruit can be lowered before shipment, it will carry all right. I am satisfied that in time we will all have storage houses, in which to keep our fruit for twenty-four hours before shipment; this delay will add many days to the life of the fruit. Not only with peaches, but with berries, will this method prove profitable, and I believe we will all come to this method of handling the fruit for

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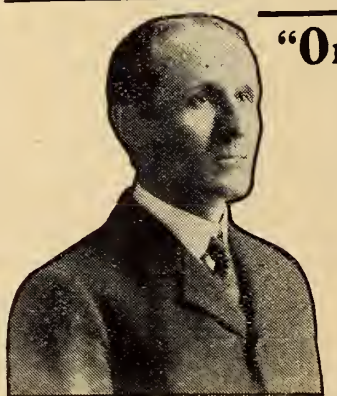

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long shipment by refrigerator cars."

Mr. Hale said that, as a general proposition, he preferred rolling land for peaches; soil must certainly be well drained, and air drainage is also essential. Soil should not be too rich in nitrogen. Trees should be planted sixteen to twenty feet apart each way. He has tried all grades of trees for planting, but now prefers a good, thrifty one-year tree; at planting cuts off the top and most of the roots. Give good cultivation the first year; don't grow corn among the trees if you can help it; potatoes or some low-growing crop are better, but keep plants six feet away from trees. Keep cultivation up until middle of season, then plant a cover crop. Let all the top grow the first year. He used to cut back very vigorously at end of first season, but found this makes too dense a head, and now does not cut back so much. The third year the treatment is much the same as previous seasons. When tree is growing fast it may not form fruit buds; in this event he summer prunes by cutting out some of the branches and shortening in some of the vigorous growth; this will stimulate the formation of fruit buds.

In reply to the question, Will not this summer pruning be apt to cause a late growth? Mr. Hale said that in some seasons, where late fall rains come, this may be so; one will have to use his own judgment as to this treatment.

Mr. Hale said he picks peaches as they come to full maturity; don't wait until they get soft, but let them get ripe. It is best not to pick all the fruit on a tree at one time, but select the peaches as they ripen, going over the trees several times, the picking season covering a period of about a week to ten days. The speaker referred to the development of the peach within recent years, and said that formerly the Persian type was grown almost exclusively. However, the North China type had proved more hardy, and the best varieties now come from this strain. For Northern locations he would recommend this type of trees, and a list of varieties which are most hardy will include Greensboro, Waddell, Caring the asparagus—and that is the man, Hiley, Champion, Belle of Georgia, Crosby. The latter is a good peach, but needs thinning and feeding; unless thinned the fruit will run down in size and the down will be thick and long, but if thinned and trees are well fertilized the Crosby is a most excellent peach.

In answer to a question, Mr. Hale said that the white peaches are, as a rule, of better quality than the yellow varieties, and he is planting almost exclusively of the white-flesh sorts in his Georgia orchards.

Edwin Snyder took the place of William Cutter in discussing peach-growing in Kansas, and said he wanted high ground for peaches. His list of varieties included Greensboro, Champion, Elberta, Crosby, Salway, Heath Cling. Plant sixteen feet north and south in row, twenty feet apart east and west. Cultivates with an extension disc harrow. Mr. Snyder said he had never thinned peaches, but had resolved to do so this year, if he has a crop.

An interesting discussion followed in regard to the use of seedling peaches. Major Holsinger told of an exceptionally good lot of seedlings he had secured, but Mr. Hale said he had grown about 10,000 seedlings in Georgia, which had been cross-bred, but not over one of them, perhaps, will be worth propagating. Many are good, but no better than many others now on market.

Dahlia growing was discussed in papers by Mrs. Harriet Chandler and Dr. Lux of Topeka. The former had grown many blooms for selling to florists and had sold many at $2 per 100; quantities of asters were also sold at $1 per 100.

The best way to propagate dahlias is by division of the roots, as the growing of seedlings is uncertain business. Each tuber must have an eye, which is found only near the top, where it joints the main stem. Plant dahlias when danger from frost is over. Only one sprout should be allowed to grow and this should be pinched off when it reaches a height of about six inches, to induce branching. Dahlias require stakes to support the stems. Dig in fall, and if roots are weak they should be stored in sand, to prevent their drying out.

"Marketing Gardening, from the Wife's Standpoint" and "The Housekeeper's Winter Horticultural Supplies" were discussed by Mrs. Whitney and Mrs. Stout, respectively. The one told of the part the wife could take in helping to prepare vegetables for market, and the other told of the canning and preserving of fruits for winter use.

Dr. Locke of Topeka discussed "The Best Tree for Pleasure and Profit." This was not an apple tree, a peach tree, nor a cherry, but was the Christmas tree. He urged the members to keep alive the spirit of Christmas—for it is the Christ spirit.

J. H. Hale told of the mission of the American Pomological Society. The society was organized in 1848, and has been one of the most important factors in the development of American pomology.

Thursday morning L. A. Goodman told of the fruit exhibit which was made at St. Louis and offered some suggestions for the benefit of those who wish to make exhibits of fruit in future. One lesson taught by the experience at St. Louis was that fruit should be wrapped in paper in the orchard, as soon as picked, rather than delay the work of wrapping until later. One other thing which was demonstrated at St. Louis was that in arranging premium lists for fruit shows there should be more definiteness in arranging the premium lists. One must know exactly what premium he is showing for when he makes an exhibit.

The suggestion was made here that the premium lists of country fairs should all be arranged along given lines, so that there should be uniformity, and that the exhibits should teach definite lessons. Albert Dickens suggested that the society prepare a recommended premium list for use at fairs and print same in the Fruit-Grower and Kansas Farmer.

Mr. Goodman said that in awarding premiums for exhibits at St. Louis the judges cut the exhibits more severely for bruises than for any other cause. The bruising of the fruit, they considered, was prima facie evidence that it had been carelessly handled. It was clearly the fault of the grower or shipper, and accordingly the exhibits were cut severely for bruises.

Someone asked Mr. Goodman about the dust spray, and the speaker said he had not been entirely satisfied with his results, although he believes the dust spray has helped. It has been impossible to spray the large orchards under his control with water, and accordingly the dust had been used. The last year or two have been very disappointing, but will continue to use the dust, for they cannot use water.

"I cannot say the dust process is as effective as the liquid process," said Mr. Goodman, "for in many cases I believe it is not. But it is much cheaper and more easily applied. If an old orchard has become infested with insects and infected with diseases, I doubt if the dust process will be as effective as the liquid in removing the same. But in a young orchard, where the pests have never secured a foothold, the dust can be used as a preventive measure, and I believe it will, to a great extent, keep the orchard clean."

Mr. Hale: "Mr. Goodman, if you had an orchard where water is available, and where the lay of the land is such that a wagon can be driven over it, would you use the dust process?"

"Yes," replied Mr. Goodman. "I would use both. I would not discard the liquid process for the dust, but would add the dust sprayer to my equipment and use both, for there are times when one cannot use the liquid practicably, when the dust process might be beneficial."

At the summer meeting of the society at Dodge City a committee was appointed to investigate the state forestry station work and make recommendation as to its future. This committee reported at the annual meeting, and stated that the state has spent $84,000 in the forestry work and has not received its money's worth. The station is not doing the work as it ought, the forestry appropriation being used, in many cases, to pay political obligations. The committee accordingly submitted a proposed bill to be presented to the legislature which provides that the forestry experiment stations be transferred to the board of control of the agricultural experiment station at Manhattan, and that the state forester be an expert in this line and that he be added to the horticultural staff of the station.

Mr. Tincher, chairman of the committee, explained that this move does not contemplate that the present forestry stations be discontinued, or that the work be removed to Manhattan. The stations are to continue at their present locations; the proposed measure simply changes the control of the station from that of politicians to practical men. The proposed measure was indorsed unanimously.

E. J. Holman talked on "The Nurserymen's Side of the Business," and told of some of the abuses of the nursery business in recent years. Growers should keep in touch with the best horticultural societies, and it will be found that many of the abuses which are complained of today will disappear, for the growers will then use more intelligence in their dealings with nurserymen, and will avoid the tree peddler.

In the discussion which followed the members condemned the practice of nurserymen continually cutting scions from nursery trees and "scion orchards." Others said that nurserymen are largely to blame for the evil of the tree peddler, and suggested that the latter would have to go out of business if nurserymen would burn their cull trees instead of selling them to unreliable, dishonest men, who distribute them broadcast throughout the country.

W. F. Schell, superintendent of the Kansas exhibit at the World's Fair, told of the exhibit and the compliments it had received. Kansas was the only state ready with its exhibit on the day the fair opened, he said, and received many compliments upon this promptness. The exhibit received one grand prize; Mr. Schell was awarded a gold medal for the work done in keeping up the display and in addition the exhibit received three gold medals, eighteen silver medals and twenty-two bronze medals.

F. W. Dixon conducted a discussion on the subject of strawberry growing. Mr. Dixon recommended August Luther, Excelsior, Johnson's Early and Bederwood for early, and Dunlap, Warfield and Gandy for general crop. He believes most Kansas soils are rich enough for strawberries without fertilizers. Immediately after planting he cultivates with weeder and Clark's Cutaway harrow. Continue cultivation until October.

In discussing the varieties of strawberries the Excelsior was both abused and recommended. The fact was brought out that this variety will not do so well on rich soil, for it makes too rank a growth. Mr. Hale suggested that it had been his experience that the most serious weed in the strawbrry field of the average grower is the strawberry plant itself. Too many plants are allowed to grow, and they should be thinned out severely. He was also of the opinion that not enough of the growers spray for the leaf rust of the strawberry, which is a serious pest in many places and frequently cuts a crop in half. Use Bordeaux early in the season for this trouble.

The program of the meeting was closed Thursday afternoon, so there was no evening session, and the society adjourned ahead of time. The meeting was admittedly one of the most enjoyable held by the society.

❦ ❦ ❦

You need never discontinue The Fruit-Grower to my address.—C. W. Hoffman, Beatrice, Neb.

$5 PRICE EXPLAINED

FOR $5.00 TO $8.00 SEWING MACHINES SIMILAR to the MACHINE ILLUSTRATED hereon, have been widely advertised. How sewing machines can be offered at these prices and why we can sell the HIGHEST GRADE Sewing Machines made in the world at much lower prices than any other house is all fully explained in our new big free Special Sewing Machine Catalogue. Cut this advertisement out and send it to us and you will receive, by return mail, free, postpaid, our new big free Sewing Machine Catalogue, showing the most complete assortment of the highest grade Sewing Machines made in the world, all shown in large handsome halftone and colored illustrations, full descriptions and all priced at prices much lower than any other house can possibly make. With the Big Free Catalogue you will receive THE MOST ASTONISHINGLY LIBERAL Sewing Machine offer ever heard of, a new and marvelous proposition. How others can offer sewing machines at $5.00 to $8.00 and why we can sell at much lower prices than all others will be fully explained. We will explain why we can ship your machine the day we receive your order, how we make the freight charges so very low (next to nothing). YOU WILL GET OUR FREE TRIAL OFFER, SAFE AND PROMPT DELIVERY GUARANTEE, 20-year Binding Quality Guarantee, you will get our very latest Sewing Machine Offer. INSTALLMENT, PARTIAL PAYMENT PLAN EXPLAINED. How new sewing machines are exchanged for old ones, all fully explained when you write for Our Free SEWING MACHINE CATALOGUE. HAVE YOU ANY USE FOR A SEWING MACHINE? If you have don't fail to cut this advertisement out today and mail to us. If you can't use a sewing machine at any price, call your neighbor's attention to this advertisement. Don't buy any kind of a sewing machine at any price, for cash, on time or on installments, or don't trade your old machine for a new one until you get our Big New Sewing Machine Catalogue FREE, with all our new offers, with everything explained, ALL FREE FOR THE ASKING. We will tell you something about sewing machines you ought to know. WRITE TODAY, and be sure to mention this paper. DO IT NOW. Address,

SEARS, ROEBUCK & CO., CHICAGO, ILLINOIS.

"The Whole Thing in a Nutshell"

200 Eggs a Year Per Hen

HOW TO GET THEM

The fourth edition of the book, "200 Eggs a Year Per Hen," is now ready. Revised, enlarged, and in part rewritten. 90 pages. contains among other things the method of feeding by which Mr. S. D. Fox, of Wolfboro, N. H., won the prize of $100 in gold offered by the manufacturers of a well-known condition powder for the best egg record during the winter months. Simple as a, b, c—and yet we guarantee it to start hens to laying earlier and to induce them to lay more eggs than any other method under the sun. The book also contains recipe for egg food and tonic used by Mr. Fox, which brought him in one winter day 68 eggs from 72 hens; and for five days in succession from the same flock 64 eggs a day. Mr. E. F. Chamberlain of Wolfboro, N. H., says: "By following the methods outlined in your book I obtained 1,496 eggs from 91 R. I. Reds in the month of January, 1902." From 14 pullets picked at random out of a farmer's flock the author got 2,999 eggs in one year—an average o over 214 eggs apiece. It has been my ambition in writing "200 Eggs a Year Per Hen" to make it the standard hook on egg production and profits in poultry. Tells all thehe is to know, and tells it in a plain, commonsense way.

Price 50 cents, or with a year's subscription, 60c; or given as a premium for four yearly subscriptions to the American Poultry Advocate at 25c each.

Our paper is handsomely illustrated, 40 to 75 pages, 25 cents per year. 4 months' trial, 10 cents. Samples Free. Catalogue of Poultry Books Free.

American Poultry Advocate,
No. 11 Wesleyan Block, Syracuse, New York.

A Clean Farm Paper

Are you interested in having one for your family to read? If so, write for a sample of

The Modern Farmer

It is clean and helpful on every page, and does not contain whisky, patent medicine, or fake ads.

BEE-KEEPER'S CLUB.

Modern Farmer, one year	$ 50
Silk Front Bee Veil	50
Gleanings in Bee Culture, 1 yr.	1 00
Langstroth on Honey Bee	1 20
American Bee Journal (new only)	1 00
	$4 20

All of the above only $2.50; first two, 50c; first three $1.25; first four, $2.10.

New subscribers for the A. B. J. can substitute it for Gleanings if they wish. Write for **Other Clubbing Offers with the Western Fruit-Grower and other farm, fruit and poultry papers very cheap; also a price list of Bee Supplies.**

E. T. Abbott, St. Joseph, Mo.
307 North Third Street.

BOTH FOR 50c

ST. JOSEPH WEEKLY NEWS, 1 YEAR
Regular Subscription Price 50 Cents

FARM FOLKS, ONE YEAR
Regular Subscription Price 50 Cents

By special arrangement we are prepared to offer a year's subscription to the ST. JOSEPH WEEKLY NEWS, the regular price of which is 50c a year, and also one year's subscription to FARM FOLKS, regular rate 50c a year.

BOTH FOR ONLY 50 CENTS.

FARM FOLKS is one of the newest, brightest and best farm and home publications in the country. Each issue consists of 16 four-column illustrated pages. This offer is made for a limited time only, and is good for either renewals or new subscriptions. In order to secure this special rate you must clip out this ad and send in with the 50c. Address your letters to FARM FOLKS
Kansas City Life Building KANSAS CITY, MO.

Metal Shingles. *Fireproof.* Best for house or barn. Easily laid. Prices catalog and testimonials free. MONTROSS CO., Camden, N. J.

$7.00 Daily Av. selling IDEAL PUMP EQUALIZERS. Make all pumps work EASY. Windmills run in slightest wind. FIT ALL PUMPS. Merit sells them. FULLY WARRANTED. Exclusive territory. Write Pump Equalizer Co., 40 Dearborn St., Chicago, Ill.

OF INTERNATIONAL FAME.

On a busy corner in the still busier city of Chicago, where thousands of people—Chicago people, with an eye and thought for naught but their own affairs, pass and repass every day, stands a building, not an imposing, but a substantial, roomy edifice, the name of which is perhaps more widely known in all quarters of the globe than that of any other structure upon the entire American continent. People pass it by without giving it a glance of the eye, but countless thousands of eyes in all parts of the world are daily turned toward it and countless thoughts are centered upon it and that which it produces and offers to the world.

It is the Vitae-Ore Building, the building from which the remedy which gives it its name is offered to the public, the remedy—the natural mineral Ore—which has astounded the people of five continents by the remarkable and almost miraculous cures and brought happiness, comfort, peace and contentment to thousands of homes which had been torn and ravished by the scourges of sickness and disease. It was built

stone represents a satisfied customer; each tile in the floors and stairway a patient cured, who satisfied, paid his money for the treatment. From a bumble beginning in a room in a cottage occupied by Mr. Theo. Noel, its discovery, the Vitae-Ore enterprise has grown to such proportions as to occupy a building 50x 175 feet, three floors high, a total floor space of 18,750 feet, used solely, entirely and exclusively in placing this remedy before the public, not counting the building owned and occupied by the Theo. Noel Company, proprietors of the discovery in Toronto, Ont., and London, Eng., for the carrying on of the Vitae-Ore enterprise in Canada and Great Britain.

All this is a standing monument to the wonderful merit of this still more wonderful remedy, which is today offered to the readers of this paper in the magnificent, full page announcement which readers will find upon the back cover of this issue, a monument that testifies in a stronger language than anything that could be said with ink and white paper. The Theo. Noel Company offers a package on thirty days' trial, so that all who suffer, all who used it, may tset it without risk or possibility of loss. It cures, the patient is satisfied and pays for it, and the Vitae-Ore enterprise grows and grows and spreads its leaves like a green hay tree. hy, with and for Vitae-Ore. Each brick and

FENCE FACTS.

The Economy of Erecting a Good Fernce Proven by Experience.

A good fence is an investment. Any other kind is an aggravation, an expense and an eye sore.

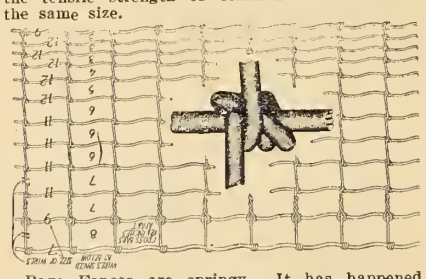
It is your intention to huy a good fence when you huy any. No man ever sets out to buy an inferior fence, knowingly, yet some have been induced to considerations of price to take a fence that has proven more costly and less satlsfactory in the end. The good fence is the cheapest fence in the long run.

The only fence now in existence that has heen in use for 19 years is Page Fence, manufactured hy the Page Woven Wire Fench Coo., Adrian, Mich.

This is a case of the "survival of the fittest," for Page Fence has heen made on honor from the first and is easily the highest quality fence.

United States Government contracts for fence specify "Page Fence quality." This makes Page Fence the government standard for quality.

One of the reasons for the supremacy of Page Fence is that every horizontal wire in all Page Fence is douhle strength, high carhon, open-hearth, spring steel wire, with, at least, double the tensile strength of common fence wire of the same size.



Page Fences are springy. It has happened hundreds of times that falling trees have crushed Page Fence into the ground and on removing the tree the fence has returned to position witbout injury. This is the work of Page spring steel wire with its wonderful, permanent length wise coil.

Just to sbow you what Page spring steel wire is, the Page Woven Wire Fence Co., Adrian, Mich., will send free to any of our readers who expect to huy fence at any time, a thoroughly practical paring knife made from this wire. They do this as a practical illustration of what Page wire is, and witb it they send a new Page Fence catalogue describing all the styles for different farm, stock, poultry, lawn and park purposes, and the characteristics of Page Fence that make it superior to ordinary wire fencing.

It is expected that our readers will write for this free knife and catalogue, and upon arrival, it is requested that attention he given to the matter on pages 18, 19 and 20 of the book, which gives in concentrated form the real reasons why Page Fence is entitled to consideration; why it is more enduring, more resilient, hetter constructed and worthy of a better price than inferior fence that is made to sell.

To insure getting the knife, mention this publication when you write.

A GOOD FENCE—A GOOD INVESTMENT

No one article used on the farm represents more value in dollars and cents than the Farm Fence. No other item of farm necessity is so sure to pay good dividends as a good fence, properly erected, in the right place, and at the right time.

The lack of good fences, like the lack of other farm essentials, invariably results in serious loss, and unlimited annoyances. Of course there are farms that do not need to be entirely fenced, but it is hard to conceive of a farm in any section of the United States, that does not require a considerable quantity of fencing, for the most advantageous operation.

Farmers generally are awakening to the fact that good fencing is not a luxury, but an investment—an investment that pays from the start. In fencing, as in other lines, there are grades and qualities and the farmer who is led into buying a flimsy unreliable article, such as is sold on the something-for-nothing plan, is liable to be disappointed as to results.

After determining the service you require of the fence, perhaps the best plan is to be guided by the experience of others, and select a fence that has been tried and tested, one that is today a growing proposition, used hy thousands and hundreds of thousands of the best farmers of the country. For instance: the Fence known as the American, is one of the oldest Fences on the market, and without douht is more largely used today than all other styles of fence combined, and such a fence could hardly fail to meet the requirements, no matter what service might be demanded.

This Fence is manufactured in all weights, heights, and styles, and guaranteed for all purposes. It is sold hy responsible dealers in practically every town in the United States, and in the matter of cost is within the reach of all.

NEW MODEL INCUBATORS

Artificial incubation has now such a hold on the successful poultryman that to go hack to the old method would work a hardship on those people from which the business of rearing poultry could not recover.

It seems strange that in the past twenty years there has heen no appreciable improvement over the old hox contrived, oven pattern machine.

The first change particularly noticeable was that to the circular form but now comes an incubator not only of this pattern hut combining with some principles so novel, so at variance with the old accepted pattern and the results obtained are so marked and successful that it will he received as an innovation.

The heater does not differ largely from others, hut as the heat passes to the egg chamber here we find an entirely different construction.

Here the heat is deflected instead of radiated, throwing the heat currents outwards towards the circumference of the egg chamber where all will admit is the cooler portion of all incubators. But the novel feature of this machine is the open oscillating self ventilating nest for holding the eggs.

Just a wire hasket made of half inch mesh of circular form with flange around the hottom, so padded that when the clasp is locked it excludes all air around its circumference. Then the bottom of the nest is covered with a loose piece of flannel upon which the eggs are placed. This flannel regulates the ventilation to the egg chamber as near to nature's method as possihle to copy.

If in winter more flannel is needed, it can easily he placed and you maintain all the ventilation necessary. This nest is controlled mechanically hy an eccentric clasp attached to a lever working in a way that allows this nest to he lowered and swung out from the case for the purpose of turning the eggs, an operation at once so easy that a "child can operate it." This feature alone will greatly appeal to the women as there is no heavy tray to lift or jar the eggs in manipulation.

It is a well known fact that where conditions are right no more moisture is needed in an incubator than under a hen and this form of heat applying and ventilation seems to meet nature's requirements so accurately that almost perfect results are obtained without a particle of supplied moisture. These novel and valuable features commend this machine to every poultryman, for combined with this is the hatching, the record of bringing off more chicks, stronger and healthier chicks, than any machine ever placed on the market.

The New Method is manufactured and sold hy The New Method Incuhator Co., Morrow, Ohio, U. S. A.

RED TAG TREES AND PLANTS.

The Phoenix Nursery Co., of Bloomington, Illinois, have adopted a very unique plan to identify their Phoenix-grown nursery stock. Every tree, plant and shrub sold hy them now hears a red tag with the words, "Red Tag Trees, Phoenix Nursery Co., Bloomington, Ill., Trade Mark" in hlack letters. This red tag idea is original with the Phoenix people, and their couplet, "Look for the tag on every Phoenix tree—it is your protection and our guarantee," is already well-known among planters and is sure to hecome famous.

The Phoenix Company have been in the nursery business since 1852. Six hundred acres and thirteen greenhouses are now devoted to nursery purposes, and their greatly increased trade is pleasing evidence that people are more and more planting the hest stock that can be obtained.

The Phoenix catalogue shows a splendid assortment of fruit and ornamental trees, plants, vines and shruhs, and a copy may be had by simply mailing a request.

AGAIN THE PULVERIZING HARROW.

The Acme Pulverizing Harrow, manufactured hy Duane H. Nash, Millington, N. J., is to be advertised in our columns again this season. First appearance this issue. It has become a very popular implement. As indicated hy its name it is, above all else, a pulverizing harrow. It is a general purpose harrow, hut its popularity is due to its ahility to crush clods and pulverize level and fine the soil, making the perfect seed bed. The peculiar shape and hackward slope of its teeth or coulters, as well as its work, distinguish it from all other harrows. It is made entirely of cast steel and wrought iron, and is practically indestructihle. Mr. Nash sells on very liheral terms. He sends it freely on trial and takes it hack, agreeing to pay the freight charge if any one should not he perfectly satisfied. We commend the new ad to our readers' notice.

A YEAR'S SUBSCRIPTION FREE.

Readers who want to be up-to-date with the news of the world, as well as with the latest methods of farming, fruit-growing and poultry-raising will do well to accept the liberal offer, made on another page of this issue. A year's subscription to The St. Joseph Weekly News, and one year's subscription to FARM FOLKS, that bright, new farm and home weekly, for only 50 cents. Don't fail to read and respond to this ad.

We take pleasure in calling our readers' attention to the ad of the M. J. Wragg Nursery Co., found in this issue. The manager of this company, M. J. Wragg, needs no introduction either to our readers or to the horticulturists of the Mississippi valley. He has occupied many prominent positions in his own state, as president of the Iowa State Horticultural Society, and also as director on the State Board of Agriculture. He has heen connected for several years with several of the largest orchard plantings in our state, Missouri, and is considered authority along those lines. Mr. Wragg has lately taken up the specialty of landscape gardening, believing that the time is at hand when more attention should be paid to the beautifying of our home grounds, properly laying them out and planting them with the proper varieties of trees, plants and shurhs. Every builder of a home, either in the city or suburbs will find it a great advantage to have drawings, plans and specifications made of the grounds, laying out the walks, drives, etc., before work commences. There is nothing like a plan to work to and it is just as necessary in the laying out and heautifying of grounds to have a landscape gardener, as it is to have an architect to plan your house. We urge our readers to write and get his latest catalogue, which will be found a ready guide along lines mentioned above.

DO THIS NOW

Is the headline of an advertisement appearing in this issue, and should be read hy all spectacle wearers, spectacle dealers and agents. By straightforward and strictly square business methods the Dr. Haux Spectacle Co., of St. Louis, Mo., whose announcement this is, has become one of the largest mail order spectacle houses in the country, and we do not hesitate to recommend them to any of our readers who may be interested in their superior line of spectacles, which have become known the world over as the "Dr. Haux Famous Perfect Vision Spectacles" and are highly recommended hy their thousands of customers all over the owrld.

FARM TELEPHONES.

The rapidity with which the rural districts are being covered with farm telephone systems, has created an active interest among progressive farmers, ranchmen and fruit-growers. The Julius Andrae & Sons Co., 869 W. Water St., Milwaukee, Wis., have prepared a most interesting hook which contains full and complete information on telephones. This hook will be sent gratis to those who write for it.

ALMANAC FREE.

The Studebaker Almanac for 1905 is, as usual, full of valuable information of especial interest to farmers. In addition to statistical and other information, it contains a large number of practical recipes, and has revived some of the best sayings of old Josh Billings—the most genial and philosophical of all American humorists. A free copy can be ohtained from any Studebaker agent. If he cannot supply you, send a 2-cent stamp to the Studebakers, South Bend, Ind., and mention this paper.

Cedar Posts.—In this issue appears the advertisement of the South Chicago and Calumet Lumher Co., which will certainly interest many Fruit-Grower readers. Every reader of this paper needs posts for various purposes—for grape trellises, arbors, fence posts, etc.—and as this firm makes a specialty of furnishing these, the advertisement will he particularly interesting. This advertiser is a large lumber firm, which furnishes posts and poles of any length direct from the forest, and will he glad to hear from our readers who are interested. See the advertisement and address South Chicago and Calumet Lumher Co., 92 Harhor avenue, Chicago, Ill.

We have received many replies to our advertisement in The Fruit-Grower, and consider that it is paying for itself. We consider The Fruit-Grower is as fine a farm paper as we have ever seen.—C. C. Clemons & Co., Commission Merchants, Kansas City, Mo.

FENCE STRONGEST MADE. Bull strong chicken-tight. Sold to the Farmer at Wholesale Prices. Fully warranted. Catalog free
COILED SPRING FENCE CO.
Box 125 Winchester Indiana.

WE CURE ECZEMA
Salt Rheum, Tetter, Piles, or any skin disease. This cure is permanent. We will send you a 25c box free. Send 10c to pay postage and packing. **Empire Remedy Co., 419 Kansas Ave., Topeka Kan.**

Ruptured
Send for our
SINGLE $6.00 DOUBLE $8.00 RADICAL CURE TRUSS
On Free Trial
"THE ONLY PERFECT TRUSS." Totally unlike anything made. You Pay When Satisfied. WE TAKE ALL RISK.
C. BUCHSTEIN CO., 608 R 1st Ave. S., Minneapolis.

RUPTURE CURED IN 10 DAYS By a Scientific and Never-failing Process. No knife, no pain, absolutely no danger. IN TEN DAYS THE PATIENT IS SOUND AND WELL—cured to stay cured. Write for proofs, booklet, etc., FREE.
DR. W. E. RIGGS, 205-L, Altman Bldg., Kansas City, Mo.

Grand Island Route
SHORT LINE BETWEEN
St. Joseph and Kansas City
Direct line to Hiawatha, Seneca, Marysville, Kan.; Fairbury, Hastings and Grand Island, Nebraska.
Quick Time to California and the Pacific Northwest
C. T. HUMMER, C. P. & T. A.
S. M. ADSIT, Gen'l Pass. Agent.
Board of Trade, St. Joseph, Mo.

HOMESEEKERS' EXCURSIONS
If you want to visit Oklahoma, New Mexico, Arizona, Texas or any of the other sections of the Southwest in which fruit-growing is becoming such an important industry, investigate the low rate made by the
Santa Fe Route
ON FIRST AND THIRD TUESDAYS OF EACH MONTH.
The Santa Fe reaches every part of the Southwest, and with its frequent and well equipped trains and splendid roadbed, is best prepared to serve the public. For circulars or any desired information, address
W. J. BLACK, G. P. A., Topeka, Kan.
L. O. STILES, C. P. & T. A., St. Joseph, Mo.

Missouri Pacific Railway
Best Line Between Missouri River Points and St. Louis
FIVE TRAINS
EACH WAY DAILY
The Missouri Pacific lines traverse a vast section of rich, undeveloped country, presenting varied conditions of soil and climate adapted to every character of product. Booklet on Missouri, Arkansas, Louisiana, Texas, Indian Territory, Kansas and Nebraska will be furnished free on application.
H. C. TOWNSEND
Gen. Pass. & Tkt. Agt. St. Louis, Mo.

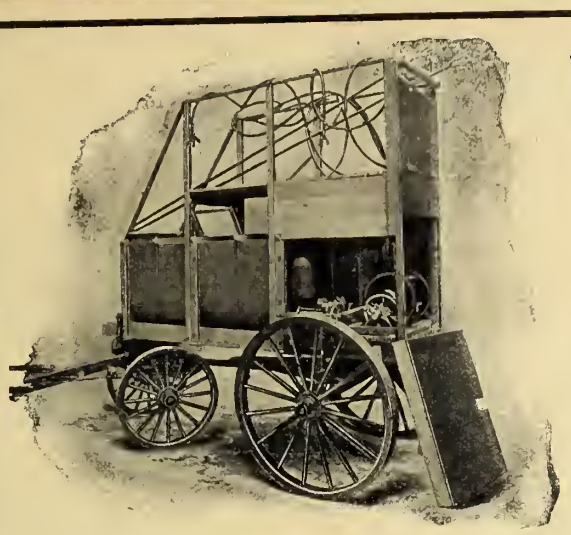
When writing to advertisers, always mention the Western Fruit-Grower.

K. C. S.
Kansas City Southern Railway
"Straight as the Crow Flies"
KANSAS CITY TO THE GULF
PASSING THROUGH A GREATER DIVERSITY OF CLIMATE, SOIL AND RESOURCE THAN ANY OTHER RAILWAY IN THE WORLD, FOR ITS LENGTH
Along its line are the finest lands, suited for growing small grain, corn, flax, cotton; for commercial apple and peach orchards, for other fruits and berries; for commercial cantaloupe, potato, tomato and general truck farms; for sugar cane and rice cultivation; for merchantable timber; for raising horses, mules, cattle, hogs, sheep, poultry and Angora goats.
Write for Information Concerning
FREE GOVERNMENT HOMESTEADS
New Colony Locations, Improved Farms, Mineral Lands, Rice Lands and Timber Lands, and for copies of "Current Events," Business Opportunities, Rice Book, K. C. S. Fruit Book
Cheap round-trip homeseekers' tickets on sale first and third Tuesdays of each month.
THE SHORT LINE TO
"THE LAND OF FULFILLMENT"
H. D. DUTTON, Trav. Pass. Agt. Kansas City, Mo.
S. G. WARNER, G. P. and T. A. Kansas City, Mo.
F. E. ROESLER, Trav. Pass. and Imig'n Agt., Kansas City, Mo.

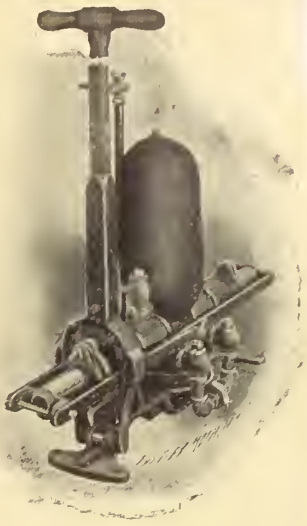
Brown Spraying Machinery

LARGEST LINE SPRAYING APPARATUS IN AMERICA

The illustrations here given show but a few of the celebrated Brown Spraying Devices. Our line comprehends every purpose of vine, plant, fruit and tree growers, from the small hand spraying devices to the largest power sprayers for orchard, park and field work. Particular attention is directed to the popular devices here shown. For the uses for which they are intended, nothing superior is manufactured. The entire Brown line consists of the highest grade of spraying machinery; they represent mechanical perfection. Tell us the character of work you have to do, and we guarantee to save you money and still supply you with the best and best-adapted spraying machine for your purposes.



Gasoline Engine Power Orchard and Park Rig.
Light weight, condensed mechanism, durable. Power beyond any possible requirement. Sprays 300 to 400 trees per hour. 250 gal. cypress tank. Best gasoline power spraying machine made.



Hydraplex Pump.
for tanks or barrels used in orchard spraying. Guaranteed to excel all other hand pumps in force, capacity, efficiency and durability. Sold separate or with 150-gal. cypress tank.

Get Our Sprayer Catalogue

It covers the whole subject of spraying, and illustrates and describes all up-to-date practical Spraying Devices and Appliances. It is mailed free. Address

Auto-Spray No. 3.
Whitewashing and General Purpose Sprayer. Extra heavy galvanized steel 8-gal. tank. All brass pump. A sprayer with great power and capacity.

Auto-Spray No. 1
Compressed Air Sprayer. 4-gal. air and liquid tank with brass air pump. Runs automatically from 5 to 15 minutes.

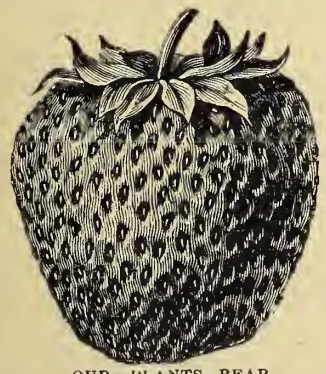
Four or Six-Row Potato Truck and Orchard Sprayer.
10-gal. air chamber, 65-gal. tank. For one or two horses. Orchard equipment to suit.

E.C.BROWN & CO.

271 State Street

Rochester, N. Y.

Chattanooga Nurseries



OUR PLANTS BEAR LARGE CROPS

We have the largest supply of

Strawberry Plants & June Budded Peach Trees

that we have ever grown. All graded to the highest standard.

SEND US A LIST OF YOUR WANTS

and we will send you the lowest prices you ever had for strictly first class stock. We have a fine lot heavy two-year Apple, also one year Apple and one year Pear, Apple Seedlings and Apple Grafts, all very fine at bargain prices.

Write for our new illustrated and descriptive catalogue of everything for the fruit grower, and the Family Orchard and Lawn for 1905. Free for the asking.

OUR TREES BEAR LARGE CROPS FINE FRUIT.

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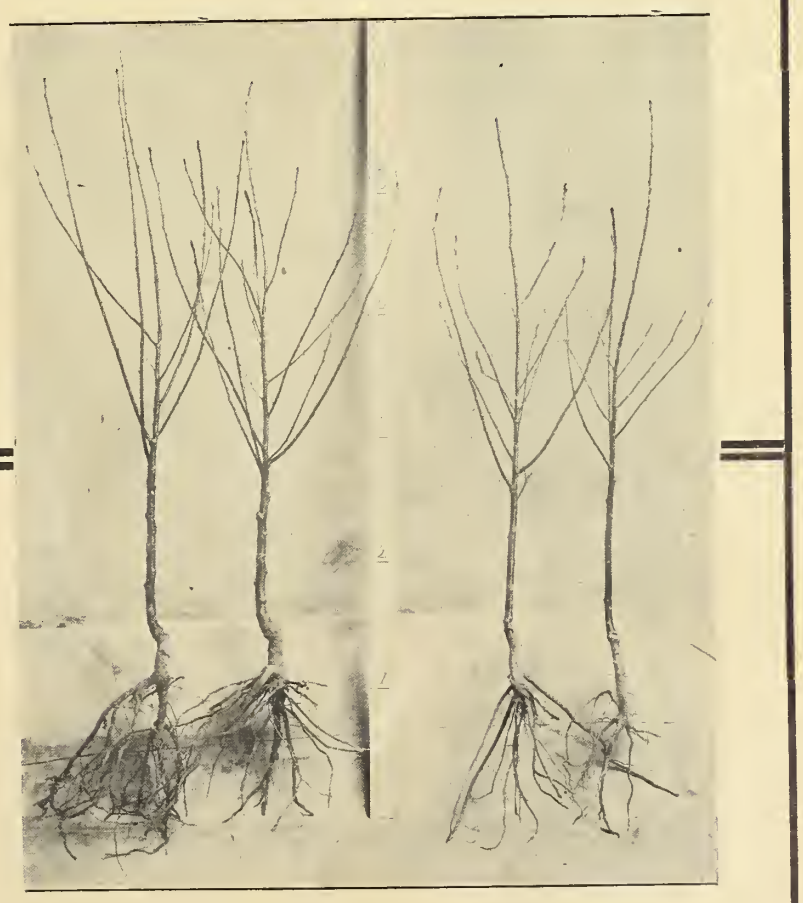
CHATTANOOGA, TENNESSEE

KNOX NURSERIES

ESTABLISHED IN 1851



One Year Cherry Trees for Spring Planting

Those whom we did not supply last fall we hope to furnish next spring. We have pleased every customer this last fall and have many letters containing such expressions as "Cherry trees are the best we ever saw." "I have no idea they were half so good," "One must see them to appreciate the quality." "Cherry gave perfect satisfaction," etc. Well pleased customers are our best advertisement everywhere we have sent one year cherry trees. Our one-year cherry are the finest this year that we ever grew—they are simply magnificent. Fine tops and perfect roots make an ideal tree. Send for illustrated circular telling all about them. A postal with your request is all the charge. Let us send you a sample for comparison with trees from other nurseries. We also have a fine lot of apples, peach and a general line of nursery stock. Planters will do well to get our prices before buying.

H. M. SIMPSON & SONS, VINCENNES, INDIANA

Irrigable Public Lands

To be Located Under the "Carey Arid Land Act," Where There May be Scientific, Intensive, Reliable Farming.

Copyright, 1905, by J. W. Gregory.

Editor Fruit-Grower: I have made arrangements whereby I can offer to every reader of your publication, who is legally entitled to take advantage of it, an opportunity which never can again be duplicated. Some thousands of acres of finest irrigable land, in Big Horn Basin, Wyoming, with a perpetual and adequate means of irrigation for every acre, are now ready for location, and I have secured the right to locate parties thereon, so long as the supply lasts.

These are lands reclaimed by the state of Wyoming, under what is usually known as the "Carey Arid Land Act," introduced into the United States Senate by Senator Carey of Wyoming hence the name applied to the law. Under its terms the state has withdrawn from settlement certain lands, caused them to be provided with adequate irrigation works to insure a perpetual water right and fixes the terms on which they are disposed of.

Every man—and every woman except a married woman not the head of a family—over 21 years of age and a citizen of the United States, or who has declared intention to become such, may secure 40, 80, 120 or 160 acres of this land—so long as the supply lasts. No one can locate more than 160 acres, and a location will not be allowed on less than 40 acres. The cost, terms and method of securing these lands are given further along.

Where the Lands Are.

These lands are situated in what is called the Big Horn Basin, in Big Horn County, Wyoming, adjacent to the National Yellowstone Park on the east. This basin is a broad valley, crossed by numerous great mountain streams and completely surrounded by lofty mountain ranges, whose snow-capped wails lessen the heat of the long, sunny summers, while the effect of the warm winds from off the great Japan current in the Pacific extends to this section and modifies the coldness of winter, so that the mercury rarely falls to zero in the Basin.

Thus there is formed a great natural amphitheater — once an immense fresh-water lake, before its waters cut a few gashes in the mountain rim, through which the rivers now find their way out. The receding waters of the ancient lake left broad beaches, which are now level terraces, affording the finest stretches of land suitable for irrigation. There is so little rain and snowfall in the basin proper that there are, on the average, 312 days of sunshine per year. In that latitude the days average so many hours of sunshine that, on the whole, the effect on the production of crops is very marked. Notwithstanding the scanty precipitation in the basin proper, there is sufficient growth of vegetation to furnish pasturage during a large part of each year for immense herds of horses, cattle and sheep. At those times of the year when pasturage in the lower grounds becomes scant, the flocks and herds find rich sustenance on the lower slopes of the surrounding mountains.

Farming and Stock Growing.

The fall and winter pasturage on the irrigated alfalfa fields, supplementing the broad acres of grazing lands and these, supplemented by the immense growths of alfalfa, oats, barley, Indian corn, Kaffir corn, sugar beets and all other sorts of forage and grain crops, will make this one of the most famous stock countries in the world. The irrigated lands lie so that at least a large proportion of the farmers may have practically unlimited range near at hand.

The three elements necessary to farming are soil, sunshine and water. The western soils are always deep and fertile. A region being arid, it follows that it has clear skies, affording a minimum of impediment to the sun's rays. The dry, warm air means freedom from frosts, hailstorms and damaging rains upon harvested crops. Now, combine with these an abundant supply of water always at hand, so that the farmer can dismiss Jupiter Pluvius, dissolve relations with the weather clerk, and make his own light shower, or soaking rain, just when and where he pleases, and it must be evident that one has control of all the elements of scientific farming and is assured a full crop, every year, and of the best quality of product, unstained and uninjured by unseasonable wettings.

All kinds of stock do better—and so do people at that healthful altitude of 4,000 to 5,000 feet, in a dry, pure atmosphere. Nights are never sultry, and one never feels either heat or cold so much when the air is clear and dry. Thus stock requires the minimum of housing and feed for the maximum of thrift, and people enjoy the maximum of health and comfort.

Some Products.

Corn produces 35 to 50 bushels per acre, but alfalfa, with its three annual cuttings of hay, its honey yield and its aftermath pasturage; wheat that grades "No. 1 hard" and produces 70 bushels to the acre, that weighs as high as 63 pounds per struck bushel; oats and barley of equal excellence; immense potatoes, yielding 300 to 700 bushels of the finest quality, rivaling the Greeley crop; sugar beets of highest quality; winter apples unexcelled for yield, size, beauty, color, flavor, keeping and shipping qualities—these are crops upon which the Basin prides itself and upon which it took first prizes in competition with the world at the recent St. Louis World's Fair. Peaches, cherries, plums, grapes, currants, strawberries, as fine as grow anywhere; melons unexcelled by the Rocky Ford product; alfalfa; honey, by thousands of pounds and clear as crystal; hogs and poultry, which (alfalfa fed) have no cholera to trouble them. These all constitute but a partial, imperfect, hasty list.

An interesting item is this, that each citizen, though having but a five or ten acre tract, may have a fish pond a few feet in diameter to supply his table with fresh fish every meal and produce more profit that a rich eastern acre.

Reclamation and Location.

The processes of reclaiming these lands are chiefly as follows: A tract of land of suitable surface and accessible to water supply, being formally brought to the attention of the State Land Board, presided over by the governor, the lands are segregated—that is, set apart and withdrawn from entry and settlement until investigation can be had. The state engineers make careful examination and make a full and careful report, with maps and plats, of the lands that can be irrigated, the canals, ditches, reservoirs, etc., necessary, and the source and extent of the water supply. Thereupon the state fixes the price of the water right per acre at such figure as will pay for the works and cost of settlement, and contracts with some responsible company, heavily bonded and constantly supervised by the state, to construct the works and settle the lands; because the company cannot hold and own the lands, but must secure settlers to buy the water rights in order to get its pay for its work.

The state has fixed the prices of the "Carey Law" lands at the nominal figure of 50 cents per acre, to pay for surveying, platting, examinations and other necessary routine work. The price fixed for the water right on these lands in Big Horn Basin is $30 per acre. At first blush this may seem unnecessarily high; but as the average cost of the U. S. government works thus far has been $27.26 per acre, and as the price in this case was fixed by competent, disinterested state engineers on a cost basis, and as an acre of good irrigable land, with a perpetual water right, in any part of the west, is worth not less than $100, and, in most favored localities, upward of $1,200 per acre—the average value being about $300—it will not take long to realize that, as these lands are really excellent and the water rights are ample and perpetual; so that they would certainly grade up to average value, a tract of this land is a snap for the lucky party who can get it at the state price. I am safe in predicting that within a very short time after the lands are all taken, no one can buy an acre of it for less than $100; and the price will soon exceed that figure.

Basis of Value.

It has been demonstrated that every acre of properly irrigated land produces an average of four to sixteen times the annual crop value produced by the best non-irrigated land, the ratio varying with different crops. If you should learn that the best four acres in your vicinity could be bought for $30.50—or a larger tract in that proportion—the chances are that you would manage to secure it.

This price of $30.50 pays in full, once and for all, for land and water right. There is no annual water rental.

Terms and Conditions.

Not only does the state fix the price of land and water-right and limit the amount that any one person can buy to 160 acres and forbid the construction company holding or trafficking in the land, but it can not sell the land to anyone until it brings the water to the land. It can, however, let the prospective purchaser select his tract, and can and will make a binding contract with him that he shall have the right to enter that tract as soon as the canal is built to it. Making this choice and contract is called "locating" the land. This is what I have secured the right to do: To locate some thousands of acres of the finest land, with perpetual and adequate water right.

A comparatively small area is already accessible to the water and the party taking it may enter upon it at once and begin farming it this spring, but most of it will not have the water until toward fall.

The Way to Get It.

The first thing is to make the location. For this I charge a location fee of 50 cents per acre. This is not done by the canal company and does not go to them. It comes to me and I receipt for it. A contract is then made by the company, in duplicate, one copy to the prospective purchaser of the land, one copy to me and one retained by the company. This contract binds the company to hold for you, the purchaser, the tract of land you have selected until they get the water to it. No more money is paid by you until the company sends you notice that your water is ready. Within 30 days after such notice you must make formal entry of your selected tract of land in the office of the District Clerk for the county and pay 25 cents per acre on the land, and at least one-fifth the purchase price of the water-right. Within one year from entry you must put at least one-sixteenth of the tract under cultivation, and within the second year another sixteenth, and by the end of the third year secure your patent to the land.

While you may thus get title to your land in three years you may pay for the water-right in five payments, if you wish; or you can pay it in two payments, or all cash down, if you prefer. Interest on deferred payments, six per cent. At the time you make your first payment my receipt for the 50 cents per acre, location fee, will be received by the company as so much cash, in making the payment. Thus the location fee is not an extra cost, but simply operates to set aside your chosen tract of land and hold it for you until you can file upon it. In other words, in consideration of my having found them a settler for the tract of land, they will give you credit, out of your first payment, for the location fee of 50 cents per acre.

About Seeing the Land.

It is better that each person should either see the land himself, or have some trusted friend see it, before locating a piece. One small excursion party of such land-seekers has already gone out and another will go on next Tuesday, February 21st, at the low cost of $15.00 for the round trip. Tourist Pullman fare, $3.50 each way. Tickets good for 21 days for round trip. But as the livery facilities for getting from railroad out to see the land might easily be overtaxed by too large a crowd, it is advisable for three or four or more to get together and send one of their number to examine for them. Meanwhile any who may choose to do so can forward location fee, stating whether land already under irrigation and ready to begin work on is preferred, or that which will be reached later in the season, giving more time to get ready for first payment. I will locate parties on the best lands left open at the time the fee is received; will locate parties on adjacent tracts if desired. When you go to look at it, or send some one, if you desire to change to some other tract, not yet taken, I will change your location without cost; or, if not satisfied with any of the land, I will return your fee in full.

Railroad within six miles of the land at two points. Two more railroads building toward it. Both passenger and freight rates into the Basin are low. There are towns scattered all through the region. The state furnishes a school to every settlement where there are as many as five children. There are many churches forming in the Basin and one college located. Some thousands of acres alongside the lands I am proposing to locate have been farmed the past few years with great success. A man who can manage to make his first payment and get his first one-sixteenth into cultivation, can, with energy and application, make his land support him and pay itself out. When one has paid for his land and water-right he has no further annual payment to make other than the slight cost of superintendence, repairs, etc.—a few cents per acre for each land owner. The farmers own the whole irrigation works and fix this cost themselves. It will probably not exceed 10c per acre.

First Man First Chance.

This month I am making this offer to Fruit-Grower readers only. As it will take but a few hundred locations to take up all the land, the man who waits may get land and he may get left. By sending in the fee and having the land reserved you can then take your time about going to see it and make changes, or let go of it entirely, if not satisfied, as you please. I had thought of suggesting that those who wished might forward their fee to James M. Irvine, as the head of The Fruit-Grower Family; but as he has labor troubles of his own and as he vouches for me, it would be an imposition to trouble him. As next best thing it can be sent to me at the same office.

Let me make the suggestion that $20 will reserve 40 acres of this land. When thoroughly under cultivation and irrigation that is plenty land for four to eight families; because the best irrigation farming is intensive. It means dense population, good roads, rapid transit, telephones, free mail delivery, amusements, the best social and educational advantages—the comforts and conveniences of city life, combined with the independence and healthfulness of the farm. Beside, if you don't want your forty acres at all, when the time comes to file, there will be a dozen anxious to take it. I have omitted to state that vehicles and a competent guide will be furnished free of cost and these lands shown to those who go out to see them on any of our excursions. The round trip rate, St. Joseph and neighboring points, and return, $15, gives the seeker 21 days for the trip, if desired. In order to provide vehicles, it is important to know just how many are going. In order that all may be accommodated—and not too many be on hand at once—persons out of town should write or wire, and I will answer at once. Any in reach should call without delay. First applicants, the first consideration, strictly. Get up a group and send a representative. You can make sure of getting the best there is left by forwarding $20 for each 40 acres, if desired, not exceeding 160 acres to any one person, and inspect the land and satisfy yourself later. As 1,000 applicants for a quarter section each could not all secure their desired tract out of the lands available, and as the Fruit-Grower has 40,000 subscribers and several times that number of readers, and as scores of people will jump at the chance to take your 40 acres, or more, if you decide you don't want it, it will be well to lose no time in nailing a piece if you think you may want it.

It is well to remember that each 40 acre tract of this land is the equal, both in productiveness and value, of 160 acres of first-class non-irrigated land. With 160 acres of this you have the full equivalent of a whole section of the best non-irrigated land in your vicinity. You know whether you would like to have something of the sort. Through the expedient of a small location fee you may make sure of getting it—now. When this land is taken no such opportunity to so many different persons can ever occur again. I am acquainted with the status of irrigable lands throughout the west and know this assertion to be true. Those who wish to go to see the land and who may not be accommodated in the excursion next Tuesday, the 21st inst., will be accommodated at the same rates of fare on March 7th, or March 21st—all who may wish to go. The important thing is to make sure that you have a good piece of the land waiting for you. Lands under proposed government ditches are already all taken up, and even adjacent lands entered.

J. W. GREGORY,
7th and Charles Sts., St. Joseph, Mo.

40 acres of good irrigable land equal 160 acres of first-class non-irrigated.

160 acres of good irrigable land equal 640 acres, a square mile, of non-irrigated,

160 acres good irrigated land, well located and rightly handled, will support 100 families in comfort and substantial independence. Truly, 160 acres must be plenty for any one family to start with.

Any acre of good irrigable land, with adequate perpetual water-right, in any fair location, is worth $100.

The average value of such land is now about $300 per acre, and steadily increasing.

The irrigable Public Lands described in the surrounding article will rank above average.

You HAVE a chance to get 40 acres, 80 acres, 120 acres or 160 acres of such land at $30.50 per acre in full for the land and perpetual water-right, and it will cost but a deposit of but 50 cents per acre, location fee, to make location of a choice tract—that to be a part of your first payment, and plenty of time to get balance of the first payment ready.

Statement by Mr. Irvine.

Judge Gregory has had his office with The Fruit-Grower for nearly three years past and has been known to the manager of this paper for some fifteen years. He resided for many years in Southwest Kansas, an irrigation region, and thus became schooled in its practical workings. In that time he took so active and prominent a part in national irrigation affairs as to become well known to and associated with all those most prominent in that interest. He helped organize the National Irrigation Congress, serving on its executive committee six years. He certainly has had the experience and has the ability to qualify him to make and superintend selections of suitable land for those who may wish to avail themselves of his services. I have already arranged to take a location of the land, having long heard the Big Horn Basin highly spoken of, and good irrigable land at the price fixed by the State Land Board in this case cannot but be a prize that is worth winning. Parties who may choose to remit location fees to Judge Gregory and have him select land for them can rely upon their interests being carefully and conscientiously looked after.

JAMES M. IRVINE,
Editor The Fruit-Grower.

Owing to continued predictions of severe weather, it may be better to postpone the trip to Big Horn Basin until March 7th or 21st.. Will accompany a party of three, however, any of the dates given.

To the Friends of The Fruit-Grower

We invite the attention of every reader of The Fruit-Grower to the article under the heading of "The Family Circle" on page nine of this issue. It has practically been decided that a change in the subscription policy of The Fruit-Grower will be made, and that the subscription price will be advanced. Announcement will be duly made after we have heard from our readers on the points in the article mentioned above. At this time, however, we wish to state that

AFTER MAY FIRST, 1905
Our "Blocks of Five" Offer and the "Three Years for $1.00" Rate
WILL BE WITHDRAWN

As we have often stated to the members of "The Fruit-Grower Family" our "Blocks of Five" offer was made merely as an inducement to place our paper in the hands of new readers, and the price will scarcely pay the cost of *white paper alone* in a magazine like The Fruit Grower.

We want the names of all the *real live fruit growers* we can secure at this rate between now and May 1, for we believe that any progressive horticulturist will gladly pay regular rate after he has read The Fruit-Grower for one year. So if you have friends or neighbors who should read The Fruit-Grower, we hope you will notify them that this is the last chance to secure a dollar paper at 20c for the first year.

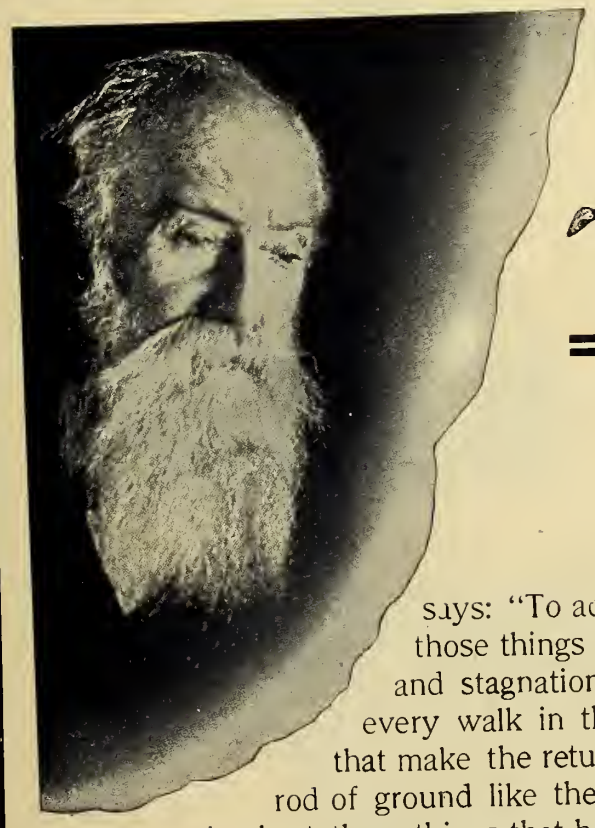
In this connection we desire to thank our old subscribers for the many efforts they have put forth in our behalf, and we hope the contemplated advance in price will not cause us to lose any of our old friends.

If you are now a paid up subscriber, we will give you the opportunity to renew for *three years more* at the present rate of *"Three Years for $1.00"* at any time *before our new rate goes into effect.*

This proposition will enable all friends of The Fruit-Grower to place themselves in a position where an advance in rate will not affect them for at least three or four years.

We hope that everyone will read carefully the article mentioned, on page 9, and write us.

THE FRUIT-GROWER CO., St. Joseph, Mo.



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LARGE SIZE OF FRUIT.
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FIRMNESS OF FRUIT.
VALUABLE FOR MARKET.

Department of Agriculture.

BUREAU OF PLANT INDUSTRY.

WASHINGTON, D. C., Nov. 19, '04.

THE TEMPLIN CO., Calla, O.:

DEAR SIRS:—"I have recently learned that you have purchased the entire stock, control and right of dissemination of the 'Cardinal' Strawberry from Mr. George J. Streator, of Garrettsville, Ohio. From what knowledge I have of this new berry I think you have obtained a valuable acquisition to the list of choice Strawberries which we now have growing. It was my privilege to examine specimens of this new Strawberry in 1903, when I found it to be a berry of excellent quality, flesh quite firm, juicy, flavor sub-acid, sprightly, aromatic. It is evidently a good shipper, and in every respect a very promising berry."

Yours truly,
G. B. BRACKETT.

THE TEMPLIN COMPANY.

"CARDINAL"

CALLA, OHIO.

Ohio Experiment Station.

WOOSTER, O., Sept. 10, '04.

THE TEMPLIN CO., Calla, O.:

GENTLEMEN:—"Regarding the 'Cardinal' Strawberry I will say that we had fall set plants in fruit here this season, and judging from what we saw here, and at Mr. Streator's place, I am of the opinion that it is a very valuable variety, particularly because of its productiveness, fine appearance and firmness."

"We have a report on Strawberries in press, and when this is out you will be at liberty to copy whatever you choose from our report on the 'Cardinal.'"

Yours very truly,
W. J. GREEN.

Cardinal was one among a very few varieties of Strawberries that were reproduced in wax, and exhibited by the United States Government, at the Louisiana Purchase Exposition, in St. Louis.

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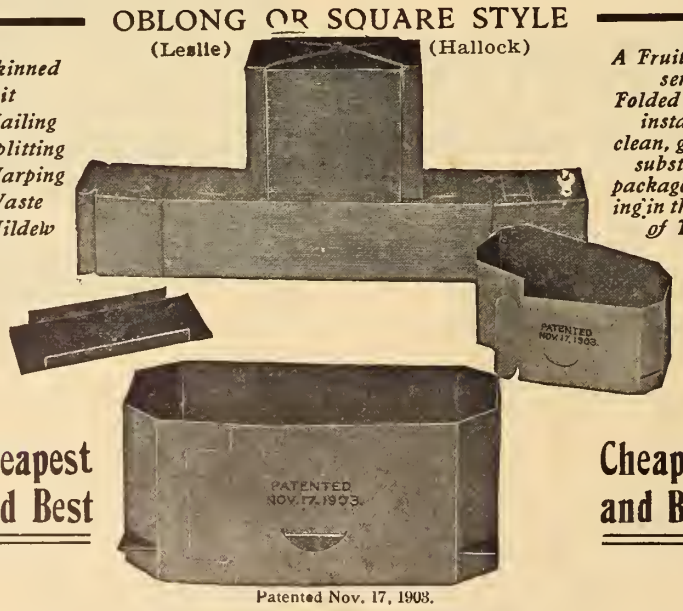
A Fruit Preserver—Folded in an instant—a clean, glossy, substantial package, aiding in the sale of Fruits.



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The Western Fruit-Grower

An Illustrated Monthly Magazine For Progressive American Farmers.

Volume Sixteen ST. JOSEPH, MISSOURI, FEBRUARY, 1905. Number Two

The Training and Pruning of Trees and Vines

By Professor Charles A. Keffer, Tennessee Exp. Station

The method to be adopted in training a fruit tree depends upon its fruiting habit and the ideals of the trainer. Plants that bear their fruit on wood produced the previous year, like the peach, or on wood of the current year that shoots from one-year-old wood, like the grape and quince, can be much more severely pruned, and pruned to a more open form, than such trees as the pear and apple, which produce fruit on spurs of several years' duration.

Pruning is the removal of shoots or branches. Uusually it is done while the tree is dormant, but it may be done in the case of orchard trees at any season of the year. The best time is just before growth begins in the spring, or during the first month of the growing season; for at that time the wounds made begin at once to heal by the development of the growing layer between wood and bark. As that is a busy season it is seldom that the fruit grower can do his pruning then. In this climate the winters are mild and no danger is to be apprehended from freezing, and the work of pruning can therefore be done during any warm day throughout the winter. Scars made by cutting away large limbs should be painted as a precaution against decay of the heartwood, but branches of less than an inch in diameter are usually left untreated.

In the removal of a branch the cut should be made parallel to the part which remains. This will frequently make a larger wound, but the wound will heal more perfectly and quickly, and no stub is left behind. Orchardists generally use pruning shears for branches of one inch and less in diameter. A very useful tool, especially for peach pruning, is the long-handled pruner—a shear with wooden handles about two feet long. It does not admit of as perfect work as a pruning saw, but the peach heals easily, and the work can be much more quickly done with shears than with saws. These shears can be bought of the seedsmen for 75 cents per pair. For grape pruning there is nothing better than the German all-steel pruning shears, which cost from 75 cents to $1.25 per pair, according to size. There are several forms of cheap shears on the market with which good work can be done, but if they are used it is well to buy at least two pairs, as they are easily broken.

Pruning vs. Training.

There is to be noted a considerable difference between pruning and training, the former word having the more restricted meaning. Pruning is the work of a single operation, or at most of a single year. Training is the work involved in bringing a tree or vine to its permanent form; it includes, therefore, several prunings, or as many operations as may be necessary to secure the desired form. The training of an open-headed peach tree, for example, usually requires at least three years from the time it is set in orchard; its pruning is the cutting done upon it at any one time. Unfortunately the two words have been used interchangeably, and this has given rise to some confusion.

Whatever system of training may be decided upon, the object of the grower is always to put the fruit into the best relation to light, so that it shall be full-sized, full-colored, full-flavored. At the same time the strength of the tree and its symmetry are determined by its training. One may have the best possible distribution of light, and yet badly forked main limbs may make the tree too weak to carry the load of a full fruit crop. And one may have good forks and perfect light adjustment, and the crown may be so one-sided as almost to indicate a short life for the tree. These facts suggest the importance of at least an annual pruning from the time the orchard is set; for in all fruit trees the main limbs determine the shape of the tree, and these are formed during the first few years of the orchard's life. If they are carefully spaced in the circumference of the crown, and along the stem, and if they make a perfect union with the trunk, a perfect skeleton is secured on which to build the framework of fruiting branches. Subsequent thinnings will be necessary to obviate the struggle among the branches for light that every tree crown witnesses, so that even in mature fruiting trees the annual pruning may not be safely abandoned.

The grape, peach and quince bear their fruit on one-year-old wood, or on shoots from one-year-old wood, and therefore not only may they be pruned severely, but they admit of more precise training than do the spur-fruits. Both the grape and the peach are apt to overbear, and this fault is largely prevented by heavy pruning, the removal of much of the fruiting wood being practically a thinning of the crop.

Fruiting is an exhaustive process to the tree. The biennial fruiting habit of the apple is largely due to the fact that to produce a heavy crop requires all the tree's energy, and it has not strength enough while maturing a fruit crop to form fruit buds for the following season. The entire summer is required to make a fruit bud. Hardly have the petals fallen from the cherry and plum trees before the making of the buds for the following year begins; hence the great importance of keeping the trees always in vigorous condition.

The Peach.

At the experiment station a few blanks in the peach orchard were filled with one-year-old trees last spring. The nurseryman endeavors to make his trees as large as possible, size being to the purchaser a sure indication of vigor. But the tree is often too high and is badly forked. Its crown is therefore entirely cut away, and buds along the stem will develop into shoots that will form the framework of the tree.

Often a one-year-old peach will make as many as a dozen shoots its first year in orchard. The trunk is made short by pruning—eighteen inches is ample height. During the first winter the training of the peach tree begins; and notwithstanding the fact that the young trees will each have made many shoots, hardly one in a hundred will have placed them in an ideal postion, and the grower can therefore only approximate his ideal.

FIGURE 1

For the peach tree, his ideal skeleton may be an inverted tripod, and a very good form it is; but that implies three branches equally distant from one another in the circumference of the crown; a condition rarely met with, though frequently approximated. Each tree will be a separate and distinct problem, and the wise grower will recognize at the outset that individuality is a characteristic of plants, as of men. It will often be best to select four limbs for the skeleton, and occasionally even more than four will be retained. The basis of selection is always the same—that the branches saved to the tree shall be of as nearly equal distance from one another in the circumference of the crown as possible, and that each have a strong union with the trunk. Avoid forks that will split, which are usually forks that form a narrow angle. All the lateral shoots may be cut away the first winter, leaving only the bare skeleton. The new growth will be the more vigorous for this heavy pruning and will be disposed all along each arm, giving a wide range of choice in the saving of branches the second winter. Each of the limbs saved is cut back to a length of from twenty-four to thirty inches. It seemed very severe pruning, but the tree is the better for the heavy surgery. The second winter two or three shoots are left to each limb, being spaced as wide as possible, and each shoot is headed back from one-half to two-thirds. Figures 1 and 2 illustrate mature trees that set their first full crop of fruit last spring. A careful study of these pictures will show that the tree has been trained to its present open form by annual pruning, in which many branches were entirely removed and those retained were heavily cut back.

FIGURE 2

FIGURE 3

On April 20 there occurred a freeze, fortunately very local in extent, which entirely destroyed the peach crop in the vicinity of Knoxville. This misfortune gave an opportunity to head in the peach trees, bringing their fruiting wood nearer the ground and renewing the crown, as grapevines are renewed. Figure 1 shows that the early leaves had reached full size when the work was done, and Figure 2 gives an idea of the severity of the pruning.

Figure 3 shows one of the trees which were severely pruned after the early leaves had formed, the last photograph having been taken forty days later. Its vigorous growth shows that no injury was sustained by the severe late pruning.

Since the fruit of the peach is borne on one-year-old wood, no crop is lost by heading in a tree after its crop is destroyed by a late spring freeze. The new growth produces fruit buds exactly the same as if the tree had not been headed in. The vigorous shoots which follow severe pruning will usually be less fruitful than the new wood under usual conditions, but enough buds will form to give a good crop.

The advantage of the method is manifest. Even with the close pruning practiced yearly in the experiment orchard, five-year-old peach trees are now from twelve to fifteen feet high. The trees that were cut back in April were from five to seven feet high when pruned. On the unpruned trees the fruiting wood is thus in some cases fifteen feet and more from the ground, making tall ladders necessary in picking, while in the pruned trees next year's crop may be largely gathered from the ground. The short, heavy growth that results from annual pruning is much stronger, better able to carry a full crop of fruit, and less liable to split in the forks, than unpruned or lightly pruned trees. The practice in the experiment orchard is severe annual pruning, and in addition a heavy cutting back in years when the crop is destroyed by late frosts; and the healthfulness and vigor of the trees warrant the practice.

The Apple.

In training the apple the object in view is to bring as many small permanent fruiting branches, called spurs, into favorable relation to light as possible. There is the same need for a good skeleton as in the peach, and it is equally important, if not more so, to preserve the symmetry of the crown but the ultimate purpose is to have all the main limbs supporting as many spurs on their several branches as can be given light and room. An ideal apple tree would be so open that when in full leaf the shadow made by its crown would be dotted everywhere with sunshine—light and shade alternating like the squares on a checkerboard. Under such circumstances the fruit spurs on the lower inner branches would yield fruit of almost as nearly perfect color as those in the top of the tree. But there is danger of sun scald when the crown is too open, so that this ideal condition is only approximated in practice.

Two methods of training may be followed. The tree may be trained to an open head, similar to those of the peach trees illustrated, or it may be trained to a central stem. In the latter case the branches are well distributed along the central stem and in the circumference of the crown, insuring a well-balanced crown and plenty of room for each limb to develop a system of branches. The apple tree in old age comes finally to a rounded or flattish crown, but in youth many varieties are erect in habit. The erect grower in its annual pruning should have the greater part of the one-year-old wood cut out, leaving such branches as point outward, in order to secure a more open head. The spreading growers, on the contrary, must be headed back, with a view to making a closer crown than they would normally form. Vigorous young apple trees will make from two to four feet of new growth per year on all the leading branches. If the new wood matures well the terminal bud will make the strongest shoot the following spring, and the buds immediately below it will form good shoots also, leaving a long stretch of bare branch below them. The unpruned limb is thus too tall and slender to hold up its branch, and breaking or bending, with consequent lack of symmetry, follows.

Each year, from planting until a good crop is produced, the new growth on the apple tree should be thinned out and cut back, so that the tree when old enough to bear is stocky, strong, comparatively short-branched, and symmetrical. In vigorous young trees the new shoots may be headed back from one-third to two-thirds their length, and fully half the shoots made will often be entirely cut away. No rule can be given. Each tree is to be studied, and the grower should endeavor to make the best possible fruiting machine of every tree in his orchard. He cannot do this if he predetermines the exact shape of all his trees. He may waste much time and energy in developing a central stem in an apple tree that wants to form an open head, and the result will never justify the effort. Make of each tree the best form possible in that tree. Help the tree in its development and it will give the best returns.

The apple, like the peach, does not suffer from late spring pruning. In the annual pruning of the orchard, which was done during the warm days of March, a Jonathan apple was overlooked, and on May 10 it was in full leaf. There were many cross branches in its crown, and the leaders showed bare below their points of new growth. The pruning necessitated much cutting away of small branches, and a few limbs that were no longer useful were removed, so that the ground was quite covered with wood cut out, but the tree has grown vigorously and is the equal of any of its winter-pruned fellows.

The Quince, Pear, Plum and Cherry.

The quince is but little grown in Tennesse, but every orchard should contain a few trees. It is best trained to an open crown, and in the annual pruning the strong new shoots should be headed back about half their length. The quince is a very erratic grower. Oftentimes a new shoot will grow directly through the crown, rubbing against a half dozen limbs. To correct such evils and to maintain symmetry require the watchful care of the grower.

The training of the pear is very similar to that of the apple. Very few pears are spreading in habit, the great majority of them being very erect, like the Kieffer, or of pyramid-form, like the Seckel. The Kieffer requires heavy annual pruning until a big crop checks its great growth. In the experiment orchard the new growth is headed back from one-third to two-thirds its length, and the topmost bud, after pruning, always points outward. More than half the new shoots are entirely cut away. Even with this severe pruning the crowns seem very thick. One heavy crop, however, bends all the main limbs outward, and the question of light distribution is thus quickly settled. Dwarf pears require very little pruning, a slight thinning out each year being all that is necessary.

The plum and the sour cherries produce fruit on spurs and on new wood, and their training is comparatively simple. The heavy crops of the plum bend their branches outward, and if, during the first four years, a good skeleton has been formed, whether to central stem or open head, little pruning will be necessary thereafter save to maintain symmetry and to prevent rubbing by crossed branches. Many of the European varieties of plum make long shoots during youth, and these are best cut back so as to insure a strong limb, able to bear heavy loads when the tree comes into fruiting. The Japanese plums resemble the peach in their habit of growth and are apt to form an open head with little training. The American plum, of which the Wild Goose is the best-known variety, are like the sour cherries in their tendency to bushiness. Both cherry and plum can be safely left with a thicker crown than almost any other fruit tree; but it is well while they are young to see that their main limbs are placed well

FIGURE 4

apart, and it is necessary every year to cut out much of the small growth, or crossed branches will be formed that will necessitate heavy surgery later on. The sweet cherries make comparatively few branches, and their training consists principally in heading back the long terminal shoots each year, to make a more compact head than would otherwise be formed.

The Grape.

No other fruit lends itself so readily to the pruner's art as the grape, and many well established systems of training have been developed. The simplest of these is the long-arm short-spur system (Fig. 4), and this is the most commonly used. The experiment vineyard is only four years old from cuttings, and the spurs in figure 4 were made in the annual pruning last winter. The grape pictures in this bulletin were all made from photographs taken April 19, and all are of Lindley vines. In figure 4 the new growth is seen to be from short spurs. In the pruning, which was done in February, all the new growth was cut back, leaving not more than two buds to the spur, and about half the shoots were cut out entirely, so that the spurs are about ten inches apart on the main canes. In the plant photographed many new shoots formed between spurs, and these should all be rubbed off. The pruning of this vine hereafter will be to cut off the outer shoot on each spur, and reduce the inner shoot to a length of not more than two buds.

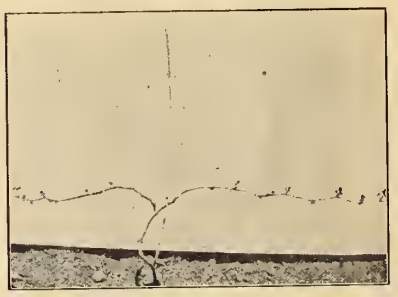

FIGURE 5

In very old vines pruned to this system the spurs gradually become long and crooked, and the new growth is weak. To avoid this, care should be taken of the shoots that appear on the main cane from year to year, as these can always be substituted for weak spurs.

The new growth which bears the fruit is tied to the trellis, and may be pinched repeatedly during the summer if large berries are desired. At least three leaves should be allowed to form beyond the outermost bunch before pinching the fruiting cane, and the same law applies to lateral shoots.

In the horizontal cordon system (Fig. 5) the two main canes of the spur system are tied to the lowest wire of the trellis and the new growth is trained up, the shoots being tied as needed to the upper wires.

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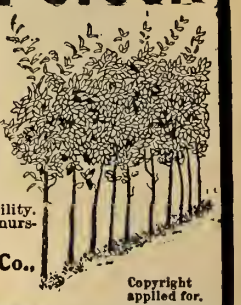

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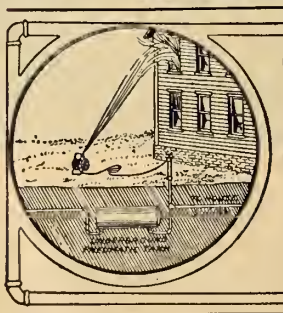

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FIGURE 6

the same as in the long-arm short-spur system. Cut off the outermost shoot where two shoots have grown from a spur, and cut back the base shoot to two buds, thus forming the spur for the following year.

The renewal system of training (Fig. 6) is especially adapted to regions where winter protection is necessary for the grape. It consists of four long canes of new wood, taken from as near the ground as possible, each cane having from eight to twelve buds. During the summer four of the lowest shoots that form on the vine are especially encouraged so that they may make a good growth and become the fruiting canes for the next year. In the winter the entire vine, except these four canes, is cut away, and the four canes are headed back to the desired length, with all laterals removed.

The Kniffin system of training is very popular with grape growers, as it requires the simplest form of trellis—a single high wire—and gives very satisfactory results. The main cane is carried without branches to a wire strung from four to six feet from the ground. As a rule this main cane can be secured the second year after planting in the vineyard. The third year the two topmost buds are allowed to grow, and if the other buds are rubbed off these two will make very strong canes during the season; though it is not necessary to rub out the lower buds, as the topmost shoots have the best chance.

In the winter pruning the new canes are headed in, leaving from four to ten buds on each, according to strength. Each of these buds will produce a fruiting shoot (Fig. 7), and as the season progresses these shoots droop by their own weight, checking wood growth and thereby increasing the size of the fruit. The base shoots on each cane should be especially encouraged, as it is to form the fruiting cane for the next year. It will sometimes be necessary to train this base shoot to the wire to secure a strong growth. In the annual pruning all the vine beyond he two bose shoots is cut away, and each of these shoots is headed back as before. Occasionally a base shoot will fail to grow, and in shuch cases the shoot nearest the base is retained for the bearing cane. This system is one of the simplest, the pruning is quickly done, and the high wire makes cultivation easy.

In the double Kniffin (Fig. 8) two wires are used, with a main cane to each wire, or two sets of arms may be grown from the main vine. The lower arms are shorter than the upper; otherwise the pruning is exactly

FIGURE 7

the same as in the single Kniffin system. Where high quality is not essential the double Kniffin may be preferred, especially in strong soil, as it yields somewhat larger crops; but the fruit on the lower cane seldom equals that on the upper in appearance or quality.

The Munson system of training (Fig. 9) is considered an improvement on the Kniffin. Two side wires, somewhat higher than the supporting wire, are arranged by fastening plates crosswise on the posts and attaching the side wires at the ends of the plates, from twelve to fifteen inches

FIGURE 8

from the supporting wire. The new growth is supported by these side wires, the danger being avoided of breaking the fruiting shoots, which occasionally happens in the Kniffin system. The annual pruning may be that of the Kniffin, or the horizontal cordon, according to preference.

Whatever system of training the grape is adopted, the pruning should be done while the vines are dormant, during the months of December, January and February. It will occasionally happen that unusual warm weather will cause the buds to swell even during the winter months; and bleeding follows pruning after growth begins. Contrary to general belief, grape vines very seldom bleed to death, but it is easy to avoid the loss of vitality by pruning while the vines are quite dormant.

It will often happen, especially in weak growers, like Delaware, that the stem joints are so close as to make spurs crowded on the arms. It is best in such cases to rub off the extra buds at the time of pruning, or else to wait until the new growth is two or three inches long. Either plan avoids bleeding.

In seasons favorable to growth the vines will make a great deal of wood and heavy foliage will so shade the fruit as to prevent full color and flavor in the ripened fruit. In such cases, especially where spur systems of training are practiced, most of the leaves on the side of the vines toward the morning sun may be removed

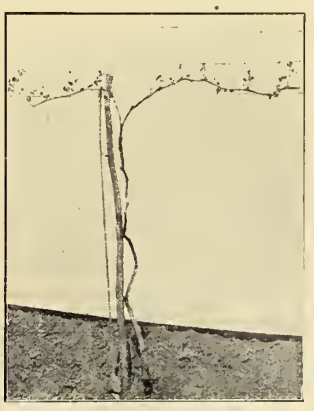

FIGURE 9

when the fruit begins to color. The fruit should be shaded from the afternoon sun, which is so intense as sometimes to burn the skin of the grape. No other protection than the foliage need be given.

Thinning of the Crop.

Thinning is a very valuable form of pruning, since by this means not only is larger fruit secured, but the vitality of the plant is insured, and more regular crops should result. Young vines have a tendency to overbear, and not infrequently a vineyard is very much injured from this cause. A vine should not be allowed to bear more than a single bunch of grapes its third year, and if this rule is followed it should be strong enough for a full crop the fourth year. In many varieties three or four bunches set on each shoot. Where only the best fruit is wanted two bunches should be selected on each shoot when the berries are first formed and the others cut away.

If the berries are very thick in the cluster the quality and appearance will be greatly improved if from one-third to one-half the berries are cut

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out. This is work for the amateur gardener, and is rarely profitable, of course, in commercial grape-growing.

The peach crop may be thinned by the commercial orchardist, since competition is so great. For profitable results the peach must be thinned before the stone hardens, and nine inches apart has yielded the largest increase in size, compared with unthinned fruit of the same variety.

There is always more or less danger of a late frost, and this must be considered in connection with thinning operations. After all danger of frost is past there remains but a very short time in which the work can be completed before the fruit is one-third grown. If the work is begun when the fruit is no larger than a filbert a large force of workers would be needed to thin a full stand in an orchard of forty acres in order to get through in time for best results. This necessitates a heavy outlay at a time when the crop has yet to pass through the dangers of rot, drought, and other troubles, so that very few commercial growers have adopted thinning as a regular practice.

The home fruit-grower may well experiment with it. He will find that in a well-trained five-year-old peach tree from two to five hours will be required for the work of thinning, and to space the fruits nine inches apart he will remove something over three-fourths of the crop in a full stand. With experience the work is done more quickly, and boys and girls are usually employed to do it. When done early the fruit is much larger, colors better and is in every way more valuable. The draft on the tree is very much less, so that annual bearing may be expected, and it is the general observation that rot is less common where thinning is habitually practiced.

The apple and pear are quite as much benefited by thinning as the peach, but the apple crop is seldom thinned. It will pay the home grower to thin the apple crop severely, because the tree can be made to produce regular annual crops by this means, instead of the biennial crops which are ordinarily the best that can be expected of it.

In all the operations of training and pruning, practice guided by forethought is the best teacher. The horticultural literature contains elaborate instructions for the making of ideal fruit trees, and one sees in European gardens wonderful examples of the trainer's art. The American climate does not favor the espalier training of the European gardener, but neither does it necessitate the entire neglect of trees which is common with us.

When an orchard is trained by pruning the operations of any single year are simple enough; but even in the early stages of growth individual trees develop peculiarities that require careful study before the knife is applied. A safe general rule is to pass through the orchard two or three times, cutting out only such parts the first round as are plainly in need of removal. By the time the first round is completed one will have learned much, and can attack the more difficult problems on the second going over with greater assurance.

The Pruning of Neglected Trees.

One of the surest means of stimulating old and neglected trees is by pruning. There are many trees in which the number of dead and dying limbs equal the number of living ones —every one endeavoring to prune itself. Natural pruning is a slow process at best, for the useless branch must first be killed by the competition with its fellows for light and food, and then must be pinched off by the slow growth of new wood around its base. And during the years that are occupied thus insects and diseases find the weakening member very vulnerable, gaining here a foothold against the healthy parts of the tree. The removal of a branch by saw or pruning knife is the work of a moment, and prevents a great waste of energy. It is true that a wise forethought would have anticipated the necessity of cutting out large branches, by the annual removal of such as were evidently making the crown too thick. The several branches which form the crown of a fruit tree are competitors for light and room, just as are the many trees that make a forest. In the forest the trees, which for any reason have an advantage over their fellows, as by more rapid growth, or greater vigor, or shade endurance, will ultimately gain the ascendency over the others and shade them to death. So in the fruit tree, certain branches having the advantage of position or strength, overcome others. Neglect a tree a few years, and the shaded limbs will be dead, and the lower branches of living limbs will be greatly weakened, for light is the energy by which the crown of the tree is developed. Obscure the light, and the leaves can do no work, so their supporting branch dies. Compare the size and color of apple leaves of the lower and inner branches with those of the upper and outer branches. Vigor is largely a question of light supply.

Such observations suggest the proper method of pruning neglected trees. First of all, cut out a portion of the crown so that light may be freely admitted. Naturally the branches removed will be the weaker ones, or those which by rubbing or by weak union with the supporting member threaten the vigor of the tree. In determining what limbs to prune out one must keep in mind the symmetry of the crown; and as a usual thing it is better to remove many small branches than a few large ones, for the latter practice not only mars the symmetry of the tree, but admits the light in great masses, threatening sun scald of the main limbs.

Brown Rot of the Peach.

Last season there was much complaint of peaches rotting just at ripening time, in many orchards nearly the entire crop being lost in this way. This was where rainfall was heavy at ripening time. This rotting was due to a fungous disease and peach growers generally are interested in preventing this disease during the coming summer, provided we have a peach crop.

At the meeting of the Georgia Horticultural Society last summer Prof. Wilmon Newell read a paper on this subject. It seems that some experiments were undertaken, to prevent brown rot, but owing to the very favorable climatic conditions in that state there was very little rot in any of the orchards, so that no definite results were obtained. However, a small number of Alexander trees were treated in different ways, and it was found that spraying the trees with weakened Bordeaux mixture controlled the disease to a great extent.

In this paper Prof. Newell recommended certain methods of orchard treatment which will help to reduce the danger from rot to the minimum. These recommendations are particularly interesting to those growers whose fruit rotted last year, for they will be instructed how to proceed to clean up their orchards and remove sources of infection. Prof. Newell said, in referring to the brown rot (Schlerotina fructigena):

"Observations and experience in various parts of the state have convinced us that the orchardist for the present, at least must depend mainly upon location, cultural methods and cleanliness for reducing the loss from brown rot. It is a well-recognized fact that trees upon rolling land are less affected with the disease than those upon level land. Trees which are planted far apart offer less favorable conditions for the brown rot fungus than do those planted close together. Sunlight and a constant circulation of air are the most effective natural agencies which prevent or retard this disease, and these natural agencies should be made the most of by the orchardist. In like manner, a peach tree which has a dense, bushy top, must necessarily keep the sunlight from the fruit and must tend to confine the air within the top with little or no circulation. From the very first season the trees should be

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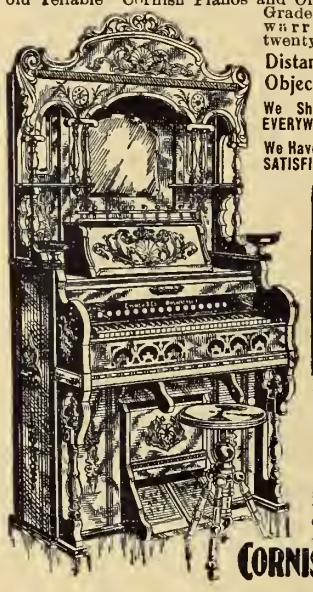

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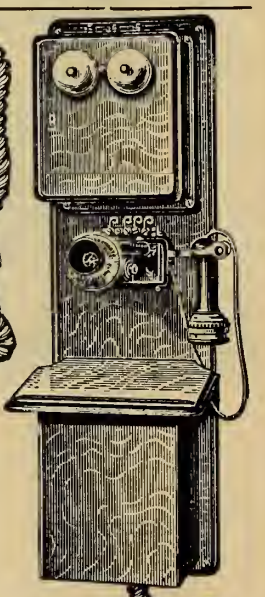

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pruned and trained by the inverted 'tripod' or open-center system, which calls for the removal of the central leader at an early age, and provides plenty of room in the center of the tree for the access of sunlight and air.

In this connection the question of fertilizers is an important one. A nitrogenous fertilizer tends to make wood and foliage at the expense of fruit production. The use of nitrogenous fertilizers in an orchard of bearing age must necessarily produce heavy foliage, and this in turn favors the development of the brown rot fungus. Fertilizers for bearing trees should consist essentially of potash and phosphoric acid with but a minimum of nitrogen. Upon the average peach land, with the trees in healthy condition, it is probable that in the majority of cases cow peas grown in the orchard during the middle and late summer will furnish practically all the nitrogen that is necessary. Local conditions, however, have a most important bearing upon the fertilizer question, and no general rules can be laid down which will apply to all cases.

"Cleanliness in the orchard is of the highest importance in controlling the brown rot. As soon as the main fruit crop is out of the way, every rotten and dried-up peach in the orchard should be gathered, carried from the orchard and burned up. Every peach grower knows that when the rotted peaches are left adhering to the trees they ultimately dry up, forming mummies, and that the fallen peaches also form these mummies and remain on, or in, the ground for several months. It is not known to everyone, however, that the mummied peaches adhering to the trees furnish the necessary spores for the starting of the disease the following spring, and that the mummies in the ground send up to the surface during blooming time small objects resembling toadstools. These toadstool-like forms constitute what is known as the 'apothecia,' or perfect form of the fungous. Even though the peach may be buried two or more inches below the surface of the ground, the stem of the apothecia will reach the surface and there develop a small 'cup' within which are formed thousands of spores, apparently differing in no way from the spores which occur upon the rotting peaches during the fruit season. The little cells containing these spores break open and throw to the wind the minute spores, literally by millions, and these in turn infect the blossoms and young fruit with brown rot. It will be readily seen that a spraying with Bordeaux mixture while the trees are dormant must prove practically valueless, when these apothecia appear afterwards and release thousands of spores throughout the orchard. It is for this reason that the decayed fruit should each summer be gathered perfectly clean and burned up. It is only during the fruit season or immediately afterwards that all of this rotted fruit can be found by the laborers, and absolute removal of all this fruit is necessa y to success. Hence the stress which we wish to lay upon cleanliness and thoroughness in ridding the orchard of all fruit each summer. It is by no means certain, however, that this perfect form appears every year. It has been known only since 1902, in which year it was discovered and described by Prof. J. B. S. Norton of Maryland. During 1904 it has been found at Fort Valley by Prof. W. M. Scott, and near Marietta by the assistant state entomologist, Mr. Smith. It appears evident also that these apothecia may not only develop from peaches of the previous year's growth, but also from peaches which have been in the soil for two years. This being the case, complete ridding of the orchard of all decayed fruit for at least two years in succession will be necessary to effectually guard against the early spring appearance of the fungus. It may possibly develop later on that certain cultural methods may prevent the appearance of this perfect form of the fungus in the spring, in which case the problem will be materially simplified. As yet, however, we have no definite knowledge on this point."

One has only to look through peach orchards where the rot was prevalent last year to find the mummied peaches, to which Prof. Newell refers. These should be gathered from the trees and from the ground and burned before spring opens.

Later in the meeting at which Prof. Newell read his paper Mr. Berckmans recommended the following treatment as a preventive of brown rot:

1. Remove all mummied fruit, should there be any on the tree.
2. Before the buds open spray with Bordeaux, 4-6-50.
3. When in full bloom prune out all twigs and blossoms affected with rot.
4. When fruit is well set spray with Bordeaux, 3-9-50.
5. Ten days later spray with Bordeaux, 3-9-50.
6 Ten days to two weeks later spray with Bordeaux, 3-9-50.

To Prevent Mice Injuring Trees.

In a paper before the Central Illinois Horticultural Society Mr. C. G. Winn gave his experience with mice in the orchard. He is convinced that the great damage of last winter was due to the fact that the mice were starved into gnawing the trees; that they would not have done so had there been an abundance of grain for their food. If grain of any kind is left in the fields he believes the mice will not be so likely to bother the trees, but if it becomes necessary to feed the pests, he prefers to poison their food. To do this he dissolves one-eighth of a grain of strychnine and a cup of sugar in a small quantity of hot water. With this is mixed half a peck of wheat, and a small quantity of this poisoned grain is placed in their runs.

As a preventive of injury by mice he recommends that all grass and trash be kept away from the trees, and also see that no crevices are formed between the trunk and the soil. If an opening is formed, the mice will go down and attack the roots. Newspapers wrapped about the trees will protect against mice and rabbits. Mr. Winn says that skunks destroy more mice than any other animal, except house cats, and for that reason he believes they should be protected by the orchardists.

The Worden Grape.

Theodore Lemm, Plattsmouth, Neb., in renewing his subscription to The Fruit-Grower, calls attention to the objections which have been made against the Worden grape. Much of the fault found with the Worden, Mr. Lemm believes, is due to the fact that the Worden is not pruned as severely as it should be. Mr. Lemm says that his Wordens are planted with the Concords, and several times he has pruned them just as he has pruned the latter. But now he prunes the Worden vines so that they have not more than five-eighths the bearing wood of the Concord vines. Mr. Lemm believes that if Worden is not allowed to overbear it will ripen its berries evenly, and will bear most excellent fruit. He also believes the Worden is hardier than Concord. The Brighton is another grape which he says is sure to overbear on young vines.

If your subscription to The Fruit-Grower has expired, renew it today. The next few issues of the paper will be especially good ones, and they will cost lots of money. Your help is needed in bearing the extra expense.

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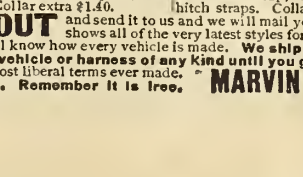

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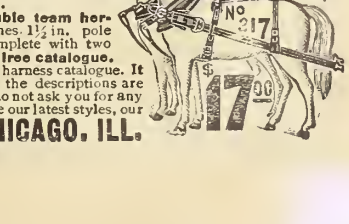

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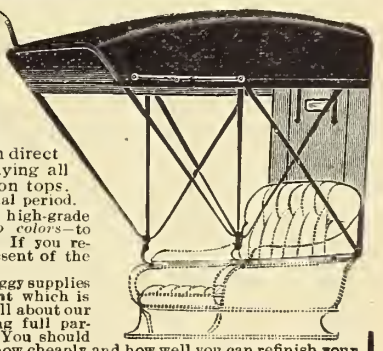

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Volume 16 ST. JOSEPH, MO., FEBRUARY 15, 1905. Number 2

Attention is called to the directory of fruit-growers' associations in this issue and to the new department we have added for the purpose of helping the marketing of fruit. If the various associations will help in this work, this department can be made of great benefit to all concerned. Especially do we ask the co-operation of every reader of The Fruit-Grower in our efforts to secure reliable reports of crop prospects. These reports last season were helpful, and yet they were not what they should have been. This publication wants to not only help its readers grow better fruit, but also wants to help them market it profitably. You can help in this work to this extent, at least: Get as many new subscribers as possible, so that the influence of the crop reports, etc., will be extended to all who are interested in horticulture.

The attention of every reader of The Fruit-Grower is called to the announcement made in "The Family Circle," on page 9. The matter there discussed is one which will interest every subscriber, and everyone who is interested in the welfare of The Fruit-Grower should consider the same carefully.

The March issue of The Fruit-Grower will be our gardening number. Will you not send any notes on gardening which you feel will interest others. If your garden has been a success tell others about it; if it has not been a success, write your experience and perhaps you can be helped.

The daily papers have charged that a certain candidate for United States senator, who received the nomination of his party caucus in a western state, was not to be elected because the railway interests were against him! How about that? Do the "common people" watch their interests with this much care? If not, is it not about time? It behooves farmers to look up the proposed laws which the railway interests are so anxious to defeat, and then see how their representatives stand on these questions.

In this issue Hon. J. H. Crowley—we call him "Hon." because he is now a member of the Colorado state senate—has an article telling of his spraying operations last season, and in connection with what he has to say The Fruit-Grower wants to testify to the thoroughness of the spraying done by Colorado orchardists, as well as those of Oregon and Washington. The fruit from these states which has been offered on the markets this season bears witness to this thoroughness, for a large percentage of the apples still have the spray mixture adhering to the skin, and many have the calyx end almost filled with the dried residue left from the spraying. This shows two things—that the growers did their work well, and that the mixtures adhered to the fruit. It goes without saying that fruit which was marked in this way was absolutely perfect. Of course, one who ate an apple of this kind had to wash it—but then, one had the satisfaction of knowing that the apple could be eaten until there "would not be no core," if desired, for there was no sign of the presence of codling moth.

Never before have the fruit-growers of the country paid so much attention to the question of marketing their fruits to the best advantage as they are doing this winter. At every horticultural meeting the question comes up. The Fruit-Grower will lend its aid to every move to secure a better system, and hopes the growers of the country will call on us. To this end, we want our directory of horticultural societies and shipping associations as complete as possible; the list as published last month did not contain one-tenth as many addresses as it should have done, and we hope our readers will send additions to this list at once. This month many new ones are added. Another thing: We want the help of every reader of The Fruit-Grower to make our system of fruit reports better this season than ever before. If growers everywhere know what quantity of fruit will be marketed from other sections a better understanding will follow, and everyone will be benefited. Suggestions from our readers as to how all this work can be improved will be appreciated.

A subscriber living in Southern Missouri says that a representative of an Ohio nursery has been through that part of the country selling budded apple trees. This man says that the planting of grafted trees is a mistake, and has urged growers who have young orchards of grafted trees to dig them up and buy budded trees. And, of course, they ought to buy the trees sold by this man. We hardly believe this tree salesman will find many persons foolish enough to dig up their apple trees simply to be able to buy from him. Many persons honestly believe that budded trees are better for some sections than grafted trees, but we know of none—except this tree salesman—so enthusiastic on the subject that they would advise anyone to dig up the trees they have already planted, simply because they are not budded. And for some sections the budded trees are certainly not the best, by any means. This man in Southern Missouri is simply trying to sell his trees, which are likely not budded at all.

Nearly every agricultural college in the west reports an increased number of students taking the agricultural course, and the effect is manifest in the improved conditions of farm life. It can no longer be said that the best boys leave the farms; in fact, the most intelligent man can find ample opportunity to exercise all his faculties on the farm. He must be in every sense a business man and it is gratifying to note this increased interest in scientific agriculture.

The farm papers of the country are again calling attention to the waste of money by the United States government in its annual free distribution of seeds. It has been shown that this is not only a waste of money, so far as the purchase price of the seeds is concerned, but the mailing of the seeds free helps to cause a deficit in the postal department. It is hard to find anyone who is in favor of the continued free distribution of seeds, owing to the uncertain character of the seeds sent out, and yet the practice is continued. Who is it favors the distribution?

The agricultural experiment stations of the country are located at the agricultural colleges of the respective states, and in nearly every case the men who carry on the experimental work of the station also teach in the agricultural college. This plan has worked very well, as a rule, because, until within the past few years few agricultural colleges have had such large classes that the work of experimentation was seriously interfered with. But the classes have grown much larger, and the experimental work has increased until those who have studied the situation most carefully are of the opinion that the work of the college interferes with the work of the experiment station, and vice versa. This subject was discussed at the meeting of experiment station workers at Des Moines some time ago, and the consensus of opinion seemed to be that the time has come for a better arrangement of this work; that the states should not expect a person in charge of experimental and research work to do much teaching, nor can the strictly agricultural teachers do much work in the other line. It was suggested that the experimenter should do enough teaching and farmers' institute work to keep in touch with the practical problems which confront farmers, but this should be merely incidental to his regular work, and not a part of his regular duties. There can be no doubt that many of our experiment stations must provide more men for the work, if they are to come up to their highest possibilities. But the states can well afford to do this, for if the station workers can recommend a method, or if they can produce varieties, which shall add even a small percentage to the crops of the respective states, it will be money well spent. As the duties of the colleges and of the stations increase more men must be provided to do the work.

The following paragraph is from White's Class Advertising, a paper devoted to the furthering of interests of agricultural advertisers, and it fully accords with what The Fruit-Grower has always claimed—that fruit farmers are among the very best class of farmers:

"There is not a more intelligent or progressive class of rural people living than fruit-growers. Breeders of pure-bred stock are not a hair's breadth ahead of them in anything by which intelligence may be judged. Fruit-growers probably have more perplexing problems to grapple with than have the stockmen. For this reason I incline to the opinion that as a class American producers of fruit are technically better educated than any other group of rural people. If this be true, high-grade publications devoted to the fruit industry ought to pay advertisers quite handsomely—as indeed they do. But it is a mistake for the advertiser to conclude that because a man grows commercial fruit he has no use for many of the appliances employed by stockmen and general or diversified farmers."

Great is copper sulphate. It is now stated that one part of copper sulphate in 100,000 parts water will destroy all cholera and typhoid fever germs in water in from three to four hours. Perhaps our doctors will be using Bordeaux mixture after awhile. It is said the copper sulphate will destroy mosquito larvae in water.

Now that the special subscription propositions of The Fruit-Grower will be withdrawn May 1 we hope every reader who wants to do something to help the cause along will get up a club of new subscribers before that date. Our propositions have been accepted by a great many of our readers and we know a great many more have intended to get up clubs, but have neglected it. Now is the time to do this work. With the opening of spring there will be less time and your neighbors will not be so accessible. Get their subscriptions now, and by so doing you will help them, will help yourself and you will help The Fruit-Grower.

Prof. S. A. Beach Will Come to Iowa.

It is announced that Prof. S. A. Beach, horticulturist of the Geneva (N. Y.) Experiment Station, will come to the Iowa Agricultural College next September as professor of horticulture. This position has been vacant since the resignation of Prof. H. C. Price some time ago. During this time Prof. A. T. Erwin has been temporarily in charge, and under the change he, too, will receive a promotion, having been appointed assistant professor of horticulture.

The appointment of Prof. Beach is made possible through the co-operation of the Iowa State Horticultural Society with the trustees of the college, and Iowa is to be congratulated upon securing this gentleman.

PROF. S. A. BEACH

Professor Beach, whose likeness we present herewith, is a native of New York. He came to Iowa in the early '80's, and after spending a couple of years on a farm in Taylor County, entered the Iowa State College in 1884 and graduated in 1887. At the completion of his college course he entered the employment of Hon. Silas Wilson of Atlantic, Iowa, as salesman and nursery superintendent, and continued in that capacity for about two years. He was then elected to the chair of horticulture of the Texas Agriculture College and served one year, leaving this position to become horticulturist of the New York Experiment station at Geneva. He has served in this capacity for thirteen years, during which time he has made a reputation as one of the foremost horticulturists in America, his department being the largest and most prominent of the New York station. He is now engaged in writing an exhaustive report on pomology, for which the State of New York has made a special appropriation of $20,000. Professor Beach comes to his work in Iowa in the prime of a vigorous and useful life, and it is confidently expected that his services will be of incalcuable value to the horticultural interests of the state.

The horticultural department at Ames is to be strengthened, as fruit culture is becoming more important in Iowa. The old force of the horticultural department will be maintained. Prof. Erwin has been promoted to position of assistant professor, and better things are in store for Iowa horticulture.

Herewith I send list of five subscribers for The Fruit-Grower. I am not a fruit-grower except in a small way for family use, but realize that I get the value of the subscription price in a single copy, and I am glad to induce others to subscribe.—J. H. Carr, Florida, Mo.

I do not wish to miss a single copy of the Fruit-Grower. I have taken the paper for several years, and I think any single number I have received is worth the price of a year's subscription.—R. R. Chess, Canon City, Colo.

The Family Circle

Scarcely a day passes that we do not get a letter from some member of the family, in which there occurs the expression, "I don't see how you can publish such a good paper at the price."

Now, we have a confession to make: We cannot afford it.

Accordingly, all our special subscription propositions, such as five new subscribers for $1, three years' subscription for $1, where one pays in advance, and all other offers at reduced rate, will be withdrawn after May 1, 1905.

The date for the withdrawal of these offers is set forward until May 1 to allow every member of The Family to close up any clubs on which they may now be working. But the offers will positively be withdrawn at that time.

In announcing the withdrawal of these offers we will add that this is but the preliminary announcement of a change in our subscription policy which will likely be made later. Due announcement will be made as to this, but in the meantime we want to state some facts in connection with the cost of producing a paper like ours.

When The Fruit-Grower was started eight years ago it consisted of sixteen pages, and this was the size of the paper for many years. At that time the question of publishing a fruit paper was rather an uncertain proposition. We were confronted with stories of the many fruit papers which had been established and had either failed or had been converted into general farm papers.

With these direful prophecies as to the outcome of The Fruit-Grower in our mind, we proceeded very cautiously. Our subscription rate was made low—50 cents a year—for the paper was not very pretentious. And to help our readers to get new subscribers, we offered still lower rates for clubs. In this way The Fruit-Grower's circulation has been built up, and while this was being done the paper was continually being improved, until last month, instead of the sixteen pages with which we started eight years ago, we had forty-eight pages and cover. And the reading matter was decidedly better than our first issue contained.

While this change has been going on in the character and size of The Fruit-Grower the cost of producing the paper has been steadily increased. White paper costs more, labor costs considerably more, and even the ink which we use has been greatly increased in price. The result has been that our subscription department has not been paying enough revenue to place the paper on a profitable basis.

No effort has been made to cheapen the quality of The Fruit-Grower at any time. Indeed, we are continually striving to improve the character of the paper, without regard to expense. But a change must be made, at least to the extent of withdrawing our special propositions.

While our special rate of five-for-a-dollar has been in effect we have enrolled thousands of subscribers, and everyone who has considered the matter must have wondered how such a paper can be produced at this rate. And so we say again, It cannot. Twenty cents a year will barely pay for the white paper used, to say nothing of the other necessary expenses.

Now, some persons will say that the advertising patronage will support a publication. To be sure it will—some publications. But not one which uses as good paper as The Fruit-Grower does, and which maintains as high a standard generally. Papers which depend upon their advertising patronage entirely for support—and there are some such papers, it must be admitted—are not usually very particular as to the character of advertisements admitted to their columns, nor are they very discriminating in regard to the reading matter the papers contain.

But this has never been the policy of The Fruit-Grower, nor will it be in future.

We want to make our subscription department bear its share of the burden of expense. The paper is conducted for its readers, and not for its advertisers, and therefore the subscription department has its part of the obligations to meet.

Now, what do we propose to do? At present simply to withdraw the extremely low rates we have been making for some time past. This withdrawal will take place more than two months from now, so that everyone can have taken notice of the change. If any member of The Family has neglected to get a club of new subscribers under our special proposition he has opportunity to do so before the offer is withdrawn, and we will say that we hope everyone will strive to get up such a club. But after May 1 our regular subscription rate of 50 cents a year must be paid. And we will guarantee that the paper will certainly be worth the price.

But don't forget that until midnight, April 30, 1905, you can send in clubs of five new subscribers at rate of five-for-a-dollar.

As stated before, other changes in our subscription policy may be announced later, but this will do for the present. One thing more: There need never be any doubt in the mind of any reader of The Fruit-Grower that the paper will always be worth the subscription price we ask, whatever that price may be. You are safe in counting on that.

In announcing this change of policy The Fruit-Grower is but carrying out a policy which we believe is being considered by many of the best publications in the country. The Ladies' Home Journal has just increased the price at which the paper is sold on the stands, and Everybody's Magazine has done the same thing. Others are contemplating the same change.

But The Fruit-Grower has not advanced its rate. It has simply withdrawn its special low-price propositions, and the subscription rate of 50 cents a year will be maintained for the present, at least.

What of the future? Well, we don't know just yet. We will have to see how this change affects the subscription receipts. But we want to take our readers into our confidence to this extent, and to ask their advice:

A great many of our friends are continually urging us to publish The Fruit-Grower twice a month. These calls are continually coming, and we want to ask the members of The Family what they think of two issues of The Fruit-Grower a month, at $1 per year? How does that sound?

Or, another proposition has been suggested by others: To make The Fruit-Grower still better, with more illustrations, more special articles, etc., and to charge $1 a year for a monthly publication. The latter plan, of course, would contemplate a better paper in every way than we have now, while the first one would simply mean two issues a month of about such a paper as we print now.

How about this? Which do you think better?

Of course, any change of this kind would not be made for some time, and not until after due preparation could be made. But we want the members of The Family to think the matter over and when they have opportunity we want them to write us about it. Our subscribers have helped to make The Fruit-Grower what it is, and we want to make no change of this kind until we have heard from some of them.

These changes which we have suggested, in every case, it will be noted, contemplate a little more money being paid for our paper. And on our part, for our side of the bargain, we will only say the continual improvement which has been made in The Fruit-Grower in the past is sufficient guarantee of the improvements which will be made in the future.

Now, for the immediate effect of this change in policy. We want every member of The Family whose subscription has expired to renew at once. It is enough to ask us to furnish The Fruit-Grower at our present low subscription price without asking us to carry a large subscription account which is past due. Will you not look at the date on your wrapper and renew today?

Is this asking too much? Do you ask any less of the commission man who handles your fruit and does not remit promptly? Of course, there may be some who, for one reason or another, may not want to take The Fruit-Grower longer. Such persons are urged to drop us a postal card to this effect, and their names will be removed. We are entitled to this, we believe.

All special propositions will remain in force until May 1. If you want to renew for three years for $1 we shall be glad to have you do so, and you will receive The Fruit-Grower for the time for which you have paid, no matter what change may be decided upon. If you want to send five new names, or four new names and your own renewal, for $1, we shall be glad to have you do this at once.

Now, what do the members of The Family think of the proposition? We shall appreciate the opinions of any of them and, above all else, we would urge everyone to examine the date on his wrapper and if the time has expired, renew today.

BROTHER JONATHAN.

Good Words for the Fruit-Grower.

The Western Fruit-Grower has taken on the subscription list and good will of American Gardening, for many years published in the city of New York. This will not only add several thousand subscribers to The Fruit-Growers's list, but will give this paper an added prestige, because of the fact that The Fruit-Grower is to carry out all unfulfilled obligations to American Gardening subscribers. The Western Fruit-Grower knows no motto save "Forward." It is one of the livest, most progressive magazines that comes to our table, and we doubt not that it will be cordially welcomed to the homes of its thousands of new readers and subscribers.—Class Advertising, Chicago.

This is high praise, when it is considered that every farm paper in America reaches the table of this publication.

Inclosed find a list of new subscribers. I feel amply repaid for my work of getting new subscribers by putting such a valuable paper in the hands of my friends. It's no trick at all to get new subscribers; all I have to do is to show a man a Fruit-Grower, and he does the rest.—W. C. Smith, Hickman, Tenn.

I AM
RUSSELL E. GARDNER
THE "BUGGY KING" ST. LOUIS, U. S. A.
BANNER BUGGIES
BEAT THE WORLD

Ask your dealer for a Banner Buggy, Runabout, Surrey or Harness. If he doesn't handle them write me before buying. I manufacture more buggies than any other man in the world and can save you money.

To Your Order 50c

1,000 buggies to be built just to keep our factory in operation with a full force during the dull winter months.

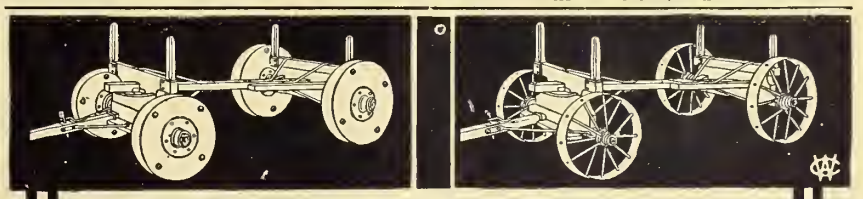
A $50.00 Buggy for $36.50

For 50 cents we will enter your order and build a $50.00 rig to suit your ideas. Your choice of bodies, gears, wheels, top, paintings and trimmings. When you are ready to receive the buggy send us the balance due, $36.00, and we will put on the final coat of varnish and ship as soon as possible. The total cost will be $36.50 for a buggy built to your order, bright and fresh, nobby in every detail and equal to the $50.00 kind. Write at once for Circular B, giving full particulars of this remarkable offer. Remember, 50 cents is all we require with the order. 28

MONTGOMERY WARD & CO.
Michigan Ave., Madison and Washington Sts., CHICAGO

WHALEBONE LEADS!

OUR 1905 MODEL sets the style in buggy making. Up-to-date in equipment, design, and workmanship. Long-distance axles. Sold direct to user on One Full Month's FREE Trial. 2-Year Guarantee. Lowest prices in America quoted in our Free Catalogue. Write THE WHALEBONE CARRIAGE AND HARNESS CO., Cincinnati, O.
Ask for Catalogue A15



BIG INTEREST ON MONEY

An investment in a good farm wagon, one that embodies the greatest labor-saving, time-saving and lasting qualities, brings bigger interest on the investment than any other piece of farm equipment.

THE FARMERS' HANDY WAGON

made with wood or iron wheels, proves the wisdom of its purchase with every turn of its wheels. It fits every farm purpose, fills every wagon need and outwears any other made. Ask your dealer or send to us for the opinion of thousands of farmers; also for the booklet "Thinkful Thoughts for Thoughtful Thinkers."
Farmers Handy Wagon Co., Saginaw, Mich.

BETTER TO BUY RIGHT ONCE

than wrong twice. In buying a fence consider: First—The quality of the wire. Second—The method of construction.

Page Fence

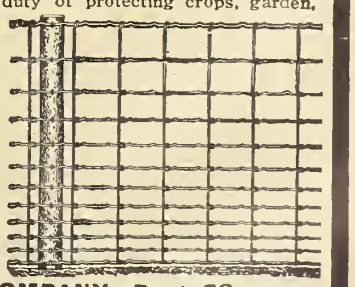
is made of double strength, high carbon, basic open-hearth, spring steel wire, far superior to common fence wire—costs us more, lasts much longer, is resilient and practically indestructible. The cross bars on Page Fence are continuous, not little pieces, but one wire tied around each horizontal wire the whole width of fence.

PARING KNIFE FREE—To everyone who writes for the Page Catalog will be sent, a practical Paring Knife made from Page Wire. This handy kitchen utensil serves to illustrate the quality of high carbon steel used in Page Fence. Write for it.

PAGE WOVEN WIRE FENCE CO., Box 3211, ADRIAN, MICHIGAN
Warehouses at Kansas City, Omaha, Davenport and Minneapolis.

AN INVESTMENT and not an expense—is a fence that does its duty of protecting crops, garden, orchard, live stock and poultry and does it long and well.

AMERICAN FENCE



is supremely the investment fence, the fence that protects, looks well, lasts long, because it is made of heavier steel wire per running rod than any other fence on the market. You get your money's worth when you get *American Fence*. Don't buy fence until you have seen *American* at our agent's place in your town. You will be impressed with its weight and simplicity, and will find the price right.

Send for our *Free Fence Book* and get posted on the subject.

AMERICAN STEEL & WIRE COMPANY, Dept. 53
CHICAGO NEW YORK DENVER SAN FRANCISCO

Spraying With Arsenate of Lead, or Disparene.

Having sprayed with Swift's arsenate of lead for several seasons I made a thorough test of Desparene last year with a view to determining if there was any advantage to be gained by the use of one or the other of these great spraying preparations. My opinion, after the season's work, is that one is just as valuable and just as effective as the other.

My test of disparene was made on my younger orchard, including twenty-three acres divided about equally between Ben Davis, Statman, Winesap and the Missouri Pippin. These trees are eight years planted and good size, and thrifty for their age. It is a good orchard and produced a good crop of fruit. The Disparene was used in the proportions of two pounds to fifty gallons of water and an average quantity of six gallons per tree was applied. But one spraying was given and this immediately after the dropping of the petals and before the closing of the calyx. No bandages were used on the trees and no other precautions taken against the codling moth except what advantages might accrue from clean culture and thorough irrigation at the proper time. The ground had been well harrowed during the winter to break up the surface and expose as many of the pupating larvae as possible to the inclemency of the weather. The results of this thorough spraying with Disparene was a heavy crop of well-formed apples, with not over 5 per cent wormy.

The balance of my orchard, about forty-five acres, ranging in age from 8 to 18 years, was sprayed once during the same time with arsenate of lead, in the proportions of two pounds of the poison to fifty gallons of water. The arsenate of lead which I used seemed to have been ground finer than the Disparene and mixed with the water more readily, remaining in suspension longer. There seemed to be a distinct difference in the smell of the two preparations and the arsenate of lead, being of finer grain and most easily mixed, it would seem there was some difference in the two samples of preparations which I used this year. Whether there is usually this difference I do not know. The portion of orchard sprayed with Disparene gave a smaller per centage of worms than the part sprayed with the arsenate of lead, but this I attributed to the greater thoroughness of the work in that part. I was anxious to give the Disparene a good, fair trial and so attended to the work of applying the spray myself, while I left the spraying with arsenate of lead to a foreman, who did not do so thorough work as I did and would have done had I been on the spray tank which was using the arsenate of lead. Another possible reason for having more worms in the older orchard is the fact that this part is closer to the packing houses and cellars and there are more weeds, trash and old rough-barked trees of all kinds there to furnish a harbor for the worms during winter. Taking all these facts into consideration I considered the value of the two insecticides practically the same and would have no hesitation in advising orchardists to use either of them in preference to any other poisons yet developed for fighting the codling moth.

I would like to be understood as emphasizing especially the importance of thorough work in spraying. By thorough work I mean getting the spray into every part of every tree, regardless of whether the tree is well loaded with blossoms. Two rows of trees in my older orchard stand on opposite sides of a lateral running through the place and belonging to neighboring lands. It is impossible to drive through between these two rows and therefore it is difficult to get a good job of spraying on the halves of these two rows that are next to this lateral. This work is usually done after the balance of the orchard has been sprayed by attaching an extra length of hose to each lead. During the season of 1904, when I was attending to the spraying of the young orchard as above mentioned, the foreman neglected entirely to spray the half of each row next to the aforementioned lateral. The results of this negligence were strongly apparent all through the season, and at the final windup the unsprayed half of each row contained at least 90 per cent of wormy fruit, while on the sides that were sprayed the proportions were exactly reversed, only 10 per cent being wormy. Of course the trees in neighboring rows where all sides were sprayed showed even better results from the spraying than did the sprayed portion of partially sprayed trees, the average of wormy fruit being less than 10 per cent throughout. We sprayed some crab apple trees this season that had been neglected before and had good fruit there where only breeding ground for the codling moth had been produced before. We found by far the greater number of wormy apples in the tops of tall trees where it had been difficult to reach with the bamboo rods, and in thick heads where the spray had not penetrated.

Another important point is not to wait too long after the petals fall before beginning the work of spraying. Spraying should begin as soon as the bees quit visiting the blossoms, as the pollen will be off at that time and the calyx in the best possible condition to receive the poison. By the time a large orchard can be gone over the season will be crowded and many apples will have passed beyond the best stage for receiving the mixture. One cannot afford to wait until every blossom on the tree has shed its petals before starting the pumps.

Another most important point is to keep up a strong pressure at all times while spraying. From 80 to 125 pounds pressure should be maintained, and quite fine nozzles are the best for using the Arsenate of Lead or Disparene. A fine mist is not necessary, but the next thing to it is desirable. Every portion of the tree should be reached, not only the blossom end of all apples should be covered and filled with the poison, but every leaf and crevice in the bark as well should be covered.

The second spraying usually recommended for a week or ten days after the first, is needed only as a precautionary measure to be sure of getting a thorough job of the first, and really much the most important spraying of the season. Where the work must be done by inexperinced or indifferent help, it is quite important to give the second spraying immediately following the first one, but where one is so situated as to attend to the details of giving the first application in the proper way, one going over should do the work well. Arsenate of Lead and Disparene are too expensive materials to waste in going over the trees more times than are necessary for good results.

Although I did not give a second or later spraying the past season, I would most earnestly recommend such work, and in most parts of Colorado the dates for spraying to head off the second brood of worms comes along from July first to fifteenth. Much less of the mixture is needed for this spraying, as only enough to coat the half grown fruit is needed. A very fine nozzle should be used and the rods should be moved rapidly so as to not allow the drops to run together and drip from the apples.

J. H. CROWLEY.

Rocky Ford, Colo.

In connection with the foregoing, the following from Prof. C. P. Gillette of the Colorado Agriculture College, will be of interest:

"Arsenate of lead has been used in many of the apple orchards of this state the past year with excellent results. Nearly every one I have met who has used arsenate of lead says

Our 4-Gal. Sprayer at work in an orchard.

$5.00 SPRAYER FREE

To have you introduce Rippley's 4 and 5-gal. Compressed Air Sprayers in your localities, we want you to canvass for us. Write at once for our 100-page Sprayer Catalogue, as we want you to sell THREE ONLY of our 4 or 5-gal Sprayers to your neighbors at prices below, and we will give FREE a $5.00 No. 15, 4-gal. Galvanized Sprayer, complete as shown in cut.

$1.50 OFFER EXPLAINED, $1.50

If you are not in a position to take advantage of our $5.00 Free offer, we will upon receipt of $1.50 in stamps, money or express order, ship by express, C. O. D., subject to your inspection at express office, one or our No. 15, 16, 17 or 18 Sprayers. When you find it as we represent, you pay agent balance, and if not as represented, we will forward another Sprayer free of charge.

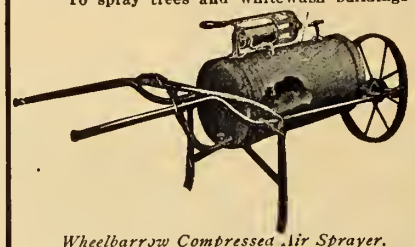
Don't Experiment—Buy the best Sprayers. They prove the cheapest in the end. We don't claim to manufacture the cheapest Sprayer on the market. We do claim and have demonstrated for the past five years that we manufacture the best.

Our Challenge—At any time we will enter a test, with any manufacturer of a similar price Compressed Air Sprayer, and prove that our Sprayer is more substantial.

What It Is Guaranteed to Do—To spray solution in the form of a mist, and to force a greater distance from the nozzle than any other 4 or 5-gallon Sprayer on the market.

To spray trees and whitewash buildings 25 feet high or more, by using extension poles to elevate spray.

To spray more vegetables, bushes, trees and plants with less labor and with less solution, and to last longer than any other 4 or 5-gallon Compressed Air Sprayer on the market.



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Extra hose, per foot, 8c. Nozzle, $1.25. Bamboo Rod, Copper Tube through center, to elevate spray in high trees, snitable to attach to these Sprayers, 4-ft., 75c; 5-ft., $1.00; 8-ft., $1.25; 10-ft., $1.50.

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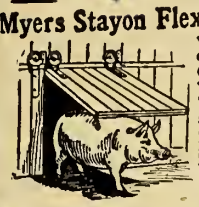
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Brass pump with bronze ball valves, 5 gal. copper tank, mechanical agitator; pump worked with either hand. Arranged for easy carrying and handling.
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with new spring shut-off. Catch a good thing quick. Write for free sample plan and full particulars
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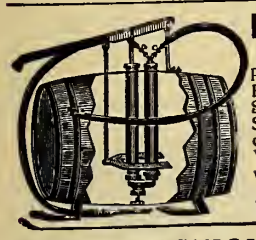
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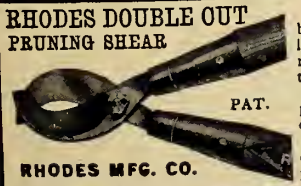
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Cuts from both sides of limb and does not bruise the bark.
We pay Express charges on all orders.
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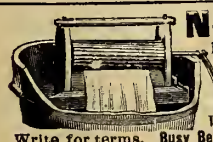
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100 pieces in 1 hour, no hard work. That's the record. Agents Wanted. Exclusive Sale.
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he will continue using that poison for the codling moth. The strength used has varied from two to six pounds in one hundred gallons of water. As far as my observations have gone, I can see no advantage in using more than four pounds to one hundred gallons. The number of applications have varied from one to six. All the orchards that I have visited that were sprayed thoroughly with this poison just after the blossoms fell, and sprayed again in one week or ten days, were well protected from the injuries of the codling moth.

"Usually the orchardists of this state have made a third application about the middle of July. It seems probable that the July treatment has given benefit enough to pay for making the application. Where two thorough sprayings have been made as I have described, the wormy apples will not average more than five to eight per cent of the entire number of apples borne by the trees. Those who have made these two applications and have also made a third treatment about the middle of July, have fruit that will seldom exceed five per cent of wormy apples at picking time in the fall. Those who have been thorough in the use of paris green or arsenite of lime have also had excellent results. The ease with which arsenate of lead is kept in suspension in the water, the fact that it never injures foliage, and the tenacits with which it holds to the foliage makes it a very desirable poison to use. Trees in the same neighborhood that were not sprayed at all had from fifty to ninety per cent of the fruit wormy in the fall. Our best orchardists no longer fear seriousness from the codling moth.

"In our experience we have taken from about 25 to 50 per cent of the worms under bands, but I have stopped recommending their use where orchardists can be induced to do thorough work at the proper times with some good arsenical spray because then the bands are not worth the trouble they make. Our orchardists who have learned how to spray right with arsenical poisons do not have over five per cent of wormy apples, and I visited many orchards last October in Colorado where less than two per cent of Ben Davis apples had worm holes in them, as result of tree applications of arsenate of lead, paris green, or arsenate of lime."

Spraying in Iowa.

We have been spraying with more or less success for the last seven years. In all our spraying operations we have used the Bordeaux mixture with Paris green in connection. We generally use the so-called 4-4-40 formula, for late spraying reducing the quantity of copper sulphate to three pounds instead of four. The last two years have certainly been years in which one could test the effect of the Bordeaux miture, and I am well satisfied that orchards thoroughly sprayed will return with good interest the cost of time and material spent in the spraying. Up to 1904 we used a hand spray pump, but last spring we purchased a power sprayer, deriving its power from the rear axle of the spray wagon. This sprayer has given us very good satisfaction. We use fine Vermorel nozzles in all work after leaves have formed, and use as high pressure as we can maintain handily. A pressure of 100 to 120 pounds is about right. We spray in our own orchard the entire season, this last year spraying as late as the last of August. In our earlier experience we sprayed only three or four times during the season, but for the last three years we have sprayed six to eight times. These last three years have been our most successful years in per cent of No. 1 fruit. Last year (1903) we were froze out, except a partial crop of Ben Davis. As our Winesap and Missouri Pippin were nearly a total failure we did not spray them after the bloom. There is where we made a mistake. This year the Winesap and Missouri Pippin developed scab very badly the first of the season. We are very positive the spraying held the scab in check, judging by the appearance of apples from unsprayed orchards. We are well satisfied in our own minds that the proper use of Bordeaux will control, at least to a large extent, the scab and other fungus diseases. The last two years our orchard has had a healthy foliage till late in the fall, while unsprayed orchards were nearly bare of leaf. In our orchard the droppage was very small, a result, we are satisfied, of the use of the Bordeaux mixture.

Now, the codling moth worm is a hard proposition. We have had a very large percentage of wormless apples in July, but a very large per cent of wormy apples at picking time. In fact, the second brood of worms is very often as bad or worse than the first. Since we have continued our spraying through July and into August our per cent of No 1 apples has increased very largely. Our orchard is small (30 acres) with a crop this last year of about 1,200 barrels, which is very satisfactory, considering the season. We believe in spraying, not once or twice, but thoroughly, the entire season if necessary. We also this last season sprayed both cherry and peach trees. Our cherry crop this year was very good and trees are in good shape this winter. In 1903 we lost quite heavily from the cherry leaf spot. We shall spray our cherries the next season, and may be able later to give you more reliable information as to the effect of praying on the cherry.

H. A. SIMON.

Hamburg, Iowa.

The point Mr. Simon brings out about spraying to protect the foliage, even when there is no crop, is a good one. Too many growers cease their efforts if they find there are no apples to protect, yet it often happens that diseased foliage this year will prevent a crop being borne the following season. This fact will doubtless be demonstrated in hundreds of orchards during the coming summer. Even if there is a good apple crop generally, it is safe to say that many orchards which were neglected last summer will be barren of fruit, owing to the diseased foliage of 1904 and the great number of spores which will be present to infect this year's crop. Some growers do not appreciate the fact that healthy foliage is essential to crop production, but it is a fact nevertheless.

In a paper read before the Leavenworth (Kan.) Horticultural Society, Fred Eason said that, after having tested many varieties of strawberries, he still clings to the Warfield. This variety has never disappointed him. The best berry he has found to go with Warfield is the Splendid. In field culture he plants two rows of Warfield to one of Splendid, the rows being four feet apart, plants three feet apart in a row. These varieties have been most profitable. Mr. Eason says that, although the Aroma originated in Leavenworth county, and notwithstanding it is so profitable in other parts of the country, he has never succeeded with it. This shows how varieties differ on different soils, with different treatment.

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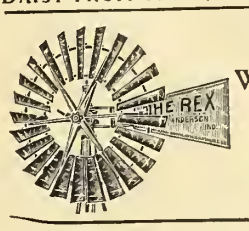

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Some Common Orchard Pests and How to Combat Them

By Prof. J. M. Stedman, Entomologist of Missouri Experiment Station.

PART I.

As spring approaches one should begin to lay plans for fighting several injurious insects that are certain to need attention every year; and to that end it may be advisable to review a few common principles underlying the spraying for insects, which principles are very frequently misunderstood.

The main point to keep in mind in trying to fight insects is whether or not the particular insect we wish to combat obtains its food by biting; that is, by eating away and swallowing a portion of the tissue of the plant, or whether the insect obtains its food by sucking, in which case it simply sticks its beak through the tissues of the plant and sucks the sap from below. On this point depends the insecticides that we are to use, and also on this very point is where nine-tenths of the failures in combating insects by means of sprays fail. Although this may seem to be a very simple point yet its simplicity, I fear, has something to do with the neglect to pay proper attention to it.

One should not rely upon guess work in this matter; neither should he attempt to make the determination as to whether the insect has biting or sucking mouthparts by looking at the insect, or by looking at its mouth parts with a magnifying glass. Very few horticulturists can make this determination in this way. The better plan, and by far the most certain, is to examine the infested portions of the plants where the insects are feeding, in which case, if one finds portions of the tissue removed he can be certain that the work was done by a biting insect. If, however, he finds no portions of the tissue removed, he can be certain that the insect causing the trouble is a sucking insect. If we place upon the plant any arsenical poison, it is evident to all that just so long as this poison remains there and a biting insect attempts to eat of the tissue it will, in so doing, swallow some of the poison; and since a very small trace of any arsenical poison is sufficient to kill nearly all insects the insect will be killed. On the other hand, if a sucking insect attacks that portion of the plant, no matter how much arsenical poison may cover the tissue, it will simply stick its beak through the poison and into the tissue of the plant and suck the pure sap below, not getting any of the poison whatever.

Hundreds of cases come to my attention every year where people have sprayed with some arsenical poison in the hopes of killing such insects as plant lice, which, as you all know, is one of our most common sucking insects in the orchard and cannot be killed by an arsenical poison. Another cause of frequent failure in fighting insects is the false idea that many people seem to have in thinking that Boordeaux mixture will kill insects.

While it is an easy matter to kill almost any biting insect by means of a spray containing some arsenical poison, we must, in order to kill a sucking insect, use some substance which will not be taken into the insect when it touches its body. Usually some form of kerosene is used for this purpose. It is, therefore, evident that in spraying for a sucking insect one must do more thorough work, if possible, than is absolutely necessary for biting insects, because of the fact that the sucking insect must be actually touched by the spray at the time of spraying; while a biting insect does not need to be touched by the arsenical spray; neither does the biting insect of necessity have to be on the plant at the time of spraying.

In spraying with an arsenical poison, just as long as the poison remains on the plant a biting insect can come along any time after the spraying and, in eating of the poison, be killed. But in spraying with an insecticide for sucking insects, if the insect itself is not upon the plant at the time of spraying, and is not touched by the spray itself while the spraying process is actually going on, the insect will not be killed. One cannot expect to spray a plant for a sucking insect and then hope that the insect coming along even in a few minutes will be killed.

One can readily see then the great importance of determining whether the insect he has to deal with has biting or sucking mouth parts, and also the importance of using the proper kind of spray accordingly

The following formulae are the more common ones used in spraying for insects with biting mouth parts:

Paris Green.

Paris green, 1 pound.
Fresh stone lime, 3 pounds.
Water, 100 to 175 gallons.

Paris green is one of the most common insecticides in use throughout the country and if one obtains perfectly pure paris green it is an excellent insecticide for the purposes intended; but there is an immense amount of adulterated paris green on the market. In order to prevent this adulteration some states have passed laws requiring the paris green to contain 50 per cent arsenic. This, however, has led to a greater difficulty than the adulteration itself, since, in order to bring the arsenical test up to the amount required by law, pure arsenic is occasionally added, and as this is soluble in water, it burns the leaves and may seriously injure, or even kill the plant upon which it is placed. As paris green is heavy and settles rapidly in water it is necessary that the spraying mixture be well stirred during the entire process of spraying.

Scheele's Green.

Scheele's green, 1 pound.
Fresh stone lime, 3 pounds.
Water, 100 to 175 gallons.

Scheele's green is an arsenical poison which has a great advantage over paris green in that it is a much finer powder and therefore stays suspended in the water very much longer. In fact, by actual test, it will stay suspended in the water twenty-four times as long as paris green. Hence, in using this substance, we can greatly lessen the annoyance of stirring the liquid to anything like the extent necessary in the use of paris green. The formula and method of applying this insecticide is just the same as that for paris green. In both cases the water should be placed in the tank and the proper amount of lime, slaked in the usual way, made into a thin whitewash, strained through a gunny sack or cheese cloth into the tank of water, and stirred. The paris green, or the Scheele's green, should then be mixed up into the form of a paste in a little water and added to the tank of water and lime, and the entire mixture well stirred. The idea in straining the lime is to remove any lumps or particles that would tend to stop up many of our spray nozzles.

Substitutes for Scheele's green appear on the market under various names. I cannot advise the use of any of these insecticides. It is always better and cheaper in the long run to be careful in purchasing insecticide and get the best; and also take the original insecticides instead of taking up with patent or trade name insecticides.

Both paris green and Scheele's green can be added, in connection with the proper amount of lime, to the Bordeaux mixture, which mixture should be regarded as pure water in making this combination, thus enabling one to spray for fungus dis-

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Mechanical Agitators that *agitate* and *Automatic Brushes* for keeping *suction strainer clean*

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Best for several reasons. First—They have the greatest power, and great power is necessary to produce the fine mist in spraying which gives the best results. Second—they are strongly made and will last longest. Third—They are so constructed that the agitation of the spray mixture is perfect—and every practical man knows how necessary it is that the mixture be kept agitated. Fourth—Notwithstanding the great power of these pumps, and the thorough agitation they produce, they are easy to operate.

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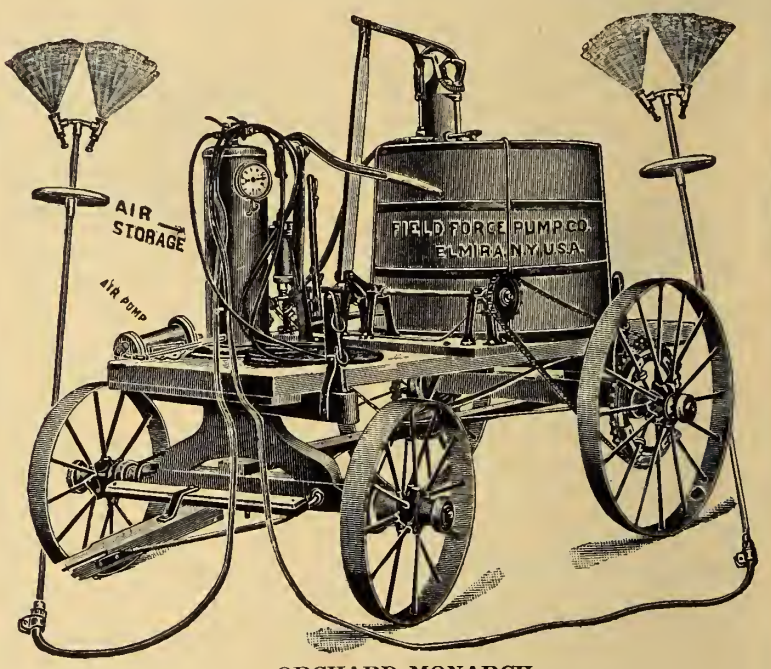

ORCHARD MONARCH.

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or any other purpose, until you investigate **"The Master Workman"** a two-cylinder gasoline engine superior to all one-cylinder engines; revolutionizing gas power. Costs Less to Buy and Less to Run. Quickly, easily started. No vibration. Can be mounted on any wagon at small cost—portable, stationary or traction. Mention this paper. Send for Catalogue. **THE TEMPLE PUMP CO., Mfrs., Meagher & 15th Sts., Chicago. THIS IS OUR 61st YEAR.**

eases and biting insects at the same time.

If one is going to spray for a biting insect without the necessity for, at the same time, fighting fungus diseases, the best insecticide one can use is arsenate of lead, which can be made in the following way:

Arsenate of soda, 4 ounces.
Acetate of lead, 12 ounces.
Water, 50 gallons.

In making this material one should purchase the very best chemicals. The arsenate of soda is to be dissolved in a half bucket of water, and the acetate of lead in still another half bucket of water; and when both are thoroughly dissolved the two are to be turned together, stirred thoroughly and allowed to stand over night. A chemical change will take place, resulting in the formation of arsenate of lead, which will appear as a white, flocculent material, nearly filling the water. The bucket should then be stirred and the entire contents turned into fifty gallons of water, when it will be ready for use. This arsenate of lead can be purchased in the market under the trade name "Disparene," and in small quantites will be found cheaper than one can make it, but in large quantities you can make your own cheaper than you can buy it.

I regard this arsenate of lead as by far the best arsenical poison ever devised for spraying plants against biting insects. It has many advantages over the other arsenical insecticides. In the first place it does not require the use of lime, and hence does not tend to stop up the spray nozzle. It stays suspended in the water much longer than any other insecticide and therefore requires very little stirring after the liquid has been thoroughly stirred and the wagon or tank started through the orchard. As the mixture is white, one can readily see exactly where and to what extent he is spraying. And it stays on the foliage of plants much longer than any other arsenical poison. When put on in good quantities it will frequently withstand a month of ordinary rainy weather. And, above all, it also has the advantage of not injuring the foliage of any plant, no matter how strong it may be made nor how much may be applied, unless it be the peach tree, which, in some cases, is injured by the use of this material, although in most cases no injury seems to result. However, in those cases where injury has been observed from the use of arsenate of lead on the peach, no other arsenical poison can be used. I would not advise the spraying of the peach tree except under very unusual circumstances, and even then one should test a few trees in order to see that no injury results.

There are other arsenical insecticides in use, such as arsenate of lime or arsenate of soda; but as the use of arsenate of lime is attended with more or less risk, and as the arsenate of soda has not advantages whatever over arsenate of lead, but is more difficult to make and more liable to injure the foliage when applied in sufficient quantities, the above three formulae are deemed sufficient for ordinary purposes where one wishes to fight biting insects.

In order to kill sucking insects, such as plant lice and the like, one should use, as a rule, kerosene emulsion made according to the following formula:

Hard soap, ½ pound.
Water, 1 gallon.
Kerosene, 2 gallons.

Churn ten minutes; add water, 19 gallons.

The kerosene emuision is made by dissolving the one-half pound of hard soap in one gallon of boiling soft water. After the soap is thoroughly dissolved and the water boiling hot, remove it from the fire, and turn in the two gallons of kerosene; then unscrew the nozzle of the spray pump and place it in the liquid, pumping the liquid back into itself, thus churning it in the best possible way. In a minute or so the liquid will become milky in appearance, but do not cease pumping. Keep this churning up vigorously for ten minutes, at the expiration of which time the material will be thick and creamy, will have increased about one-third in bulk, and the kerosene will not rise on top even after several days of standing. When one wishes to use this material, if it is too thick to mix readily with water, it may be warmed slightly, but not rendered hot, and the entire mixture is then added to nineteen gallons of water, the whole stirred thoroughly when the same will be ready for use.

As the process of making kerosene emulsion is somewhat troublesome and tedious, one can frequently do away with this by using the spray pumps with a kerosene attachment, by means of which pure kerosene is placed in one receptacle and pure water in the other, the indicator set at 10 per cent kerosene, and the spraying done without any further trouble, the water and kerosene being mixed up in the pump or in the nozzle. However, in practice, one must constantly watch these pumps, since many of them are liable to get out of order without any apparent reason, and at one minute throw not enough kerosene or at another too much kerosene and therefore injure plants. Some few pumps do not work properly at any time, and even the best may get out of order without a minute's warning. Hence, as soon as one purchases such a pump, he should make a test to see whether the pump sprays anything like the per cent indicated on the indicator; and in using the pump one should every ten or fifteen minutes make the test over again in order to see that the pump is working properly.

All one needs to do is to turn the spray into a glass jar and allow it to separate, when one can readily determine whether 10 per cent of the entire amount consists of the kerosene which is floating on top.

Tobacco Tea is also frequently used against sucking insects; and where only a small amount of spraying is to be done it is frequently an excellent substitute for kerosene emulsion, although it must be borne in mind that tobacco tea does not kill anything like all the sucking insects as well as does the kerosene emulsion or the kerosene mechanically mixed with water. The tobacco tea becomes of especial advantage when we wish to spray for sucking insects on small fruits, such as strawberries, blackberries, raspberries and the like, especially when the fruit is about to ripen. Kerosene emuision used at this time would taint the fruit.

Pyrethrum is frequently dusted on plants or sprayed on them in order to kill not only sucking but biting insects, especially on small fruits when the fruit is ripening. This substance, is fresh and pure, is an excellent insecticide and is absolutely harmless to man and other domesticated animals, but readily kills insects.

Scale Insects.

The scurfy scale, which is a small, white insect, and the oyster-shell bark-louse, which is a still smaller dark brown, or gray, insect, are both extremely common upon apple trees throughout the entire apple-growing region of the United States; and while they are not by any means dangerous insects, yet, if neglected, will do a great amount of harm, and it is, therefore, well to be on guard and keep these insects in check. They are both readily killed by one or two thorough sprayings with kerosene emulsion. The first spraying should be done shortly after the buds open and before the tree leaves out thoroughly. After the tree is in full leaf it is much more difficult to reach these insects, which are confined to the twigs and stems more especially, because the foliage catches the spray and does not allow it to reach the twigs properly.

The San Jose Scale.

Unfortunately, I must say that the San Jose scale is increasing to an alarming extent in St. Louis county, although the insect is not so troublesome in other parts of the state. It is found, however, in several localities along the eastern and western borders of the state, and is on the increase at those points but the rapidity of its spread is more marked in St. Louis county on account of the more thickly populated region, and the proximity of orchards to one another. It would be well for fruit-growers to be on the lookout for this pest, and should it appear to cut down and destroy the more badly infested trees; cut back, or prune severely, the other infested ones, and spray all trees with the lime, sulphur and salt wash, made as follows:

Lime, 15 pounds.
Sulphur, 15 pounds.
Salt, 15 pounds.
Water, 50 gallons.

In order to make this mixture, the lime should be slaked in the usual way into a thin whitewash, the sulphur and salt then added and well stirred, and the mixtures boiled for two hours, at the end of which time water should be added to bring the whole up to fifty gallons. This mixture should be applied to the plants while hot by means of a spray pump, having no rubber valves. If the pump contains spherical rubber valves they should be taken out and marbles substituted. As this mixture ruins rubber very quickly one should also be supplied with an extra hose. The trees should be sprayed preferably in the spring before the buds begin to swell, and every article of the tree should be covered with the wash, since it is absolutely necessary that each San Jose scale should be touched with the wash in order to kill it. To this end it is advisable to scrape away as much of the loose bark as possible on the stems and trunks of infested trees, since it is impossible in all cases to reach scales under loose bark, or those embedded in the cracks and crevices of the bark, or behind buds.

There is another modification of the above formula known as the lime, sulphur and caustic soda wash, which originated with the Geneva (N. Y.) experiment station, and which is prepared without the use of artificial heat. However, since the preparation of this wash is not always satisfactory we will not discuss it here, but advise the use of the mixture requiring artificial boiling as above given. This completes the list of insecticides and next month we will take up the various insects which will be found most troublesome, and discuss means of combating them.

(Continued in March Number.)

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Special tools, special machinery and the most skilled mechanics are required to make this high pressure Spray Pump, yet it is so simple in its construction and its parts so accurately fitted that

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Dust Spraying and What Is Claimed for It

Many readers of The Fruit-Grower are asking about the dust process of spraying and the claims which its advocates make for it. The following paper was read before the Greene County (Mo.) Horticultural Society by J. R. Haldeman, and will answer all questions of this kind. This paper shows what is claimed for the dust process of spraying by its advocates. A special spraying number of The Fruit-Grower would not be complete without an article of this kind, and this is one of the best papers on the subject we have seen:

"In the first place let me state that the liquid spray, having been the only method by which fungicides and insecticides have been spread upon the foliage of plants, has had quite an extensive discussion and experiments by the different experimental stations and professors of agriculture and horticulture in the different experimenting stations of the United States and Europe, and that it has received the careful attention of scholars in all of these departments, while the dust spray, having been but recently introduced, has not had, up to this time, that careful analysis of results, and discussions as the other method. While the liquid spray has been so much used, yet we find that in order to be successful there must be a very high pressure in the pump in order to throw the spray into a very thin filmy mist, and it is the opinion of professors that so soon as the foliage becomes covered with this mist and it forms into minute drops then the spraying must cease, or all the good effect will be washed off and lost. This is very difficult to accomplish and but very few accomplish the end desired. And having had a longer time for discussion, has brought to it a varied amount of formulas and different poisons and by experimenting, the effect of these upon foliage have been demonstrated; while the dust spray, having been of recent invention and introduction, has not yet had time enough to develop the variety of formulas that will be developed in the course of a few years.

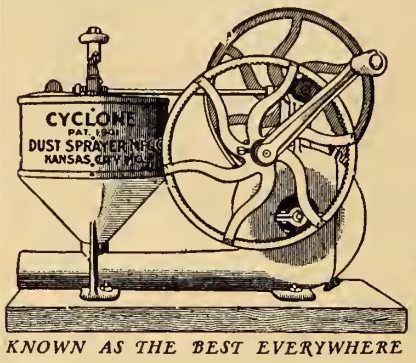
In the liquid spray all that water does is simply to act as a conveyor. It has no properties as an insecticide or a fungicide, while the lime dust is a better conveyor and a good fungicide to the liquid spray for, among others, the following reasons: In the first place, we use the fine dust of air slacked lime, which is a fungicide and insecticide in itself, and this dust blown out by the proper machine fills the air with fine dust and settles upon the foliage in such a way as to cover it completely and much more effectively than any liquid spray can do. And into this conveyor can be mixed all that can be mixed into a liquid spray, and many other ingredients that will not dissolve in water, so that it has a broader range and wider field in which to accomplish its work than can possibly be done by the liquid spray. In the liquid spray the water is thrown up and falls upon the foliage, which forms of itself a shed much like the roof of a house. This gathers and runs off in drops and streams, carrying the very material that is to accomplish the work of killing insects to the ground, while the dust spray retains whatever you may put into it, dropping upon the foliage and there resting to accomplish its work. Besides it is thrown into the trees and up on the under side of the leaves by which it reaches any eggs or insects that may be on the under side of the leaves, that it would be impossible to reach by the liquid spray, and kills them. There are scientific reasons for this. You find lime dust is an everlasting enemy to all insect life. It chokes or closes the breathing organs of the insect and renders the foliage of the trees so offensive to them that they either migrate or die, thus making it more effective to sucking and all other insects than the liquid spray.

"The Pacific Fruit World says, 'At a recent meeting of the San Jose Granger it is reported that the majority of sentiment was that the dry dust spray was just as effective, more economical and less dangerous to the trees.' This is pretty strong testimony coming from so intelligent and practical a body of men as was there represented. Most of the obtainable evidence so far has come from Missouri, and published statements may sometimes emanate from those interested in the sale of apparatus or machinery. It is often thought that a dust spray would mean a great waste of material unless the operation was performed while the dew was on the trees or that the tree had been previously sprinkled. To offset this argument one has simply to note the immense and unavoidable loss of material in liquid spraying by dropping to the ground. In the case of paris green it should be so applied that the liquid will remain in minute drops on the leaves and not run off. This is the object to be obtained in this operation and all who have tried it know how impossible is its actual fulfillment. The leaves and young bark of a tree are so covered with minute hairs that a fine dust, every particle of which is an agent for the destruction of the special diseases which it is desired to combat, must find its way to the foliage and adhere thereto much more thoroughly than a heavier liquid, whose gravity alone causes heavier loss than would a lighter dry substance.

"The dust spray is twice as cheap and three times faster than a liquid spray. Our Mr. Theime said at our last meeting: 'I sprayed my vineyard in six hours with the dust spray, while it used to take me three days with the liquid spray.' A gentleman from Kansas wrote us this last spring, 'I have just finished spraying my seventy-acre orchard of 21-year-old trees. I did it in fourteen hours and put on 800 pounds of material. I am perfectly satisfied with the dust process.' Secretary Goodman says: 'We find it so much easier of application that I have used it altogether on about 400 acres of our bearing orchard.' Dust is safe, more easily applied, costs less, takes much less time and saves hauling large loads of water, so I have concluded to use the dust process altogether.' J. E. Remsburg, on his fruit farm south of Atchison, Kan., made a practical test of spraying in the season of 1903, his orchard, containing two blocks of Jonathan apples. One he sprayed three times, using the dust method with lime and concentrated lye, blue vitrol, paris green and sulphur. The other block was not sprayed. Of the sprayed fruit more than 90 per cent that had escaped the spring freeze hung to the trees until matured. Of the unsprayed fruit fully 50 per cent dropped. Of the sprayed fruit that matured 70 per cent graded No. 1 Of the unsprayed fruit that matured only 30 per cent graded No. 1, and thus 60 per cent of the sprayed fruit and only 15 per cent of the unsprayed fruit that escaped the frost made No. 1 apples, while not enough fruit survived the frost to make one-fourth of a crop. That which survived of the sprayed fruit brought $125 per acre. That of the unsprayed fruit brought but $30 per acre. As the cost of the spraying was less than $5 per acre the investment paid 2,000 per cent.

Mr. W. D. Maxwell of St. Joseph, Mo., says: "The greatest enemies we have to contend with are the codling moth, canker worm and fungi. There is just one way to overcome these and that is by spraying. There are but two processes before the grower, the liquid and the dust process. The question is which is the best? An intelligent answer can only come from those who have given both a thorough test; is only by comparison that you can judge as to the merits. I have used the liquid seven years and the dust compound four, and my best results by far have been from using the dust. It is much easier applied, is more thorough, a great saving of labor and casts much less than the liquid. It is the only perfect fungicide known today. The scab on your fruit is produced by fungus and is the worst of all enemies to your fruit. In the formula for the liquid Bordeaux mixture we have four pounds of lime and six pounds of copper sulphate to fifty gallons of water. In the lime dust you have twenty-five pounds of powdered sulphate of copper, twenty-five pounds of powdered sulphur to one barrel of lime slacked into dust with a solution of concen-

The Development of a Simple Idea



KNOWN AS THE BEST EVERYWHERE

In the season of 1901, when we first introduced the Cyclone, we made it possible to change the conveyor in the standard formulae from the **wet** to the **dry** form. In Missouri, the parent state, **less than half a dozen growers** used the system exclusively, and only **one grower** in the state of Illinois. **None of the experiment stations** regarded the subject as worthy of much thought.

In the Short Space of Four Seasons

This simple idea has spread, by the use of our machines, into **42 states Canada, British Columbia, Australia** and the **Territory of Hawii.**

The Cyclone is used by the United States Agricultural Department, and over one-half the number of experiment schools, including one foreign station. In 1903, the first machines were sold to treat the citrus fruits of Southern California and Florida. Now these states rank well up in our list. Our exhibit at the World's Fair, where we took **Gold Medals** on our **Machines** and **Sal Bordeaux,** gave this simple idea world-wide notoriety.

By Crude Methods

At first we guessed at the formulae, and watched the results. This most important part of the work is now advanced to the solid ground of actual knowledge, based upon practical experience in the orchard. The dry conveyor is recognized as a system of spraying, by the schools, and two of our colleges have produced and published a method of making dry Bordeaux, having all the chemical properties of the old style Bordeaux.

Is Revolutionizing the Old System of Spraying

Ninety-eight per cent of the Commercial growers use our machines. They keep in close touch with us, we with them. We summarize the results of the men in the orchard, field and garden, on everything on which they use the system, over this vast territory. No firm knows as we do, nor can know, what the dust spray men are doing. We are the acknowledged authority for all reliable data concerning the **modern methods** we have introduced. If you want to know what the dust spray men are doing, and the comparative results of bot hsystems, on all kinds of fruits and vegetables, write us and ASK FOR CATALOGUE NO. 15.

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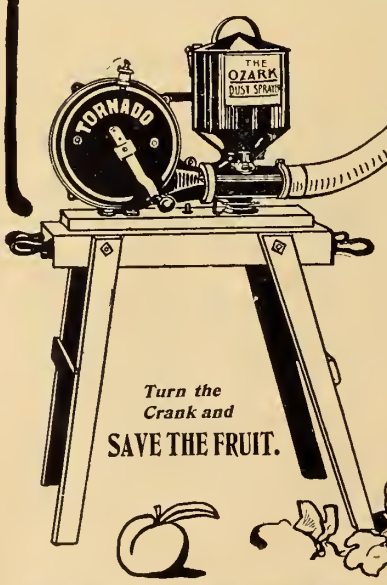

Turn the Crank and
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The Ozark Dust Sprayers Are made in Three Sizes

And are adapted to the smallest Garden or to the largest Commercial Orchard. They are the lightest, simplest, cheapest and most effective of all. Are easy to carry, easy to operate and do the work thoroughly.

Write for Illustrated Booklet, telling all about them. It is FREE for the asking.

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SPOKES ARE UNITED WITH THE HUB

and absolutely can't work loose, a statement we back by the most liberal and binding guaranty ever given a wheel. By every test they are the best. We sell more of them to satisfied customers than any two other factories. We can make your old wagon new for a few dollars, and you'll have a better wagon, handier and more serviceable than you had at the start. Don't be persuaded by an agent into buying an inferior wheel; read our book and use your judgment. Catalogue free.

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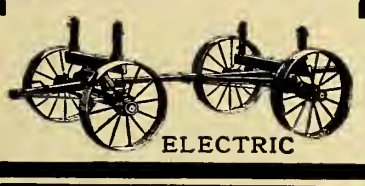

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HAWKEYE
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An elm veneer, easily put on and big enough to protect as long as protection is needed.

PRICES:

100 Wrappers	-	$0.60
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Choice Apple and Peach trees to offer for spring. Also full line of all other kinds of Nursery Stock. Get our prices before placing your order. Wholesale catalogue now ready—send for copy.

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J. B. Pilkington, Nurseryman
Portland, Oregon.

trated lye, five to ten pounds being dissolved in twelve or more gallons of hot water. Now what have you in the liquid Bordeaux? Practically nothing except sulphate of copper; four pounds of lime spread out on fifty to 100 trees, amounts to nothing. In the dust Bordeaux you have lime, blue stone, sulphur and lye. Now you have it four to one.

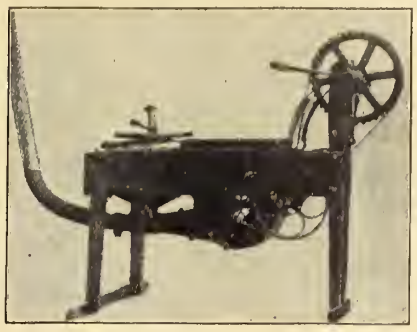
"Water being your conveyor with the liquid process it is impossible to thoroughly distribute your compound, but when lime dust is your conveyor the compound is thoroughly distributed to every part of the tree. Your insecticide in the liquid compound is four ounces of paris green to four barrels of water, while in the dust it is anywhere from five to fifteen pounds; in fact, it is pratically without limit. While we have a general formula for dust spraying yet we are to exercise our judgment as to the ingredients required. Now you have the comparison, which is not overdrawn. Which do you think is best and what are you going to do?"

Mr. Capp of Capp's Station, Ark., sprayed his forty-acre orchard eight times with the dust process and got 98 per cent of perfect apples. The great question and subject that invariably comes up in the discussion of spraying is the Bordeaux mixture, and the question is asked, How can you make the Bordeaux mixture in the dry dust spray? Well, what is the Bordeaux mixture? It is simply lime and sulphate of copper in proportion, 6 to 4, and sometimes 4 to 6; that is, four to six pounds of lime, four to six pounds of copper sulphate to fifty gallons of water. Bordeaux mixture, in its proper form and strength in the liquid spray, requires the skill of a chemist to a greater or lesser extent. But few people can accomplish this feat. In the dust spray the Bordeaux mixture is formed as follows: The lime dust is mixed with powdered sulphate of copper and is blown upon the trees while the dew is on, which is best, as the moisture of the dew forms the Bordeaux mixture, or the moisture of the dews of the following days accomplish the same end. As Mr. Maxwell says, "The dust spray includes all that the liquid spray does and is more easily applied." Prof. Mumford, answering the question of chemical changes having been made in preparing the dust mixture, says, "The change is in the copper sulphate and lime, which is changed to copper carbonate of sulphate of lime. I do not see where the value of the fungicide is lost." Prof. Irish says "that carbonate is a valuabel fungicide." Prof. Dutcher states "that he got as good results from the dust as from the liquid." Mr. Murray used the dust spray and succeeded. Prof. E. H. Jenkins of the Connecticut Experimental station says, "When milk of lime is added to a solution of copper sulphate in making Bordeaux mixture there is formed copper hydrate and lime sulphate (plaster). It is chiefly the copper hydrate in Bordeaux mixture that kills the fungi. By mixing a solution of sulphate of copper with excess of lime as in making Bordeaux mixture we change all the copper sulphate into copper hydrocide in substance, which is a good fungicide and at the same time does not harm the foliage of pears, apples and other fruits. It cannot be safely used on the foliage of peaches. It must be remembered that Bordeaux mixture can only kill fungi as it comes in contact with it. It cannot kill the fungus that has gotten into the plant tissue." Why? Because fungus diseases are moist and facilitated in their growth by wet or damp weather and the liquid spray assists in adding moisture and the poison is lost in a large degree by being washed off; while the dry dust spray of lime and accompanying poisons adhere to the moist fungus and penetrate to its vitals. The same is true of its effect on fruits that have been stung by circulas or other insects, which deposit their eggs in the fruit, and the juice flowing from the sting prevents the liquid spray from reaching the egg, while the dust adheres to the moisture and the poison takes effect on and kills the eggs and heals up the wound in the fruit.

There are many other facts and illustrations that might be brought out in favor of the dust spray as against the liquid process, but my time is up. Paul says, "Prove all things and hold fast to that which is good." In conclusion let me say that spray all must. Then let us prove them and use the best.

SPRAY WITH DUST

That is the conclusion of every fruit-grower who expects satisfactory returns from the orchard, garden or berry patch. Get the machine that will do the work in a satisfactory way with the least expense.



The Whirlwind

Is the only machine that will do this. Write for descriptive catalogue and prices. A correct formulae furnished with each machine.

Letters below are samples of comments we are receiving on the Whirlwind:

Goreville, Ill., Dec. 27, 1904.

The Kiser Whirlwind Duster Co., Stanberry, Mo. Gentlemen:—Yours of Dec. 21, 1904, received. Will say in reply that I used the dust spray this season, and shall try it another year. Had but few wormy apples, but more scab than ever before, but this was a very favorable season for scab—so much wet weather. I am of the opinion that it will prevent scab to a certain extent. I picked 500 barrels of good fruit off of 14 acres, while no one else in this part of the country had any at all, or at least none of much account. If you had a man at Goreville about spraying time to give a practical illustration in dusting and how easily the dust is prepared and applied, you might sell some machines, as everyone attributes my crop this year to spraying, and many claim they will spray in the spring. Respectfully yours, J. M. MEAD, Goreville, Ill., R. F. D. No. 1.

Stanberry, Mo., Jan. 13, 1905.

Kiser Whirlwind Duster Mfg. Co., Stanberry, Mo. Gentlemen:—I am well pleased with the Whirlwind Duster which you furnished me last season. I sold over 200 barrels of apples gathered from about five acres of my forty-acre orchard near Mt. Pleasant, in this county. The remaining thirty-five acres having been set later, was not in bearing. My home orchard about two and one-half miles away, and also a thirty-five-acre orchard belonging to another man, and located between my home orchard and my Mt. Pleasant orchard, both of which have never been dusted, had such inferior fruit that the buyer would not take it at any price. Now that the problem of making dry "Bordeaux mixture" has been solved, I think apple scab can be successfully combatted with your duster. The cost of dusting is much less than the liquid spray, and I am convinced that the dust process is far superior. I like your machine better than any that I have seen. Yours truly,
FRANK JONES.

THE KISER WHIRLWIND DUSTER MFG. CO., STANBERRY, MISSOURI

PATENTED

For Spraying Use Graves & Fry's *Dust Sprayer and Formulae*

Best on the market at lowest price. The only successful way. Formulae furnished with each Sprayer. Has been fully tested and proved satisfactory. Guarantee big results. Write for particulars.

Security Business Company *Supply and Territory Agents*
Suite 4, Corby Building, ST. JOSEPH, MO.

Tobacco Dust for Woolly Aphis.

The recommendation of the experiment stations concerning the treatment of trees infested with woolly aphis have been printed in The Fruit-Grower a great many times, yet each spring some persons ask about this. The remedy which is most generally recommended now is to use tobacco dust. The subterranean form of woolly aphis, as is well known, is found upon the roots of apple trees. Spray mixtures, of course, will not reach them. But if the surface soil is scraped away to the depth of a few inches tobacco dust can be sprinkled about the tree, and as the rains leach this down into the soil the insects at work upon the roots will be killed. The trees will be the better for the use of the dust, for tobacco dust is a fertilizer of value. The Mayer Fertilizer & Junk Company, St. Louis, Mo., furnish tobacco dust in any quantity. Write for prices, mentioning The Fruit-Grower when you write.

Fine Mist for Spraying.

Mr. Samuel D. Gregg, Independence, Mo., calls attention to the fact that the reason many growers are not successful in their spraying operations is because they apply the mixture in a stream, instead of in the form of a fine mist, which is necessary for good results. His experience has been, he says, that too many growers are not willing to take time enough to do the work properly. In his letter Mr. Grogg also says he believes the curling of the peach leaves last season was caused by the presence of the aphis, rather than by a fungous disease. He has frequently noted that leaves which are infested with the aphis will curl up in this manner. While this is true, at the same time the curling of peach leaves last season was due to the regular leaf curl disease, and the insects were not present.

GAIN ACRES by clearing that stumpy piece of land THE HERCULES Stump Puller pulls any stump. Saves time labor and money
Catalog FREE. Hercules Mfg. Co., Dept. 37 . Centerville, Ia.

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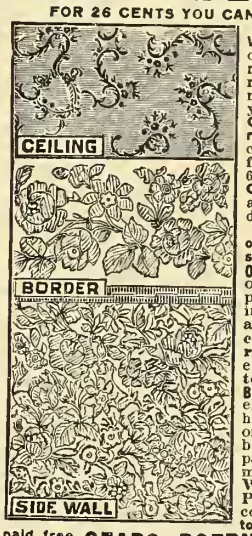
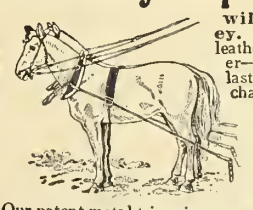
FOR 26 CENTS YOU CAN PAPER A ROOM.



Our New Plain Floral Wall Paper, as illustrated, only 1½ cents per single roll, 3 cents per double roll, handsome border to match, only ½ cent per yard (8 yards for 1 cent) **Cost of this paper for a room** 11x11 feet, height of ceiling, 9 feet, is 20 cents for sidewall and border 6 cents for ceiling. **TOTAL COST ONLY 26 CENTS.** allowing for two ordinary doors and windows. **DON'T BUY A ROLL of WALL PAPER until you see OUR FREE SAMPLE BOOK OF NEW PAPERS** and learn our astonishingly low prices, wonderful values in gilt, embossed, bronzed and ingrain papers, **at 6 cents to 20 cents per roll, same as dealers everywhere ask 12 cents to 60 cents per roll. THE BOOK OF SAMPLES IS FREE,** explains how to order, how to tell how much to order, tells all about how to hang paper, how to make paste, how to select harmonizing colors, etc. **Write and ask for Wall Paper Samples** and the complete book **will be sent to you by return mail, postpaid, free.** Address, **SEARS, ROEBUCK & CO.,** CHICAGO ILL.

Economy Rope Harness



will save you money. It is stronger than leather harness—is lighter—cheaper to repair—lasts longer—does not chafe or irritate—does not need to be oiled—no stitching to rip. It is made of the strongest and most durable rope obtainable and is adjustable to fit any team. Our patent metal trimmings are easy to remove and can be used over and over again. GUARANTEED. *Picture gives very good idea of harness.* Double harness (except collars) $8.00, and your money back after 10-days test if not as represented. Freight prepaid on sample harness. Send for our circular.

H. S. WILLSON MANUFACTURING CO.
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"BABY" Hammerless Revolver

American Made. Interchangeable Parts. For Vest Pocket or Ladies. Cut 1-3 size—1½ oz. 22 calibre—6 shot-rifled. Sample mailed $2.50
Address, **H. M. KOLB,**
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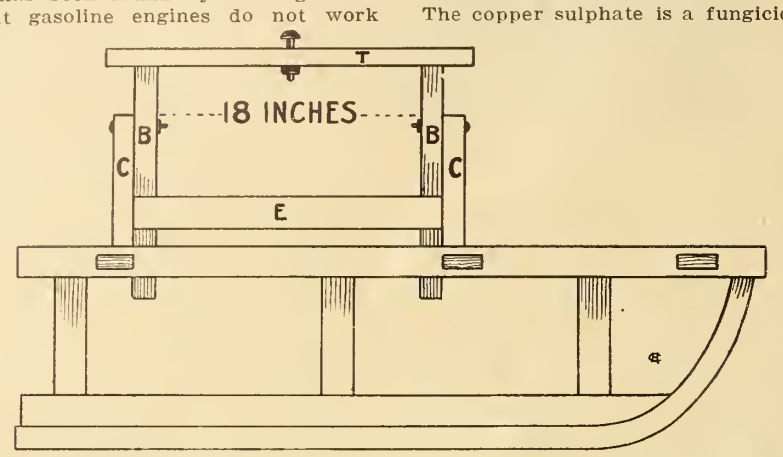
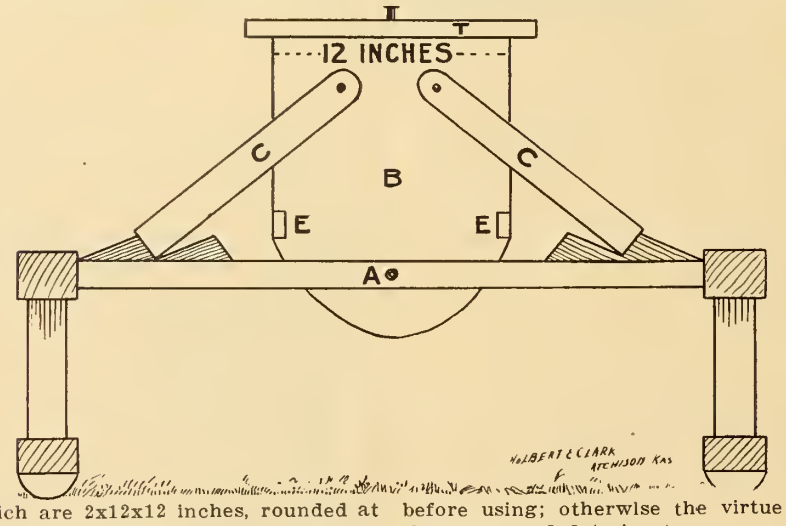
THE FARMER'S JOY
Sickle and Tool Grinder, with Emery Dresser and Wrench, **$3.45**
Sharpens Mower Knives, all Tools, Skates, Shears, etc. Guaranteed satisfactory or money back. With all Steel Foot Power Frame, and Polishing and Disc Grinding Attachments, $3.95 extra.
Western Implement Co.
Dept. R Port Washington, Wis.

For Spraying on Steep Hillsides.

S. Allen, Olney, Coleman's Falls, Va., sends a sketch of a swing table which he uses in dusting an orchard on a steep hillside. The arrangement seems adapted to use where liquid pumps are to be mounted on the sled, and it will interest Fruit-Grower readers who have hillside orchards. It may be said in this connection that it has been found by some growers that gasoline engines do not work well on steep hillsides, and this plan may solve a way of using this style of power sprayers even in steep places. Mr. Olney says:



"Most of my orchard is even steeper than is indicated by the diagram, and in dusting the orchard I found the dust did not feed well when the machine tipped to one side. The whole top was inclined to roll over. The swing table I have made keeps the table comparatively level. The table, T, is nailed to two side pieces, BB,



which are 2x12x12 inches, rounded at the lower ends, through which a long rod passes, A. This rod goes through the center of the two rear cross-pieces in sled, and can be removed. Four props, CC, keep table in position required, and two braces, E, keep sides rigid.

"The upper illustration shows a side view of the sled on level ground, the middle one shows the rear view on level ground, while the lower picture shows the rear view on a steep hillside. It will be noted that the props, CC, can be adjusted, so that the sled can be used on either slope. A light horse can pull this arrangement anywhere."

We believe the illustrations are sufficient to enable anyone of an ingenious turn of mind to construct an outfit which can be used on almost any hillside which can be planted to trees, and the spray pump, or tank, or dusting machine, as the case may be, will be upright at all times.

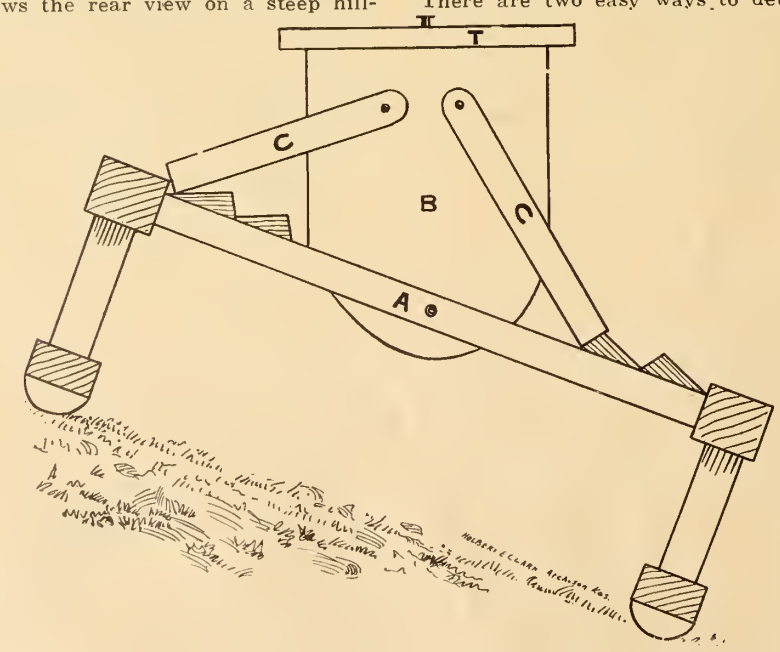
Mixing Ingredients for Spraying.

A common formula for the preparation of Bordeaux mixture is one pound of copper sulphate to twelve gallons of water, and where leaves are to be sprayed one pound of lime added.

The copper sulphate is a fungicide; but the acid in the sulphate is destructive to all vegetation and must be neutralized by the lime before using. When spraying is done on a large scale it is easy enough, by complying with the formula, to have the preparation just right; but it often happens that one wants to spray only one or two or a few trees only, when trees are in leaf; and we are told by the best authorities on spraying that the lime water must not be introduced into the mixture until a short time before using; otherwise the virtue of the compound deteriorates.

Now, supposing we have a quantity, say a barrel of the dissolved copper sulphate and a tub of prepared lime water or whitewash, and e want for present use but a pailful of the mixture. How shall we know how much lime to use? What we really want to be sure of is that the acid in our mixture is entirely neutralized by the alkali of the added lime water.

There are two easy ways to determine this without bothering with measurements.



1. If yellow prussiate of potash, to be found at all drug stores, is dissolved in water, and a little of this is dropped into a cup of the copper sulphate solution, it will make a deep brown cloud or stain in the solution. After some lime water is added to the sulphate, prussiate will make more or less of a stain until enough of lime water is added to entirely neutralize the acid of the sulphate, when a drop of prussiate will no longer affect the color. Of course, a little time should be given after each addition of lime water for the neutralization to take place.

The only objection to this method is that prussiate of potash is a dangerous poison, and must be kept out of the reach of children and careless persons; and for that reason many persons do not like to have the stuff around.

2. Use litmus paper. Litmus is a deep blue coloring matter obtained from certain marine plants, and may be purchased either in small lumps from chemists in our larger cities, and when dissolved and carefully dried for use; or the sheets already prepared may be purchased for a trifle from druggists.

Litmus paper has the peculiar property of turning from light blue to light pink if moistened in water in which there is any free acid. For use the paper is cut into narrow strips. After one has mixed some lime water with the copper sulphate solution, stirred it well and let it stand a little while, the strip of litmus paper should be inserted a quarter of an inch or so into the mixture and carefully observed. If the strip of paper takes on a pinkish color you may be certain there is still free acid in the mixture, and more lime water should be added; and so on, until the paper remains blue after the last addition. A small excess of lime will not destroy the effects of the copper in the mixture as a fungicide.

Iowa. D. A. FLETCHER.

The Best Trees and Plants Grown

are now labeled with a **Red Tag** which guarantees the quality of every tree shipped from the Phoenix Nursery Co.

Genuine Phoenix Trees and Plants

bear this Red Tag. We caution our customers to reject any stock represented as "Phœnix grown" that does not bear this **Red Tag.** Any stock offered without it is spurious. Now is the time to order for Spring planting. Our immense stock includes the best of the new varieties, all the old standards, and is guaranteed strong, healthy and true to name. We have been in the nursery business for fifty-two years and have the largest trade in the United States. Send for the Phœnix Catalogue. *It's free.* You can deal with us by mail, more satisfactorily than through agents and at *half the cost.* Our name and reputation guarantee the best. *Write to-day.*

Look for this Tag on every Phoenix Tree. It is your protection and our guarantee.

PHOENIX NURSERY CO., 370 Park St., Bloomington, Ill.

OUR TREES **FRUIT and Ornamental**

Shrubs, Roses, Vines, Plants, Seeds, Etc.,

Have been the standard of excellence for **Over Half a Century** We offer everything of the best for

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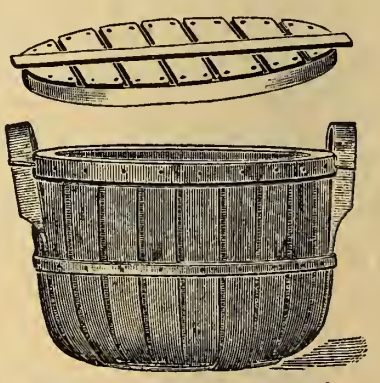
THE STORRS & HARRISON CO., Box 38, PAINESVILLE, OHIO.



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with slat covers for shipping

Seed Potatoes, Onion Sets, Seed Corn, Etc.

They are the handiest, cheapest and Best package on the market for shipping fruits and vegetables. Write for Catalogue and price to the

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Root Grafts

Made to your order by interested workmen. Healthy material. Over 30 years' experience in handling. Write for winter price list.

SHENANDOAH NURSERIES

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PAINT WITHOUT OIL

Remarkable Discovery That Cuts Down the Cost of Paint Seventy-Five Per Cent.

A. L. Rice, a prominent manufacturer of Adams N. Y., has discovered a durable, fireproof and weatherproof paint which adheres to any surface, wood, stone or brick, spreads and looks equal to the best oil paint and costs about one-fourth as much.

A free trial package is mailed to every one who writes. You can save a good many dollars. Write to-day.

Address, A. L. Rice, 434 North St., Adams, N. Y.

$11.50 WINDMILL

FOR $11.50 and upward we furnish the highest grade galvanized steel Pumping Windmills made. For $22.40 and upward we furnish Windmills, complete, with the highest grade galvanized angle steel towers made. For the lowest prices ever known on all sizes of Windmills, Towers, Tanks, and the most liberal and wonderful windmill offer ever made, write for our Free Windmill Catalogue.

Address SEARS, ROEBUCK & CO., Chicago.

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Right cultivation makes them fruitful. Every inch of soil pulverized and a perfect seed bed made with the

"TRIUMPH" Sulky Harrow

Ideal for Orchard and Vineyard. Wide tire wheels, light draft. Every tooth cuts its own furrow. No trailing. **Shipped on Approval. Sold on Time. We Pay the Freight.** Give it a fair trial and if you like it pay for it next October. You take no risk. Send for catalog and introductory offer.

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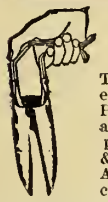

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The only PRACTICAL DIBBLER ever made for setting, TRANSPLANTING and fertilizing plants; also weeding lawns and other purposes. 50c by mail. J. J. OLINGER & CO., 200 West 44th St., New York. Agents wanted; write for illustrated circulars and terms.

Pan-American Strawberry

A plant that produces large and continuous crop of fine strawberries from August 1st until winter. Fruits on new runners and old plants. A strong grower that needs no petting. Price of plants $1.00 each, 6 for $5.00, 12 for $10.00. Address all orders to
SAMUEL COOPER, DELEVAN, N. Y.

Wanted TO EXCHANGE NURSERY STOCK FOR A GOOD **TYPE-WRITER**

good second-hand or medium-priced new one. Our stock is good, prices are right, and satisfaction guaranteed. Wholesale and retail.
Tecumseh Nurseries, Cedarville, Ohio.

APPLE ROOT GRAFTS SEEDLINGS TREES

We can make it to your interest to correspond with us concerning the above.
Jackson County Nursery Co.
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Strawberry Plants

Only a price list issued this season. All wanting plants should send for it.
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Strawberry Plants

Auto, Bubach, Climax, Uncle Jim, and all the best varieties. Catalogue free. CALEB BOGGS & SON. Cheswold, Del.

50 PACKAGES FLOWER SEEDS 50c

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You can sell these High Grade Seeds at 5c. each, to your neighbors, and make $2.00 for your trouble, for only a few hours' work. This is a grand chance to make money for small investment. Some of our agents have cleared $200 in cash. Send 50c. and will send seeds at once, delivered to you. Postage paid. Order early.
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Strawberry Plants

Millions of them. Grown under special care, with the view of producing plants of the highest quality that will yield abundant crops of large fine berries. These are the kind of plants that you get if you buy of **W. W. THOMAS, The Strawberry Plant Man, Anna, Ill.**
Write for prices.

Immune Hogs

By feeding the sow Ridgway's Vaccine—10 cents a litter—the pigs are vaccinated before birth, hence are born **cholera proof.** One million successful tests, 10,000 strong testimonials. In further proof will ship my own pigs and expose anywhere in sick cholera herds, **at my own expense.** Agents wanted.
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OUR WIRE BOARD
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We manufacture 26 styles of fence, for poultry, farm, park and other purposes. We sell direct to farmers giving **30 Days' Free Trial** Freight Prepaid. It will pay you to write for prices and our FREE FENCE BOOK. Tells why Advance Fence is strong, durable and up-to-date. You save the dealers' profit in dealing with us. Just remember that when you need fence.
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The March Fruit-Grower

Before making announcement of the March issue of The Fruit-Grower we desire to explain the omission of two articles from this number. One was by Prof. J. C. Blair on the subject of "Power Sprayers." We had the promise of this article, but at the last moment Prof. Blair wrote that owing to unavoidable circumstances he had been unable to prepare the same. He sent two photographs to illustrate the article and says he will try to have it next month. Dr. J. C. Whitten was to have prepared an article on "Apple Scab" for this issue, but has been sick with the grip, and consequently was not able to prepare this article. It is hoped to present it, too, next month, in time to help growers wage war against this disease which was so troublesome last season.

The March issue will be a gardening special. A number of gardening articles will be furnished, and the general air of the paper will be that of springtime. The cover pages will be printed in two colors, yellow and dark green, the title page design being a beautiful flower garden scene.

Mr. T. E. Orr will conclude his series of articles on fruit and poultry as allied industries.

The article by Prof. Stedman which begins in this issue will be concluded next month, with description of many of the more common orchard insects, with directions for fighting them.

The article which began this month in our poultry department will be concluded next month.

To help make this Gardening number one of the best papers we have ever issued we make this

Special Proposition to Subscribers:

We want the experience of our friends in their gardening work along the following lines:

What novelties in garden vegetables have you tried lately, and with what results?

What is the most profitable garden crop you ever raised? Give figures, and tell how you handled the crop.

What new method of garden culture have you tried which saved labor or increased yield?

Make the articles short and crisp, not exceeding 500 words. For the best article we will pay $5 cash, for the second best $3 cash and for the third best $2 cash. For every other article which we use we will forward a set of five of our Brother Jonathan booklets, as soon as they are ready.

In sending articles in this contest write plainly and on only one side of the paper. See that the articles reach us by March 1.

Now, this Gardening special should be made most interesting, and with the help of our readers it will be. Send your experience, and help to this end.

The Condition of Fruit Buds.

As The Fruit-Grower goes to press much interest is manifested in the probable condition of fruit buds, especially of peaches. The extremely cold weather has undoubtedly killed the peach buds over a wide range of territory, but just how widespread has been this damage we cannot say at this time. From the Missouri River northward in Missouri, and in the same latitude in adjacent states, it is believed the peach buds are nearly all killed. There is also some complaint of injury to blackberry and raspberry canes. Strawberries were, as a rule, under a deep snow, so they are likely all right.

The Fruit-Grower did not send out any report cards this month, believing that reports which are made so early, at a time when the weather is changing very often, are often very misleading. There is really no benefit to be derived from reports of this kind at this time, and therefore we will have our first crop reports in March issue.

In making these reports The Fruit-Grower asks the co-operation of our readers everywhere. These reports can be made of great value to growers, for they will advise them of the probable crop in various localities. These reports can be made to help our new department devoted to the shipping associations very materially. If there is anything of especial interest in your section, send a brief report of this to The Fruit-Grower. Do this about March 1, so the reports will reach us in plenty of time for our next issue. Suggestions are invited for the improvement of these reports, so they can be made more helpful to growers.

Demonstration of Spraying Machines.

The Fruit-Grower is advised that on Feb. 24 there will be a contest between, or a demonstration by, a number of spraying outfits in the Hoover orchards near Wichita, Kan. Those who can do so will be well repaid for a visit to this demonstration, for the strong points, as well as the weak ones of a number of pumps will be brought out at that time. Everyone is invited to attend.

CURE YOUR OWN KIDNEY and Bladder Disease at Home at a Small Cost. One Who Did It Gladly Tells You How.

Mr. A. S. Hitchcock (Clothing Dealer), East Hampton, Conn., wishes us to tell our readers who are suffering from any kidney or bladder diseases, that if they will send their address to him, he will, without any charge whatsoever, direct them to the perfect home cure he so successfully used.

Knowing, as he so well does, the failure of almost every other treatment in stubborn cases, he feels that he ought to place in the hands of every suffering man and woman this simple, inexpensive and withal positive means of restoring themselves to health.

Our advice is to take advantage of this most generous offer while you can do so without cost.

The American Horticultural Distributing Co.

Manufacturers of and Wholesale Dealers in

ORCHARD SUPPLIES and SPRAYING MATERIALS

CON-SOL (Our Lime Sulphur Wash) brings profit to the fruit industry. Dilute one gallon with forty gallons of water.

EMULSIFIED CON-SOL — Harmless to foliage. Dilute one gallon with forty gallons of water for summer spray and one gallon to twenty for winter.

Both the above solutions GUARANTEED to kill the San Jose Scale and contains the most powerful Fungicide known.

OUR STANDARD BORDEAUX contains the highest Government Formula. Saves labor and trouble. Dilute one gallon with fifty gallons water.

GRAFTING WAX — A superior quality; put up in any size package.

SPRAY PUMPS—A full line of all sizes and descriptions, both hand and power.

Prices and full information on anything in the Horticulture line upon request.

American Horticultural Distributing Company
MARTINSBURG, WEST VIRGINIA

Pack Peaches Properly BY USING Tarlatan Covers

These covers resemble a fine meshed cotton mosquito netting, and are of a peculiar shade of bright red which brings out all the natural coloring of the peach. They are quickly applied in a simple manner to any style of basket. Can be used with or without slat covers and do away with the need for burlap where that is used. They hold the fruit firmly, thus preventing bruising in transit and protect the fruit from dust and insects. Many of the largest shippers and growers of peaches have used them for years and would not do without them, claiming that they greatly facilitate the sale and enhance the selling price of their fruit.

Write to us and we will give you more reasons why you should use our TARLATAN PEACH COVERS.

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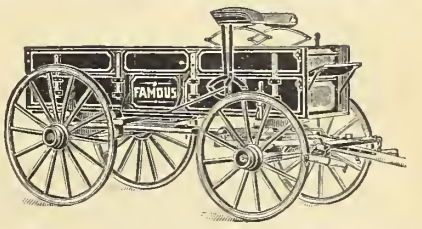

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Tell Your Own Fortune

Your life, past, present and future is in your hand; read it plainly by our FORTUNE TELLING CHART. Plainer than any book. Life size diagram of the hand, with all lines and meanings. Sent postpaid for 10 cents. HINDOO PUB. CO., Dept. D. Bridgeport, Conn.

BERRY TICKETS

No bookkeeping in the berry field; no trouble in settling with pickers. Every grower should use them. SAMPLES FREE. T. M. JONES, Goreville, Ill.

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CODLING MOTH
and all leaf eating insects, spray with
Swift's Arsenate of Lead
It will not burn.
It sticks and will not wash off.
MADE ONLY BY THE
MERRIMAC CHEMICAL COMPANY,
BOSTON, MASS.
Be sure and get Swift's. If your dealer does not handle it, write direct to us.

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KILLS SAN JOSE SCALE
Write for circulars and testimonials.
DRY OR LIQUID FORM
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"The best that money, location, and experience can produce."
Cannedy Trees
are the best that can be grown. You can get no better, no matter what you pay. A complete line for spring delivery. Write for prices. Salesmen wanted. Nurseries at Carrollton and Jerseyville.
JOHN A. CANNEDY, Carrollton, Ill.

WANTED
Competent man to manage 40-acre Michigan fruit farm. Good place for right man. Married man preferred. Address
WALTER KILBOURNE
202 Michigan Ave. CHICAGO, ILL.

FRUIT FARM FOREMAN WANTED—For a 250-acre fruit farm in Lawrence County, Ohio, 3 1-2 miles north of Huntington, W. Va. 10,000 apple and 4,000 peach trees three years old. Must be energetic, sober and experienced in every department of fruit and vegetable growing. Wages paid include house and garden free. To take charge March 1st or earlier. Address, giving detailed account of experience and references. West Virginia Fruit & Poultry Co., Huntington, W. Va.

WANTED—Practical out-door nursery foreman, prefer single man; state age, nationality, experience and salary expected. References required. Address W. T. HOOD & CO., Richmond, Virginia.

WANTED—A man and family on fruit and hay farm. Address W. C. Hopson, Milton, Oregon.

Colman's Rural World
58th Year
The Farmers and Fruit-Growers paper. It has an excellent Horticultural denartment.
Published every week 52 times a year.
Conducted by Norman J. Coleman, first Secretary of Agriculture of the United States.
Terms, $1.00 a year, but to double our already large circulation, we will send it to New or Trial subscribers for one year for only 50 cents.
Send for a free sample copy. Address.
NORMAN J COLEMAN,
Holland Buld., St. Louis, Mo.

The article on Irrigable Public Lands on page 2 of this issue will be found deeply interesting—and, maybe, of more consequence. An opportunity to get a piece of government land—on any terms—will soon be past beyond recall.

Questions and Answers

"Con-Sol."—We beg leave to make correction to the reply to an inquiry relative to "Con-Sol" in the January issue of The Fruit-Grower. In the first place we manufacture two kinds of "Con-Sol."

1st.—"Con-Sol" (our lime-sulphur wash) contains, per gallon, 3 6-10 pounds of soluble sulphur, in combination with equal or more valuable materials, bringing the available material per gallon to 9 pounds. The weight of one gallon of "Con-Sol" is a little more than 12 pounds. As we have said we have nine pounds of chemicals, having killing qualities upon the scales. After diluting one gallon of "Con-Sol" with 39 gallons of water the diluted 40 gallons (320 pounds) containing 9 pounds of available material. This is equivalent to about 3 per cent available materials when diluted. This 3 per cent of available chemicals, compared with the well known insecticide formulae, will show undoubtedly that our figure represents a fair average. Many farmers prefer to have a higher percentage in this spray, and therefore dilute 1 to 20; even in this, "Con-Sol" represents a cheap material. Now, we have to state we are speaking about out new "Con-Sol," which before its recent improvement, contained a lower figure of available material.

2nd.—Emulsified "Con-Sol" contains 60 per cent oil, and 20 per cent of equally valuable materials, and is under all conditions perfectly soluble in water. This preparation, when diluted in water in any proportion does not hurt the foliage. It is the only spray on the market which will positively kill the San Jose scale and other sucking insects when applied in the summer and not injure the foliage.

This preparation, as well as other horticultural and agricultural chemicals, are manufactured under the management of a chemist, whose work and scientific standing about insecticides, is acknowledged by more than one competent entomologist of the United States and Europe. We guarantee the effective work of our preparations, and that is all we have to say. The judgment we leave to the common sense of the fruit-growers, who will find out in due time that we are able to bring on the market the best preparation known, for each specific purpose.

THE AMERICAN HORTICULTURAL DISTRIBUTING CO.
Martinsburg, W. Va.

T. A. S., Adena, Ohio.—I have an orchard of 1,800 trees one, two and three years old, consisting of peach, pear, plum, cherry and apple. Trees have been cultivated in corn until now; orchard lies on western slope, land is hilly and washes with heavy rains. What is the best method of culture for this orchard in future?

Theoretically, most growers would say to cultivate in corn, if trees do not crowd too much, and after that give clean cultivation until midsummer, and then seed down to some cover crop for winter. Practically, however, this is a hard proposition on hill soils which wash badly. This is one thing which must be worked out, the treatment of hillside orchards. A crop of clover will keep the soil from washing will enrich the soil, and at the same time will not make a tight sod. To sow these orchards to clover is a popular move on the Missouri river hills. Who has a better plan?

G. D. C., Glen Ellyn, Ill.—What is the best time to prune a young cherry orchard?

Cherry trees are pruned but very little, most growers simply removing branches which cross, etc. The work can be done at any time, and is usually done just before growth starts in spring.

W. H. B., Hamilton, Mo.—My Wild Goose Plum trees are affected with black and green lice, which are found on the under side of the leaves, and which cause fruit to fall and leaves to curl. I have several varieties of Japanese plums planted alongside but they have not been affected. Is the Wild Goose alone subject to this attack? (2) Describe black knot on plums.

The plant lice or aphids, are found on other varieties of plums, and on cherry, etc. The remedy is to spray with weak kerosene emulsion, or even strong soapsuds will often be effective. The pumps which mechanically mix oil and water can be used to advantage. (2) Black knot of plum is a warty growth which appears early in spring. No good remedy has been found, but the most common one is to cut away the infected part, and burn.

G. D. C., Glen Ellyn, Ill.—How early should spraying begin on a young orchard with fungicide, and how early with insecticide?

Do you mean how early in the life of the orchard, or how early in the season? If the former, begin spraying when anything is present to spray for; spray with an insecticide when insects are present, and with a fungicide when fungi attack the trees. If you mean how early in the season, most growers make an application of a fungicide just before buds open, then with a combined fungicide and insecticide just as the blossoms are falling, and before the calyx end of the apple closes. If one spraying must be omitted, omit the first one, before buds open. This refers to apple orchards, which is supposed to be what is meant in the question.

T. R. P., Excelsior Springs, Mo.—The horticultural denartment of the Missouri station has been testing varieties of peaches adapted to the climate of Northern Missouri, and reports that all failed last year except Connett (Southern Early), Thurber, Lewis, Carman, Champion, Crosby and Golden Drop. Please state which are seedings, and also enlarge the list as much as possible.

It is likely the original tree of each of these varieties was a seedling, but of course the thousands of trees which have been planted were propagated by budding, so that the individual trees under test were all budded trees, but have all descended from seedlings. The Greensboro may well be added to this list as an early one.

J. J. H., Hutchinson, Ark.—Some sort of an insect draws the leaves of my apple trees to the twigs and ties them with a web. What insect does this, and what the remedy?

The apple-leaf roller and the leaf crumpler both fold leaves over and feed within the protection thus afforded. The latter is perhaps the more common; the latter pass the winter enclosed in a case which is attached to the tree; the former pass the winter in ruhbish heaps and similar places of concealment. Where orchards are sprayed with arsenites for codling moth both these insects will be held in check, for both take food by chewing.

A. H., Choctaw, Okla.—Would it be profitable for me to plant the tangelo, grape fruit, or Japan or English walnuts, almonds or figs for outdoor culture?

You are likely out of the belt for any of these, except, perhaps, the Japanese walnut, which some growers are testing even farther north Figs are grown in St. Louis, Mo., but are laid down and protected during winter.

F. H., East Alton, Ill.—What do you consider a safe distance to plant peach trees for the production of good fruit, and also so one can drive through the orchard? Is fifteen feet each way too close?

The latter distance is too close on Illinois soils. It has been demonstrated that the brown rot of peach is less prevalent where trees are far enough apart to allow plenty of sunshine to enter. A safe distance is twenty feet each way, although some growers plant closer in the row. J. H. Hale has some trees planted fifteen feet apart, in Georgia, but is now planting at a greater distance.

F. J., Corning, Iowa.—Please tell me if the Cumberland and Columbian raspberries will stand the winters in this part of Iowa, without covering. If not, will you kindly name some large, good bearing variety, especially black saps, that will?

Answer by Prof. Erwin, Ames, Iowa—The Cumberland has been pretty thoroughly tested and has proven a very satisfactory berry for Southern Iowa. In occasional winters, it does suffer, as do about all other sorts, but in general it is very good. Mr. R. D. McGeehon, of Atlantic, Cass county, who has had over a quarter of a century of experience in Iowa with small fruits, writes regarding this variety: "I have fruited the Cumberland for five years and it has beat everything on my grounds in quantity, quality and size. Some of the berries have measured seven-eighths of an inch in diameter." The Columbian has not been planted extensively in Iowa and reports regarding its value are quite conflicting. Personally, I should feel inclined to substitute the Kansas for it.

J. V. G., Bradford, Tenn.—(1) Will the York Imperial apple succeed in West Tennessee? (2) Will it be profitable to use ground tobacco stems around peach trees on thin clay land at $20 per ton? How much should be used to the tree? I have plenty of barnyard manure, but thought best to use the manure for early crop of Irish potatoes. How does pulverized tobacco stems compare with cottonseed meal, at same price?

Answer by Prof. Keffer, Tennessee Exp. Station: (1) The York Imperial apple is considered to be well adapted to this state. (2) The fertilizer value of tobacco stems will not amount to $20 a ton. The average analysis is 2.35 per cent nitrogen, .20 per cent potash and .70 per cent phosphoric acid. At 15 cents a pound for nitrogen and 5 cents a pound for potash and phosphoric acid, the fertilizer value of a ton of tobacco stems would be $15.95. Calculated in the same way, the fertilizer value of a ton of cottonseed meal is about $25, but the two materials differ greatly in percentages of plant food elements; for average meal will analyze 7 per cent nitrogen, about 3 per cent potash and 2 per cent phosphoric acid. Neither one of these materials is well supplied with phosphoric acid, so that on most soils it would be highly advisable to use acid phosphate along with either one of them. Equal parts of cottonseed meal

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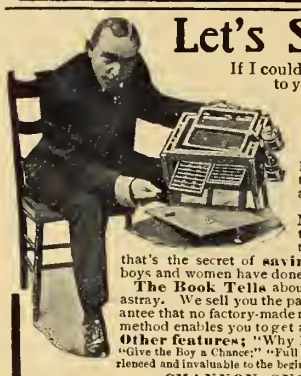
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and acid phosphate will make a good general purpose fertilizer. A good mixture of the three materials would be in the proportions of one-third tobacco stems, one-third cottonseed meal and one-third phosphate. This mixture would analyze not far from 5 per cent available phosphoric acid, 3 per cent nitrogen and 4 per cent potash.

J. M., Bloomingdale, Ill.—In building smudges of wet straw, etc., is it the smoke that affords protection from frost, or is it the heat which is carried up by the smoke? Is it necessary to burn smudges before, say, 5 o'clock in the morning, to protect against injury by frost? Is it important to protect the buds from the heat of the early morning sun by means of the smoke? May it not be that the smoke thaws the buds out gradually, while if they were left for the sun's heat they would be thawed too rapidly and spoiled?

Answer by W. L. Howard: It is the dense cloud of smoke that furnishes the chief protection to fruit trees, although the heat generated from the smudges also undoubtedly assists. The smoke clouds prevent the escape of the heat that is being radiated from the earth. Smudges should be started as early in the morning as there is danger of frosts, which can usually be detected by the temperature and atmospheric conditions. If frost is avoided by means of smudges, no further protection is needed, as the heat from the early morning sun would have no effect. The smoke has no effect whatever upon the buds, its only action being to confine the warm atmosphere near the ground, as has been described.

T. K. B., Des Moines, Iowa.—How shall I proceed to make a hotbed? I want to know particularly if the manure used must be fresh horse droppings, to get the required heat. Will some that has been frozen be all right?

Answer by W. L. Howard: The best manure for hotbeds is secured from the daily cleanings from the horse barn. If this material has been frozen, but has not been exposed to rains, it will yet heat and warm up the bed. This material is sometimes piled in heaps by the barn for a week or two and if there is no rain it is yet valuable for heating purposes. Excavate a pit 4x6 feet and from 18 to 24 inches deep, seeing that there is good drainage from the bottom, so that water will not stand in it. The best location is on a south slope or on the south side of a building or high board fence. Fill in the manure to the top of the ground, packing it carefully and uniformly in all the corners. Place on this a layer of rich soil containing much decayed vegetable matter and sand so that it will have good drainage, and on this place a dressing 2 or 3 inches deep of specially prepared soil, which must be very porous and which will not bake when frequently watered. Cover with either a glass sash or in late spring with a cover made of new domestic which has been soaked in linseed oil.

O. M. K., Montrose, Colo.—My cherry crop was almost ruined last year by slugs eating the foliage. What is the best method of destroying them?

Answer by Prof. J. M. Stedman: The slugs can be easily killed by spraying the trees thoroughly with any of the arsenical poisons, but as the cherry is somewhat liable to be injured by Paris green, I would advise the use of arsenate of lead.

J. J. C., Jacksonville, Ill.—How far north will the magnolia grow and live through winter if left out of doors? I saw a number of fine trees at Harriman, Tenn., and it gets close to zero there sometimes. Would they live in Central Illinois?

Answer by W. L. Howard: A few forms of magnolia, such as Speciosa, soulangiana and glauca, are hardy as far north as New York. If they show a tendency to winter kill, they can easily be protected through the winter by drawing up their branches, tying them with cords, and then wrapping the whole with a layer four or five inches thick of long grass or old asparagus tops.

F. M. M., Johnsonia, Ark.—Please tell me the best method of raising trees of the catalpa speciosa from seed? (2) Will they do well on hill land? Will the trees do well in this section. Do they need fertilizing?

Answer by Prof. Albert Dickens: The horticultural department of the Kansas Experiment Station has secured good stands of catalpa seedlings by planting the seed in well prepared land after danger of frost is past and the ground is well warmed. The seed should not be covered too deeply; an inch and a half if heavy soil, or a little deeper if light. We sow quite thickly, about twenty seeds to the foot, and if too thick thin a little if they crowd. We find that care taken to prepare the soil, get it free from weeds, and keep in good condition is well repaid. If soil crusts before the plants appear it should be raked lightly to break up the crust. Good, clean cultivation is necessary for good growth. We have grown some trees by planting the seed where the trees were wanted, but it is more expensive to care for the trees than when planted in nursery rows and the increase in growth was not great enough to compensate for the extra labor. Trees transplanted at one year old have succeeded better than older trees. Moist, rich soil is best for catalpas, but very good results are secured on upland. The experiment station has one plantation on very thin upland soil which has done very well, trees making good posts at ten years. On low, rich land trees often make posts in five or six years. Hon. Geo. M. Munger of Eureka has a large plantation on upland of very fair quality which is a very successful one. I see no reason why the catalpa would not succeed with you if your soil is fair. If land is very poor it would doubtless pay to enrich it somewhat. On soil that will grow good fruit trees fertilizing would hardly be needed.

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LATEST FROM COLORADO.

A Million Dollar Corporation of That State Apparently Throws Money Away.

Corporations as a rule are not expected to throw money away recklessly but out in Colorado such seems to be an actual fact.

Recently several well-known capitalists of Colorado joined forces and organized an immense publishing company with a million dollars capital, all paid up. One of the first acts of the new company was to invest $100,000 in the purchase of that wonderfully successful publication, the Rocky Mountain Magazine, now in its third year with a circulation world-wide. By some of its readers the magazine is considered worth $3 per year. It publishes dozens of fine views of scenery, stories of love and adventure and sketches of how great riches are often acquired so quickly. To cap the climax, dividend shares in the company are issued to subscribers, the latter sharing in the profits. Last year the company paid twenty per cent and will likely pay much more this year.

The company has appropriated ample cash with the object in securing a million new readers this year. To accomplish their object they are offering to send the magazine each month for a whole year for the nominal sum of ten cents, 3 years for twenty-five cents; or, clubs of six names for fifty cents, postage stamps taken. As this is a limited offer there's no time to waste, so send at once and tell all your friends. Money promptly refunded if you are not more than pleased. Mention the Western Fruit-Grower when you write. Send all subscriptions to the Rocky Mountain Magazine, Sta. 60, Denver, Colo.

Meeting of the West Virginia Horticultural Society.

The West Virginia State Horticultural Society held its twelfth annual meeting at Charleston on January 26-27.

The meeting was one of unusual interest and was marked by the large number of fruit growers present and by the splendid exhibit of fruit, nuts and nursery stock. The fruit producing territory of the state divides physiographically into five districts—the Northern Panhandle, the Ohio River, the Greenbrier Valley, the Central and the Eastern Panhandle. These districts all have their local organizations and all were strongly represented at the meeting, both on the program and in the exhibit.

A special feature of the program was the report of Mr. S. W. Moore who so satisfactorily conducted the society's fruit exhibit at the St. Louis Exposition. The details in regard to the awards which came to this exhibit had not been published and his announcement that we had been given one grand prize, eight gold medals, twenty silver medals and fifty bronze medals was received with much gratification. The financial circumstances under which this exhibit was undertaken and carried on were somewhat discouraging and all along our pretentions were very modest. The creditable showing of West Virginia in the matter of awards as compared with other states was therefore a pleasant surprise to all.

Mr. Moore in discussing his experiences at the World's Fair thanked the one hundred and sixteen societies and individuals who had made the success of the exhibit possible by contributing so freely of their fruits. He also made many valuable suggestions in regard to packing, saying that we have too often overlooked this important feature of the fruit growing business and that we might well pattern after some of the western states in this respect. He believes that it will pay us to wrap with paper our finer specimens for a special trade, and that boxes for such grades are better than barrels.

Mr. Moore received the hearty thanks of all present for his services, and his wife who was associated with him in the management of the exhibit, was elected an honorary vice president of the society in recognition of her devotion to our interests at the fair.

Other valuable papers were, President's Address, Alex Clohan; Practical Problems in Orchard Management, T. C. Johnson; The Food of Birds, Earle A. Brooks; Peach Growing in West Virginia, H. W. Miller and C. B. Newell; Some Troublesome Insects of 1904, F. E. Brooks, and Storing Apples, W. F. Brown.

The exhibit of fruit in connection with the meeting was the largest in the history of the society and consisted chiefly of apples and cranberries. The growing of cranberries on some of our high glade lands promises to become quite an industry and the Experiment Station at Morgantown is doing all that it can to encourage it. About eleven hundred plates of apples were shown consisting of forty-five varieties.

Martinsburg was selected as the place for the next annual meeting and the following officers were re-elected: President, Alex. Clohan, Martinsburg; vice president, S. W. Moore, Elwell, and secretary-treasurer, Fred E. Brooks, Morgantown.

In the article on Irrigable Public Lands on page 2, it is claimed that on irrigated land production will average four to sixteen times that of the best non-irrigated. In that case, each acre of irrigable land, with a reliable and perpetual water right, will truly be worth more than $100.

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Arkansas State Horticultural Society.

The twenty-fifth annual meeting of the Arkansas Horticultural Society, held at Rogers January 24 to 26, was, without doubt, the best ever held by that organization.

The large hall of the Business Men's Club was well filled at every session, the delegates coming from all parts of the state. Missouri and Kansas had several representatives each, and the interest never flagged throughout the three days' meeting.

The growth of this society falls little short of the wonderful when we learn that not a dollar of the state's funds have ever been appropriated for its use—all running expenses, printing of reports, etc., having been paid from membership fees and contributions.

In the president's address he said that one of the pertinent questions of the present time to Arkansas fruit-growers was the consideration of some bills before the legislature now in session.

One is regarding a bill of lading furnished by the railroad companies. Through bill of lading is now unknown to fruit shippers, this not being the case with cotton and some other products. Most carload shipments of fruit go over more than one line and should accident occur on some distant line the shipper must go there to obtain relief, thus imposing needless expense.

Another bill, requiring railroad companies to furnish cars for shipments within reasonable time after a positive request for same is made. Shippers frequently have orders canceled on account of long delay in getting cars, and fruit spoils. A bill is now pending requiring railroads to pay damage if cars are not given in reasonable time, same as now paid railroad companies if car is held over certain time when loading or unloading. Hay and cotton producers have bills of this character and certainly the perishable nature of fruit would entitle them to the same. Another bill is in regard to some appropriation to help the work of this society. The society has proven that it is entitled to help from the state, and as there were no funds for this work the society has been deprived of this help.

The possibility of getting an appropriation is now better than ever before. Several members of the legislature are frult-growers and the recent success attained at St. Louis created favorable impression among all classes in the state. President Logan suggests that members of the society each write his representative in each house, urging upon them the importance of these measures.

Some lessons learned at the fair were upon the keeping qualities of Arkansas fruit. It has been generally thought by neighboring states that Arkansas fruit would not keep, however fine it might grow, but on a test side by side with some other states careful notes were taken and no fruit kept as long as the apples from Arkansas. Varieties entering this contest were Arkansas Black, Mammoth Black Twig, Shockly and Willow Twig. Jonathans, packed in the season of 1903, were held in storage and shown upon tables in November, 1904, and very few had to be thrown out when the packages were opened. President Logan felt proud of the showing at St. Louis. Arkansas secured one grand prize and 209 additional medals. He feels that the state is entitled to fifty more, for he holds score cards that show fifty awards had been left out of the judge's report. He believed the matter would be adjusted, thus giving the state 259 medals.

"Packing and Grading Fruit," by C. O. Ford, of Siloam Springs, was a paper of superior merit. He said we should bear in mind that the market demands better fruit, better packing and grading of our berries. Buyers notice marks on the crates and if good they want the same mark, while if poor they quickly learn to avoid them. Growers now are doing very good work, but need improvement. We should have more careful inspection at the packing shed.

One of the greatest mistakes in packing apples is to abel inferior stuff as "fancy." No state in the union can produce better apples, peaches and berries than Arkansas, and while we are producing we must get down to better packing and grading. Of course, some do good work now, but a few bad packages put on the market from a place throws a wet blanket on the market. In time the growers will pack for themselves, especially the larger growers, and they will become known by the grade they pack.

Discussion on this paper brought out very favorable commendation of bushel boxes for apples. Fruit usually brings more and three boxes can be bought as cheap as one three-bushel barrel.

Mr. Tippin said growers should have more thorough understanding of what a grade means. A No. 1 grade is always No. 1 fruit, whatever the season, and No. 2 likewise. Because a grower only has a crop of inferior fruit does not change the standard of a grade. Those who persist in putting poor stuff in barrels and storing it ought to lose money, and they generally do.

The question of barrels brought forth the statement that cottonwood, the best barrel material, was getting very scarce, and we could not expect much reduction in prices when this timber was depended upon. Mr. Tippin said oak barrels did not give satisfaction at all. Barrels could not be opened for inspection without tearing them up badly, and dealers didn't want them at all.

"Pruning," by A. W. Poole, of Ozark, was quite a departure from uniform methods. Mr. Poole says peach trees can be made to live and kept in full vigor until twenty-five or thirty years of age if properly pruned. Beginning with the tree, he would set only one-year-old trees, with side root cut close and tap root cut back, leaving it stiff enough to push into loose soil, which is the Stringfellow method of pruning roots. The top is cut back only a few inches above the bud; allows one bud to grow, keeping rest of sprouts off. This one shoot ought to make from three to six feet of growth in the first season and if it does not reach at least three feet, cut back and start over. If a satisfactory growth is made, cut out center not less than two and a half feet from the ground, leaving limbs equally distributed, which are cut back if too long growth. After trees become ten to fourteen feet high keep them there, not allowing them to grow any higher. Keep wood cut out and thinned out to equal previous year's growth. He prefers to prune from the time leaf opens up to when leaves are full grown. After six or eight years, if trees have borne two or three crops in succession, would cut off enough old and new growth to double the amount of previous year's growth, or even three times the previous season's growth.

Mr. Poole does not want the richest land for peaches. Land that will produce twenty to twenty-five bushels of corn is rich enough to grow fine peaches in Arkansas, and by proper pruning can grow fine fruit on land that will not produce ten bushels of corn per acre. If borers are kept out trees will live many years longer. The poor land grows smaller trees, but more fruit. On the richer soils we get larger tree growth and the first few crops of peaches will be fine, but after that they fail to bear good fruit. This shows that these peach orchards are not starved, as some claim, but have three times as much wood in the top as they should have, and these surplus limbs need to be cut out to get good fruit crops. Don't need any extra fertilizer, only proper cultivation and pruning. Apple trees can be handled much the same way. On land that will not wash too much, just average soil, trees can be kept in good bearing condition for forty years, if properly handled. The method of pruning given forces limbs out more horizontally and lets sun in to the fruit in the best possible manner. Also forces out spurs that produce fruit along same part of the limb when tree is twenty years old, where it held the first crop, in place of the extreme ends of the limbs, as so often seen. In the discussion following, others who had tried the same method of planting had almost complete failures in getting good growth the first season, or even in getting any large per cent to live.

Mr. Poole claims he does not lose 1 per cent if his trees are all right when received. He is also a sweet potato grower and sets many thousand plants in a day. He has boys to place the plant where he wants it and with a notched stick he pushes the plant into the loose soil, not even taking the trouble to close up the

Gladiola for the Garden

If you want a garden of rich colors and a variety of exquisite shades you should plant Groff's Hybrid Gladioli. There is no flower of such easy culture, embracing the great range of color with endless combinations and varieties, as these Hybrid Gladioli. The graceful stalks with their burst of gorgeous coloring make the garden a veritable fairy land. Every shade or combination of shade can be produced. I am the United States representative and grower of Groff's Hybrids Awarded the Grand Prize, World's Fair, St. Louis, 1904.

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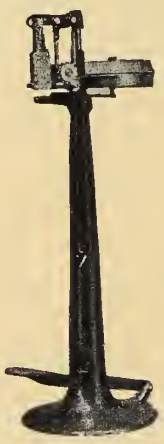

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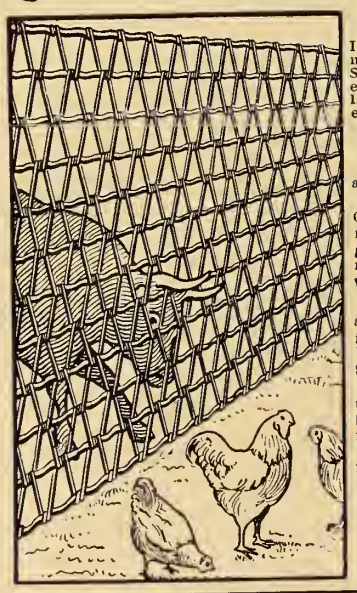

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It is made so good that all requirements of the farm are fully met. So closely woven the small pig cannot "wiggle" through. So strong the Bull cannot "faze" it. So heavily galvanized the elements cannot rust or corrode it. So durable that it is the last to yield to the ravages of Father Time. Sold on such liberal terms that a

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Is given each customer that he may be sure he is satisfied and his money is returned to him if he is not.

Buy Direct. It saves the profit of the middleman. Our Guarantee is all that any manufacturer can give, and infinitely more than the dealer can grant. When you deal with us you **get your money back** if you are not pleased, besides it means a great saving because we sell to you at

WHOLESALE PRICES AND PREPAY THE FREIGHT.

We use nothing but **High Carbon Spring Steel Wire,** and make it ourselves that we may be sure it is good. We coil it that it may provide for **Contraction and Expansion.** We **Heavily Galvanize** it with **Commercially Pure Spelter,** to avoid rust and corrosion in all climates.

Our long experience has made us masters of fence construction and we are able to tell why we make the **strongest** and **best** fence on the market. We have a 40-page Catalog which fully describes and illustrates every style of our **High Carbon Coiled Spring Farm Fence,** which we will gladly mail to you upon request. Write for it. Address,

COILED SPRING FENCE COMPANY
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W. W. WILD WONDER STRAWBERRY BEST PURPOSE SORT ON EARTH WORLD'S FAIR RECORD, ST. LOUIS, 1904 **W. W.**

400 BU. ACRE, RATE 4th YR., 1901 In blue grass—no work or worry
400 BU. ACRE, RATE 1st YR., 1904 In ordinary field culture.
OVER 1500 BU. ACRE, RATE 1st R., 1904 By extensive garden culture.
BIG, SOLID, RED TO CENTERS SEASON 35 DAYS—GREAT SHIPPER
The DEMONSTRATED FACTS Sent You FOR 10c IN LETTER 32 YEARS EXPERIENCE
Don't turn this AD. down. Bank and Testimonial References. Proof of Facts. JOHN SHANK, Mt. Sterling, Ill

Strawberry Plants That Please

If you are going to plant any this spring you had better get my Price List. Rush orders are the kind I can fill. If you want plants and want them at once wire your order. I will fill same. You send money by mail. I have been growing plants for years and know your wants. Not how cheap, but how good plants, is my motto. Send at once for Price List.

JAS. A. BAUER, JUDSONIA, ARK.

SEEDS

$3,500 In Cash Premiums given to Seed buyers this year.

We raise and sell superior varieties of tested **Seed Corn,** shelled or **ON THE EAR,** new **Rust Proof Oats, Early Fife Wheat** that is sure, luxurious **Dwarf Essex Rape, Wonderful Speltz,** beardless and bearded **Barley, Cane and Kaffir Corn** that produces lots of feed, fine **Seed Potatoes, Artichokes,** the great hog food, **Bromis Inermis,** the great grass, all kinds of **Grass Seed,** free from noxious weed seed, all kinds of **Garden Seed** that produce fine lustrous vegetables, **Flower Seeds** that produce beautiful blossoms, lovely **Roses,** fine **Bulbs; Small Fruit Plants, Garden Tools, Poultry Supplies,** wonderful **Egg and Chick Feeds.** All these and many more described in our valuable catalog manual which is

SENT FREE UPON REQUEST.

We furnish the best the earth produces and at lower prices than others. Iowa Seeds lead the world. A. A. Berry lives on a farm in the best part of Iowa; raises much of their own seeds and sells at farm prices which are wholesale to farmers. **All Seeds fully guaranteed.** Be sure and get our catalog before you place your order this year. It fully describes our **$3,500.00 CASH** distribution and how you can easily get some of the gold. **Absolutely Given Away.** We can save you money by planting our Seeds. So say thousands of satisfied customers.

A. A. BERRY SEED COMPANY,
Box 64 CLARINDA, IOWA.

Try the New
Majestic Tomato

The greatest vegetable novelty of the season. By all odds the largest, finest flavored and most productive in existence. Thousands of our customers who received small trial packages last spring wrote us in the fall that it surpassed all other sorts and produced 100 lbs. to 147 lbs. of fruit to the plant. Many reported single tomatoes, weighing 3 lbs. to 5¾ lbs. each. Just think what this kind of a crop would mean on an acre of ground. The fruits are not coarse grained and poor like other large sorts, but are smooth, solid, have few seeds, and are unsurpassed in quality. Of fine shape and beautiful color. Last year the seed sold at 40c per packet of 100 seeds, but this season, we have reduced price to 15cts, and in addition to this we are offering

$100.00 in Cash

prizes this year for the largest tomato grown.

Our large illustrated catalogue describing the above and many other choice novelties will be sent free if you mention this paper.

IOWA SEED CO.,
Des Moines, Iowa.

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SPECIAL OFFER:

Made to Build New Business. A trial will make you our permanent customer.

Prize Collection Radish, 17 varieties; Lettuce, 12 kinds; Tomatoes, 11 the finest; Turnip, 7 splendid; Onion, 8 best varieties; 10 Spring-flowering Bulbs—65 varieties in all.

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to cover postage and packing and receive this valuable collection of Seeds postpaid, together with my new Instructive, Beautiful Seed and Plant Book, tells all about the Best varieties of Seeds, Plants, etc.

H.W. Buckbee ROCKFORD SEED FARMS Dept. L 31 ROCKFORD, ILL.

RED RIVER VALLEY EARLY OHIOS,

grown in the cold Northwest, are unsurpassed in vigor and in early maturity. Olds' pure select seed is the best that can be obtained. Very large stock in store. Prices reasonable. Send postal for Common Sense Catalog of All Leading Varieties Potatoes, Corn, Oats, Barley, Grass Seeds, Garden Seeds, Etc.

L. L. Olds Seed Co., Drawer S, Clinton, Wis.

GOOD SEEDS CHEAP

Best in the World.

I have been growing plump seeds and selling them on the square. My customers stick. Nobody else sells my quality of seeds at my prices. 1 cent a pkt. and up. Onion seed 50c per lb. All other seeds equally low.

A LARGE LOT OF EXTRA PACKAGES PRESENTED FREE WITH EVERY ORDER.

I want to fill a trial order, large or small, for you. You'll come again. Send your own and neighbor's name and address for big FREE catalogue.

R. H. SHUMWAY, Rockford, Ills.

hole made by the stick, and he has the mast perfect success.

It is well to add that the soil of Mr. Poole's farm is quite sandy, which may account for the reason that he has such good success where others fail with the same methods.

Mr. Poole believes that the practice of buying commercial fertilizers for the orchard will show balance on the wrong side of the sheet. The main thing in pruning is to keep tree from growing any taller when top is once formed and this can be done. His trees make picking very easy. One man alone can pick and pack 200 to 250 four-basket crates in a day. He picks 90 per cent of fruit from the ground. Another advantage, the fruit forming on these short spurs, is right along the larger limbs and tree will not break down as badly. There is nothing better than cultivation of young trees in dry seasons; if wet, perhaps more mulching would do. Try and not have ground bare in the fall. Cow peas, even crab grass, is better than nothing, and uplands all need some winter cover.

"Spraying, the Methods and Benefits," was a paper by C. H. Dutcher, of Warrensburg, Mo., who first gave a history of this work, as far as any record shows, from the bucket of water applied with a whisp of straw down to the present day. After telling of the development of the different spray mixtures. Mr. Dutcher told of the dust process, which is comparatively new. He prefers the dust spray, as he says he gets just as good results as from the liquid and can be applied with much greater ease than the liquid. Dust Bordeaux has proved quite difficult to properly prepare, but some later experiments are successful. He believes one should dust oftener than is generally advocated. In preparing the dust Bordeaux the lime and copper sulphate should each be ground separately and mixed dry, using a mill made for the purpose.

Formula No. 1, for dry Bordeaux: Lime, 200 pounds; Sal Bordeaux, 5 pounds; sulphur, 25 pounds. To prepare, break the lime into small pieces and spread out, not over four inches deep; sprinkle with ten or twelve gallons clear water; let cool, then distribute Bordeaux and sulphur evenly over the lime and shovel together until well mixed, then sift through fine sieve, or grind fine; the finer the better. If lime is not thoroughly slaked first add the sulphur and grind, then add the Bordeaux.

Formula No. 2, for chewing insects, add 10 pounds paris green to above mixture. For sucking insects, put 10 to 12 pounds of concentrated lye in the water, as given in formula No. 1, before sprinkling upon the lime, taking care to use stone jars to dissolve it in.

We can use the dust spray upon all kinds of trees and foliage and fruit without injury. A small amount of paris green would do no good on fungi, but might catch stray insects and save much trouble later on. Where fungi has not been kept under control we should begin early in the spring, and, beginning before buds come out, would use liquid sulphur solution; but when leaves get out dust will do the work much more easily. The greatest measure of success can never be obtained until the state has a law compelling fruit-growers to spray. The spores from an unsprayed orchard may drift into the well-kept orchards and do much damage. The successful making of Bordeaux is the only present stumbling block to the use of the dust process, and that will soon be removed. Mr. Dutcher would, however, use the copper sulphate solution in liquid, if fungi was well settled in the orchard, using it vigorously before buds and leaves grow, then follow with dust. Copper sulphate solution may be used before buds grow in proportions of two pounds copper sulphate with fifty gallons of water. This will not hurt twigs or bark, but would ruin leaves and tender buds.

Mr. Compton had most excellent success the past season, even under the very unfavorable conditions that generally prevailed. He kept everything ready and whenever weather permitted sprayed vineyard. By close watching he got in five applications. Saved a crop worth $500 at an expense of $25. Some scattered vines were not sprayed and fruit rotted, as was the case throughout the neighborhood.

W. H. Barnes, secretary of the Kansas society, gave a paper on "Securing a Higher Place in the Councils of State and Nation." He thinks that horticulture should generally receive more notice. He told of the encouragement the Kansas state society receives in the way of appropriations, rooms for the secretary, etc. and said Arkansas should encourage its society in like manner

I. Henthorn, Bentonville, gave his experience and observation on the use of sprays. He has used liquid sprays for ten years; beginning at a time when few either sprayed or even believed in it. He has nothing against the dust method, but has found the liquid effective and will stay with it until some better way is clearly shown. The use of Bordeaux often means the difference of a good crop from none at all. The Ben Davis family is not much subject to the apple scab, and he finds it best not to use Bordeaux on Ben Davis when fruit is small, unless made very weak, as he believes it makes the fruit lopsided and rusted. Among the many benefits of spraying, one not always mentioned, is that unsprayed trees drop leaves earlier and make weak fruit buds and poor fruit. Last season the sprayed Arkansas Black hardly showed any scab, while those trees left without spray hardly had fruit fit for the evaporator. At least eight-tenths was worthless. The sprayed fruit, fancy grades) brought $1.50 per bushel, while barrels sold at $3.50. The unsprayed portion of Arkansas Blacks didn't have one bushel of No. 1 fruit. These results from a single application of the spray, and bad, rainy weather.

Mr. Henthorn believes most of the failures in spraying come from careless making up of the mixture. In making up the stock solution of lime and copper sulphate he usually slacks fifty-five pounds lime and lets it cool over night, then puts in fifty gallon barrel. Put in a little water and stir until thoroughly dissolved; then add water to fill up barrel. Always add the five extra pounds of lime to cover all loss by poor slaking. You now have fifty gallons of milk of lime, which contains one pound of lime to each gallon. Stir this thoroughly before taking out each time the amount you need for a barrel of spray. Two pounds to the gallon can be used.

"I generally have my copper sulphate solution contain about two pounds to the gallon. I take out what I want of this for a barrel and put into spray barrel, then fill about two-thirds full, then put in lime and stir thoroughly. Add paris green, which is prepared for each barrel by putting the amount wanted in an old tin cup and adding a little water; just enough to form a paste. Dip this in the spray, rinsing out the cup. Don't add the paris green in a dry state, as it floats around and sticks to side of barrel badly."

Mr. Rogers, of Gravette, spoke of two kinds of scab in his vicinity, not new in that section, having seen it for eight or ten years, but is getting worse and worse every year, and incurs much loss. The scab is smooth with the surface of the apple, well glazed over; has neither the appearance of ordinary apple scab or bitter rot.

The discussion of strawberry growing was most interesting. Those growers of strawberries who have stuck to Michel's Early have to almost beg buyers to take their fruit. Those sections where they raise Aroma and other large varieties make good money. We must discard small berries and raise the larger ones. The best way of all is to sell on the track, and to do this we must have fruit that will sell easy. The next best is to send a good man with shipments and see that growers get full benefits of the sales. The third and generally successful way is to ship to commission men and trust to their honesty for returns. Apple men want to organize and co-operate. Either run our fruit business like men with good business judgment or quit the business.

Mr. Louis Erb, of Memphis, Tenn., spoke of the recent meeting of the Commission Men's League at New Orleans, where they held an important meeting. The league is interested in securing lower rates and proper transportation, and also will work to prevent glutting any one market and properly distribute fruit.

"People Who Should Not Grow Fruit," was the title of an excellent paper by D. Compton, of Gentry. Every observing person, he said, must have noticed how many people have gone into the business of fruit-

IF you had the time and we had the space

we could entertain you for hours with letters similar to these, testifying to the merits of

HENDERSON'S SUPERIOR SEEDS.

"Please send me 10 bushels of Grass Seed. I am anxious to have it clean and pure, and for this reason I send to Peter Henderson & Co., believing that in this way I am most likely to receive just what I want."
GROVER CLEVELAND (Ex-President).

"Henderson's Sample of Alfalfa, I am glad to say, stood at the head of twelve other samples sent by me to the Government for analysis. Kindly ship to me at Wilcox Wharf, James River, Va., enough to seed sixty acres." E. A. SAUNDERS, Jr., Richmond, Va.

After careful examination of samples from various sources and comparison of purity, germination and price, I have decided on ordering of you the greater proportion of grass seed, etc., needed here.
Prof. WILLIAM P. BROOKS,
Hatch Experiment Station, Amherst, Mass.

Henderson's Clydesdale Oats. Prof. T. J. Hickman of the Ohio Agricultural Experiment Station, states in the *Ohio Farmer* that samples of Henderson's Clydesdale Oats and Clydesdale Oats procured from other sources have shown, in a series of experiments, in favor of Henderson's Clydesdale, which yielded nine bushels per acre more than the average of the other samples.

Henderson's Permanent Hay and Pasture Grass Mixture. "I have been particularly well pleased with my pastures during this exceptionally dry autumn. They were seeded with your Permanent Grass Mixtures six or seven years ago, and have steadily improved during that time. When ordinary pastures were bare during the dry weather these gave constant feed."
JAS. WOOD, Mount Kisco, N. Y.,
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Henderson's Farmers' Manual

a complete Catalogue of Farm Seeds, Grasses, Clovers, Cereals, Root Crops, Pasture, Forage, Ensilage Crops, etc.

It is photo-illustrated from nature and replete with up-to-date farming data. Sent free to all who mention this paper.

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It takes $20,000 worth of postage stamps to mail

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catalogue for 1905. It contains 152 large pages, full from cover to cover of illustrations and descriptions of **the best and newest things** known in horticulture. As the original introducer of Prizetaker Onion, Nott's Excelsior Pea, Davis Wax Bean, etc., etc., I know what I am saying when I make the statement that never before have I offered so many novelties in flower and vegetable seeds of real merit as this season. No up-to-date gardener can afford to be without this book, which will be sent free to all sending me their address on a postal card.

WM. HENRY MAULE,
Philadelphia, Pa.

This Potato Free

This **NEW POTATO** is just what everyone is looking for. Drouth and blight proof, and the earliest on record; nothing can equal it; best quality and smooth, while its yielding qualities are simply marvelous. We are raising stock to offer in 1906, but want to test it this year in every section of the country to make good our claims, and we offer **One Sample Potato** for testing free to anyone enclosing **10c.** to pay for postage and packing. It will be carefully packed from frost, and it is worth many dollars to those fortunate enough to get one.

Our New Seed Catalogue for 1905 is **free** and will be sent with every potato. If you enclose address of two families who buy seeds, we will include **Free Sample Great Corn Novelty** to be offered next year. Send to-day.

FAIRVIEW SEED FARM, Box 38, Rose Hill, N. Y.

Did you ever see 5 straight or circular rows of Pansies side by side, each a different color? If so, you know that the effect is charming. Did you ever see Childs' Giant Pansies, marvels in beauty and true to color? If not, you have not seen the best.

As a Trial Offer we will for 10 cts. mail 5 Pkts. Giant **Pansies, Snow White, Coal Black, Cardinal Red, Pure Yellow, Azure Blue;** also Five Pkts. **New Giant Sweet Peas** for **10 cts.,** White, Pink, Scarlet, Blue, Yellow; also Five Pkts. new early flowering **Carnation Pinks** for **10 cts.,** Scarlet White, Pink, Red and Striped—

or All 15 Pkts. for 25 cts.

Our Catalogue for 1905—Greatest Book of Flower and Vegetable Seeds, Bulbs, Plants and New Fruits. 148 pages, 500 illustrations, many plates—will be **mailed Free.** Scores of Great Novelties.

JOHN LEWIS CHILDS, Floral Park, N.Y.

SALZER'S SEEDS

Beardless Barley
The barley of your dreams; no beards; easy to harvest; always big yielding. Mr. Wells, of Orleans Co., N. Y., threshed 171 bu. per acre. You can beat this in 1905 if you try.

National Oats
The marvel and wonder in oats. Will yield for you on your own farm from 150 to 300 bu. in 1905. Try it.

Billion Dollar Grass and Teosinte
The two greatest forage plants of the century. Billion Dollar Grass will produce 12 tons of magnificent hay and Teosinte 80 tons of green fodder per acre. Catalog tells about it.

Look At These Yields
Speltz, 80 bu. grain per acre, and 4 tons of hay besides.
Macaroni Wheat, Rust Proof, 80 bu.
Victoria Rape, 40 tons of green food per acre.
Pea Oat, 65 tons.
Earliest Sweet Cane, 60 tons green food.
Potatoes, 800 bu. per acre.

Now such prodigal yields pay. You always get them when planting Salzer's Seeds.

Onion Seed 60c
a pound, and other vegetable seeds just as low. We are the largest Vegetable Seed growers in the world, operating 5000 acres.

$10.00 for 10c
We wish you to try our great Farm Seeds, hence offer to send you a lot of Farm Seed Samples, fully worth $10.00 to get a start, together with our great seed catalog, all for but 10c. postage, if you mention this paper.

SALZER'S BEARDLESS BARLEY

John A. Salzer Seed Co. LA CROSSE WIS.

Seed Corn

Most Select and Largest Yielding Sorts

Mammoth Red Cob White Dent
The largest yielding and most satisfactory large white Corn offered.

GOLDEN KING
The best early large yellow.
Full stocks of other superior sorts. Write for list and prices and improve your Crops.

BLUE RIBBON SEEDS
Are always the most economical to use.

AWARDED GOLD MEDAL ST. LOUIS, 1904.

Largest stocks of Vegetable and Flower Seeds, Alfalfa, Rape, Grass and Clover Seeds, Seed Potatoes, Cow Peas, Soy Beans, Millet, Sorghum, etc.

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WOOD, STUBBS & CO., Seedsmen,
LOUISVILLE, KENTUCKY.

CORN WANTED
AWARDED 7 MEDALS WORLDS FAIR 1904
WE WILL PAY
$1.00 PER EAR

GREATEST OFFER EVER MADE
We want you to try our New Corn
Nichol's Gold Bond
the handsomest and largest yielding variety ever introduced. To the party who will send us the 50 largest and best developed ears, grown from the above named variety, WE WILL PAY A
CASH PRIZE OF $50 IN GOLD
SEND FOR FREE SAMPLE PACKET AND GET IN THE RACE. Winners' Photographs will be published. Full description of this wonderful new Corn will be found in our Big 1905 Catalog of "PURE AND SURE" SEEDS, describing and illustrating everything for the Field, Garden and Lawn at wholesale prices—direct to the consumer. It's Free. Write today.
ST. LOUIS SEED CO.
651-653 N. Fourth St., ST. LOUIS, MO.

CORN

Did You get a good stand last year? If not, it is because you did not get your seed from us. We sold thousands of bushels last year and had not one word of complaint. Well matured, well cured, Hand picked, tipped and graded. All the leading varieties. How to get your garden seed free. Ask for catalogue.
NISHNA VALLEY SEED CO.
Box G, HAMBURG, IOWA.

growing without any preparation for the work, and the results are nearly always a failure, and often financial ruin. They read of someone who has received big prices, or yield, and in their enthusiasm they throw up a lucrative business, perhaps, and launch out as fruit-growers, fully expecting to be successful and independent in a short time, to be disappointed and disgusted, and often completely "bu'sted." They have failed to calculate upon the many chances for failure.

Mr. Compton advised everyone to be very careful in embarking in a new business, and said growers themselves should be careful in the statements they make as to the possibilities of horticulture, for there are always disastrous failures which ought to be reported along with the successes.

Prof. John T. Stinson said this southwest country was the coming fruit section of the whole west. At the St. Louis fair the fruit-growers of Arkansas had done much for the state in the way of advertising, keeping up a continuous exhibit during the fair. People were surprised and pleased, and much attention had been drawn to the state. The keeping qualities of Arkansas fruit was perfectly demonstrated by the fine exhibit made, and this alone was of enough value to pay for the entire amount of money used.

"Fertilizing," by Prof. J. H. Norton, chemist at the state experiment station, was deserving of special mention. Of the various elements necessary to sustain plant life at its best, most of them were supplied by nature, and only three need we pay special attention to—potassium, phosphoric acid and nitrogen. Some of these elements are quite plentiful, but unevenly distributed. Potash in the soil is taken up by fruit and gradually exhausted unless we return sufficient to equalize the drain. Phosphorus is abundant in the state and is gradually used up by the plants. The main thing we have to provide is nitrogen. This element is in the air, and there are only a few plants capable of collecting it and depositing it in the soil. The leguminous plants have this power, and the cow pea is the best of them. We must make use of these plants for this purpose, for there is not question but soils of Arkansas are sadly deficient in nitrogen. Any vegetation containing nitrogen should be plowed under deep enough to keep it moist. If plowed shallow it will dry out and burn up. It is said that we can grow nitrogen at a cost of 1 cent per pound. Barnyard manure is very valuable. Like cow peas, it improves the texture of the soil, conserves the moisture and improves mechanical conditions in every way, besides the fertilizing qualities. Lime is not a fertilizer. It will liberate certain elements that already exist, and the too liberal use of it will work a positive injury by working out fertility and leaving the soil exhausted. Its use on some soils is important, but do not advocate its use beyond this. Would not use on barnyard manure on account of losing the ammonia which escapes into the air. Land plaster may be used without this loss.

Secretary Walker said there was no doubt but we can take exhausted soils and in five years bring back to same worth, or better, than virgin soil. This is not a matter of guess-work. We must study the needs and follow a systematic plan. Many buy fertilizers without knowing at all what their soil requires, and gain little if any good results. One should first find out what land needs and buy accordingly. Careful reading will enable anyone to post up in a short time and by observing our growing crops we can determine what we need for successful results. The idea that all we need is to apply fertilizers brings much disappointment when trying to improve worn-out land. We must first improve the physical condition and create humus. We should have enough of the latter to darken the soil more or less. Work to get more humus in the soil; it has many advantages. Make use of cover crop. Winter covering is needed, which can be turned under in the spring, adding humus. Keep land moving by use of some crop. Turnips and buckwheat are large users of potash, if taken from the ground, but if turned under returns it back to the soil and quickly adds much vegetable matter. Most soils are acid and need a little lime to sweeten. Each must solve his own problems.

Prof. A. H. Perdue, geologist, gave a fine lecture on "The Soils of Northern Arkansas," with chart illustrations.

G. T. Tippin, of Nichols, Mo., has great faith in the "Ozarks for Fruit." The recent short crops of tree fruits tend to discourage the growers, but he believes we have not half realized our possibilities. Much larger crops are possible than have ever been grown heretofore. The Ozarks are abundantly supplied with all the elements of success, and with a study of soils, adaptation of varieties and best methods we shall succeed.

One evening was occupied by H. S. Hartzog, L. L. D., president of the Arkansas State university, upon the subject of "A Good Town to Live In." It was a brilliant lecture, filled with practical suggestions and pleasing humor.

The first Monday in October was named for "Apple" day, and the first Monday in August as "Peach" day.

The society heartily indorsed the bill now in congress regarding the extension of the interstate commerce law, whereby freight rates may be regulated.

Officers elected were as follows: President, John P. Logan, Siloam Springs; first vice president, A. W. St. John, Mena; second vice president, M. F. H. Smeltzer, Van Buren; secretary, Prof. Ernest Walker, Fayetteville; treasurer, Joseph W. Vestal, Little Rock. Executive committee: J. L. Rae, Van Buren; W. G. Vincenheller, Fayetteville; R. J. Nelson, De-Queen; J. E. Reynolds, Berryville; G. T. Lincoln, Bentonville.

Judge I. B. Lawton and J. B. Babcock were made honorary life members in recognition of many years of faithful service.

The next meeting of this society will be at Mena, beginning the second Tuesday in January, 1906.

A. Z. MOORE.

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Try our Diamond Joe's Seed and see the Difference between them and Cheap Seeds; all such are dear even as a gift and ruinous to those who plant them. Don't be fooled. Better be cautious than sorry. All Our Seeds are Guaranteed to Grow or your money back. Write for our large illustrated catalog today. It tells you all about it. It's Free for the asking. It gives prices and descriptions of all Farm, Garden and Flower Seeds that are worth planting. Every packet sold under seal. Send today then you can order and receive seeds in good time for planting.

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Iowa-Grown Seed Corn

That will grow where any seed corn will grow, W. W. VANSANT & SONS grow their own corn, breed their own corn, and sell their own corn. Buy of practical farmers who know what seed ought to be and the crop it ought to produce. Our corn is cured by sun and wind, and has the highest possible germinating power. The city seedsman never sees his seed corn until it comes to his door. We know ours from the tiny sprout to the full ear. To insure a big crop of corn in 1905, get your seed corn of— Box 12.

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Large Pkg. Best Mixed SWEET PEAS
FREE 300 Colors
50 KINDS FLOWER SEEDS 10c
Send us your name and address and five 2c. stamps or 10c. in silver to pay postage and packing and we will send you the above collection of seeds free.
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Satisfaction or money returned. Buy direct from the grower and save middlemens profit. Send your address on postal today and names of two who buy seed and get a pkt. Earliest Cabbage, 2 weeks earlier than any other and Illustrated Catalog of Seed and Bee Supplies of all kind.
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SEED CORN.

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Our 1905 Catalogue is the Finest, Most Complete and Up-to-date Seed Book issued in the West.

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No windy" stories; no misrepresentations; no old varieties under new names at high prices. A CLEAN HONEST BOOK. Our descriptions are brief and accurate; our illustrations modest and true; our seed is the VERY BEST quality, thoroughly tested, and our prices are right. Our honest method in three years has given us the trade of the most critical planters, gardeners, farmers, etc., in the West.

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tells all about our splendid offers. *Sent free.* We sell everything other seedsmen sell, also a full line of Gardeners', Planters', Orchardists', Beekeepers', Poultrymen's and Stockmen's supplies. Agents for Gould's Spray Pumps, Prairie State and Hawkeye Incubators. Write for a free copy of Planter's Guide.

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10,000 Plants for 16c

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For 16 Cents Postpaid

1000 Fine Solid Cabbage,
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1000 Splendid Onions,
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Above seven packages contain sufficient seed to grow 10,000 plants, furnishing bushels of brilliant flowers and lots and lots of choice vegetables, together with our great catalog telling all about Flowers, Roses, Small Fruits, etc., all for 16c in stamps **and this notice.** Big 140-page catalog alone, 4c.

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Boone County White, Farmers' Interest, Reid's Yellow Dent, Improved Leaming and Riley's Favorite. Best pedigreed and tested seed, grown on my own farm. $1.50 per bushel, sacks free. Delivered on cars for any station in the U. S.

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Ear Seed Corn

Moore's Eureka and Reid's Yellow Dent. We make a specialty of growing the largest yielding varieties, rich in feeding value. Selected as husked and perfectly dried and stored. Practically perfect in germination. Has been winning in show room for ten years. Three firsts at Ames, 1905. $2.00 per bushel, in ear, $1.50 shelled. Samples Free.

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Berry boxes and all kinds of fruit packages. Bee-Keepers' and Poultry Supplies. Ask for our 1905 Catalog.

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Extra Early White Spine

Cucumber Seed

I make a specialty of this one variety only. My seeds are grown under irrigation and test higher, germinate stronger than seed grown under rainfall. My seeds are absolutely pure. Delivered anywhere in U. S. or Canada, 50c per pound.

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Wanted—A Good Single Man

For general farm work; must be an all-round man; permanent place for the right man. Address C. B. GREEN, 1106 E. 5th St., Sedalia, Mo.

Gardening Department

The Growing of Onions for Market.

I am having a flood of inquiries about onions, and if the idea of growing onions for market next year is as general as it seems, the country will sure get plenty of onions. I want to warn you that there have been years when onions went cheap and you may not get as high prices as you see offered this year. Still I never grew a crop of onions yet that did not pay me well. I sold mine one year at 25c per bushel, but I got 700 bushels per acre, so I came out all right after all. Be sure you have good seed of the right variety and a good strain of that variety, and your onions will sell all right.

Don't think, though, that it is all fun and profit. There is a lot of hard work about it and some backache. An acre of onions looks like a small amount, but it will mean lots of work. You will have to have a drill and wheelhoe, too. The combined tools of the Planet Jr. and Iron Age class are all right. A good combined tool costs about $10.00 and can be used for all kinds of garden stuff, both planting and tending. They are worth all they cost, just for home garden use, and for growing onions, etc., on a large scale they are a necessity.

Sow Radishes Early.

Remember that the first nice day that comes in the spring, along the last of February or the first of March, is the time to sow a few radishes. I have often sowed them when the frost was in the ground yet, and only a couple of inches of thawed out dirt on top. You may lose your seed, but if it wins out you will have some early radishes. You can do the same way with lettuce, onions, spinach, and early smooth peas. They are all hardy things and the earlier they are sown the better. They will get the start of the weeds that way.

Make Hot Beds Now.

Now is the time to make that hot bed you have been planning. It can be as big or as small as you please. One made with a single sash of glass will give very good results. Dig a hole about two feet deep, fill it with fresh horse manure well tramped in mixed with considerable straw, and wet it down good. As soon as it starts to steam, put on the dirt, say 5 inches of it, or a little more, and set on a frame the size of your sash. The hole should be bigger all around than the sash so that when the manure gets to settling the frame will come down evenly all around and not catch on the side of the pit. As soon as the dirt gets well warmed up, work it up nice and smooth and plant the seed for your plants. Be careful to not get the seed too thick or the plants will be spindling. Whenever you have a nice warm day, open up the beds and let the air to the plants to harden them.

Best Kinds of Tomatoes.

About now every one will be thinking about the best kinds of tomatoes to plant, for they are generally planted early in the hotbeds. For main crop I prefer to take some of the big sorts as Stone or Beauty, and plant later, either in the open ground or in a later hotbed or cold frame. But for first early use we must have a very early variety and get the seed planted soon now. The Dwarf Champion has been a standby with us for a long time. It is early, smooth, handsome, and a good yielder. It also has the advantage that it can be planted very close on account of its stiff upright bush. We generally plant them three feet apart each way or even less. Other good early sorts are Earliana, Early Minnesota, and Early Jewel. The latter is a new variety the last year or two, but it is a good one. Fruit is very red, good size, and of very handsome appearance. I have great hopes of it as the best general purpose early tomato. The Earliana is early enough, but it is of poor color and often rough. Atlantic Prize, an old time favorite, is entirely too rough.

Varieties of Early Cabbage.

I have tried most all of the brag early cabbage and have failed to find anything better than a good strain of Early Jersey Wakefield. It is early, hardy, good size, and sure to head. There are a few varieties that are a little earlier, but all that I have ever found are either too small or too soft. If you prefer a flat head to a pointed one, the Early Spring, Eureka and Maule's Earliest are good ones. They are about as early as Wakefield and a flat head like a late cabbage, but they run pretty small. To follow the Wakefield, I like the Allhead best of any. It grows almost as big as a late cabbage and comes only a few days behind the earliest. I have had them to weigh up to 12 pounds and even more and of perfect form. A second planting of it will keep you going till the late cabbage comes in.

Plant Peppers Soon.

The peppers and eggplants should also be planted soon in the hotbeds. Handle them the same as tomatoes exactly. Both are slow to sprout and need plenty of heat.

Try Some Novelties.

Send for the seed catalogues and study them over. You can learn a great deal from them, and will find lots of things that you want. Of course you cannot send for them all, but send for some of the novelties and try them. They may not turn out to be as great a thing as you expected, but they are pretty sure to be worth trying at least, and you may find exactly what you have been looking for.

If the seed man is telling you the truth about it, you can tell by the description whether it is what you want or not. And if he is not telling you the truth, or has that appearance, the less you have to do with him the better. If you can see for yourself that he is lying at least half, how are you to know whether to believe any of the other half or not?

HENRY FIELD.

Shenandoah, Iowa.

Cancer Below the Eye—Cured With Soothing, Balmy Oils.

Claypool, Ind., June 30, 1904.

Dr. D. M. Bye Co., Indianapolis, Ind.

Gentlemen—I will endeavor to write what the treatment of the Combination Oil Cure has done for my cancer. It was December when I first corresponded with you, and how hard it was to convince me, even after the literature had been sent, that cancer could be cured. I had been taught from my youth up that cancers could not be cured by man. I was induced to send for a month's treatment. At the time I begun treatment the cancer, which was located beneath my left eye, protruded to such an extent that I could not wear my glasses, and the sight of my left eye was impaired. It had been growing for about six years, beginning when I was 72 years old; am now 78. My father before me had a cancer that caused his death. After using your treatment as you instructed, my cancer was entirely eradicated and today there is hardly a scar left and the sight of the eye is nearly as strong as the other one, praise the Lord. My neighbors say that this cure is marvelous. I hope that your name will never die and that your souls will forever find rest in Him. Your unworthy servant, healed and saved to the uttermost. JOSIAH REED.

All forms of cancer and tumor cured by soothing, balmy oils. Doctors, lawyers and ministers endorse it. Write for free book to the Home Office, Dr. D. M. Bye Co., Drawer 505, Dept. 65, Indianapolis, Ind.

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Not a Toy

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Den Clock $1 Solid brass works, run by a weight; no spring; no key winding. Richly designed front, executed in good, honest, hardwood. Utility and Art combined. A dependable time-keeper and a beautiful wall ornament in one. Double value, yet all for $1.00. Delivered anywhere in U. S..

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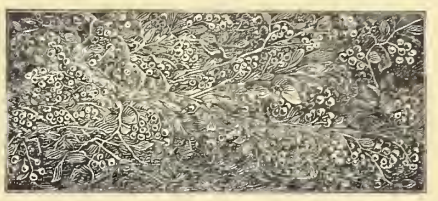

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A new fruit from Washington State. Most desirable introduction of many years. Will outyield any other Berry ever grown. Grows from seed and ripens its crop same year. Berries jet black, four times the size of Huckleberries. For pies, jams, jellies, sauces, and canning, it is equal to any fruit grown. Full particulars in catalog, page 10. Packet of 100 seeds, 10 cts.

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Strawberry Fruit Book *and PRICE LIST FREE Write while they last*

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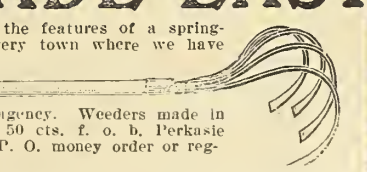
These Weeders combine at a trifling cost all the features of a spring-tooth harrow or cultivator. One agent wanted in every town where we have no agent; big money for the one who secures the agency. Weeders made in two styles (see cuts); long handle Weeder sold at 50 cts. f. o. b. Perkasie Sta., Pa., sent only by express. Cash with order. P. O. money order or register letter.



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Short-handle Weeder is sent by mail, postpaid, for 35 cts. U. S. stamps; or we will ship sample lot of 3 Long-handle and one Short-handle Weeders for $2.50 delivered your Sta. Cash with order.

Send P. O. order. Write for discount to agents, or ask your dealer and insist on him to get them for you. Always give your name in full and full address very plain. This ad. will only appear again in April number. Write today. Mention this paper and address,

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$50,000,000 WORLD'S FAIR, ST. LOUIS 1904

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100,000,000 FEET OF HIGH GRADE LUMBER FOR SALE

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SAVE FROM 30 TO 40 PER CENT Also Sash, Doors, Roofing of all kinds, Pipe of all kinds, Wire Fencing, Hardware, Machinery, Household Goods and Furniture of every description, besides thousands of other items. **ASK FOR OUR CATALOGUE NO. 399** We purchased every Exposition of modern days.

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Our Stock of plants and vines will grow and bear fruit, because they are strong and healthy with plenty of fiberous roots.

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Silver Medal on Raspberry Exhibit

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Cumberland, Munger, Kansas, Gregg, Cardinal, Miller Red and Thwack.

CURRANTS. Red Cross, North Star, Red Dutch, Cherry and Fay's

KENOYER BLACKBERRY.

This Blackberry is going to be to blackberries what the Cumberland is in Raspberries. Don't fail to try it. Also Snyder and Early Harvest.

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40 varieties from which we cut 10,000 blooms for market last fall.

General line of trees, shrubs, etc.

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THE TREE WORMER for the Peach Root Borer.

THE GEORGIA REMEDIES for the Root-Borer and San Jose Scale.

PEACH TREES—All standard varieties for commercial purposes.

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STRAWBERRIES

My list includes some of the following: Arkansas Black, Rickman, Beaver, Crimson Cluster, Benjamin, Mark Hanna, Superior, Lady Garison, Maria, Commonwealth, Ernie, Olive's Pride, Climax, Auto and Duncan. Also the best standard varieties.

SPECIAL ORDER FOR 1905. You can have plants of some of the best new varieties free with your order. Send postal for Catalogue.

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25 varieties; new beds. At actual cost of production. Must sell or move them by May 15th or lose them; ask our prices now, please. We also have a complete line of general nursery stock to wholesale direct to planters. Catalogue Free.

The Centerville Nursery, Centerville, Ia.
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Rates $1.00 Per Day, by the Week $4.00
Newly Furnished Good Rooms

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Table supplied with the best in the market. Livery in connection. We meet all the trains.

AUSTIN'S DEWBERRY

J. W. Austin, Pilot Point, Tex.

Original propagator and introducer. Headquarters for plants. Descriptive circular and treatise on dewberry culture, for your address on a postal card, if you please.

Maj. Holsinger's Department

A Word to Our Arkansas Friends.

The recent meeting at Rodgers, Ark., was a memorable one. It was our second visit to the Arkansas horticulturists. We had many friends whom we had learned to know and honor at the meeting one year ago. We were kindly treated then as we have been at the last. The Arkansas meetings were indeed a surprise to us. Being a member of nearly all the horticultural societies of the Middle West, we were agreeably surprised and richly repaid for the trouble and expense in attending it. The last meeting was the best attended state meeting we ever attended. The hall was always well filled with people interested in fruit-growing. In intelligence they were the equal of any. The program was not only good, but was carried out without a hitch. The fruit shown was in keeping with the reputation of the northwest portion of the state. It was of good quality and of handsome appearance, although an off year.

Our accommodations were excellent, and the consideration with which we were treated by all will endear them to us for all time. The weather was such that we did not see the orchards other than as we saw them from the car windows, which is never satisfactory. Time was when Arkansas was a joke. She has passed that epoch. Arkansas has a bright future in horticulture. Her citizens are among the best, coming, as many of them do, from other states, having been drilled in the school where it is the survival of the fittest. How well they have succeeded the St. Louis Exposition will attest, having taken medals almost innumerable.

When we consider that the horticulturists have never had a dollar to assist them in the development of the society from the state, but that this burden is entirely by subscription on the part of its members, we can but honor them the more for their zeal, patience and perseverence. We sincerely hope their effort to secure from the state the amount necessary to carry forward this work and make her as she should be, the first fruit state (always excepting Kansas) will succeed.

We examined the peaches while there and are glad to report them O. K. We were glad to meet not only the Arkansas members, but a number of visitors from other states.

These interchanges of visits by our brethren of other states is always gratifying. May they continue and grow.

Hearing that Mr. Beckley, president of the Johnson County Horticultural Society was successfully growing pears, and claiming that he has solved the blight problem, I requested him to give his methods for use in The Fruit-Grower. Now, we have known of salt being used by some, claiming it a preventive of blight in the pear, but always used around the tree upon the soil. These people seemed to be successful for a time, but the result has been the same.

In conversation with Mr. Beckley, he asked a very pertinent question: "What do you think of a doctor if called to treat a wound on the surface of the body if he should give you an inward application, an emetic or cathartic, as the case may be "

Then I asked: "You consider it a disease of the extremities, or of the top?"

His answer was that "he so considered it." I shall surely try his method, and hope others may do so. He gives his plan as follows:

"Up to the year 1897 I had spent considerable money and patience on pear trees. I had set them in sod, in rich and in poor soil, but about the time they began to bear fruit they would blight, and often much younger. Some I cultivated and some I did not; they blighted just the same. I was told to cut away the blighted part and burn it, and that would stop it, but that failed. By this time I had got down to one little sickly pear tree stub of the Duchess variety and my patience was badly shattered. I was very much discouraged with the pear business. Having some very strong salt-meat brine that I wanted to get rid of I concluded I would use some of it in killing this pear tree, and go out of the business, as I had always been told never to apply salt to a fruit tree, as it would surely kill it. But in place of killing it it only grew more vigorous and stronger, and this last season bore a crop of pears. Since that time I have been setting out pear trees and spraying them with salt brine strong enough to bear an egg half way out of the water. I have thirty pear trees now, and most of them bearing. Have not had any blight since I began to spray with salt brine eight years ago, except six which I did not spray as a test. The result is they are all dead or dying from blight. This spraying with the salt brine must be done the first of March, or just before the sap starts up. If done after the tree puts out its buds or leaves it will surely die. And as a preventive the spraying must be done annually. Salt applied to the roots of the tree won't do, as the blight does not originate in or on the roots, but usually has its origin on the buds or body of the tree, therefore it is an outward disease and cannot be reached by an application to the roots. A pear tree never blight on the roots, always on the top first, and very often when the tree dies down to the roots, sprouts will start and grow up and make a tree to blight again."

Intensive Horticulture.

At the January meeting of the Missouri Valley Horticultural Society two papers were read on the above subject, which will be found interesting to Fruit-Grower readers. It should be stated that the Missouri Valley society is made up of fruit-growers living near Kansas City, Mo., where land is high in price. The soil is very fertile, however, and the nearness to market is such an important matter that growers are justified in practicing the most intensive methods. It will be found that the higher the price of land the more intensive culture is necessary. The papers were read by Mr. G. F. Espenlaub and Allen V. Wilson, respectively. Mr. Espenlaub's paper follows

To get the most out of ground it should be at least fairly good land, or else liberal manuring will have to be resorted to. Then, if the location is close to market, I would plant peaches on highest ground, apples on rather the best, cherries on fairly rich but dry, pears on thinnest, and plums on the wettest or even spantz land. In the rows and between rows, not nearer than seven or eight feet from the trees, I would plant raspberries, blackberries, currants and gooseberries. These bush fruits are rather an advantage to the trees for three reasons. They all require the same cultivation, both as to time and manner of it; they shade the ground and also protect the trees from the injuries of the plow and singletrees, especially in the hands of the hired man. Then, on the other hand, the shade of the trees is often very beneficial to the small fruits, especially to currants, raspberries and blackberries. Anthracnose is very seldom found in dangerous quantities where bush fruits are among trees. Strawberries can also be grown among trees, but are not benefited by shade.

"Grapes can be cultivated on highest ground and on sheltered hillsides, and if planted eight feet between rows strawberries and many kinds of vegetables can be grown between the rows for a number of years, even after the grapes come into full bearing. Of the vegetables I would mention cabbage, potatoes, onions, beets, radishes, and even sugar corn. Every kind of fruit succeeds best on some certain slope or elevation. For instance, peaches do best on highest ground, apples best on north, east or south slopes, even if the ground is steep. Cherries must have it dry and warm. Then southeast or south slopes will hasten the ripening considerably, so the earlier ripening fruits should be planted on these locations. Asparagus can also be planted to good advantage and profit in connection with fruit; also pieplant is profitable; these latter vegetables come in very handy to replenish the pocket, as they are the first of the season.

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FRUIT TREES

means 'oft' cultivation; once in ten days or two weeks is none to much, and less than this is not enough. Then, after the last picking of berries, one or two cultivations should be given to loosen the ground from the tramping down it gets during the picking season."

Mr. Wilson's paper on the same subject follows:

"Amid our rough but fertile hills, dotted here and there with rock and oak, many of us are compelled to use intensive methods in order to make ends meet and provide for the future. In other words, as our friend Hale of Connecticut says, 'It's a mean Yankee trick to crowd things so, but we must have the dollar.' The conditions that confront us in this locality demand intensive efforts. Our land, while it is ideal for fruit growing, is high in price and of such a nature that the tools and methods that can be used on comparatively level land are of but little, if any value to us, and we must adapt ourselves to these conditions. Whether, therefore, our place be many acres or few, we must get all that the soil will produce in the quickest time possible. The planting of trees and berries and allowing them to care for themselves, taking what perchance they yield, is not horticulture. Horticulture as a science requires that perfect knowledge of plant life to insure its mastery, or to understand the subtle and mysterious forces of nature. Horticulture as a business requires as much forethought and attention as any mercantile pursuit. To make a success of horticulture, man must first of all be in love with his occupation. Like the lawyer, he must study the case from every standpoint. He must familiarize himself with plant life and all of its requirements; he must learn the berry or fruit best adapted to his soil, location and market; he must study insect life, destructive or beneficial, how to destroy or preserve; he must consider the cultivation and preservation of his soil, knowing what, when and how to give back what he takes from it, and at the same time get from the land all that the trees or vines can produce. In other words, he must be a man of intensive energy to be a successful horticulturist. This brings us to the practical part of the question.

"The practical problem is how to practice intensive horticulture, and this is the point where trouble begins, for I have observed that fruit-growers have many minds as to what and how things should be done. To illustrate our subject somewhat, we will assume that we have bought an unimproved piece of land and are going into the fruit business for profit. Fruit trees naturally appeal to us first of all, and we proceed accordingly, but it requires years for results. Taxes and expenses go on just the same. We must have an income and that quickly. In our apple orchard we plant our trees 30x30 feet, planting a peach tree between every apple tree in the rows running north and south. This leaves a space of 30 feet between rows for various small fruits. Allowing room to cultivate the trees, we can plant here for a few years, our strawberries, or we can come closer to the trees and plant raspberries or blackberries and all vegetables that require or can be cultivated by horsepower. Between the apple and peach trees gooseberries can be planted. In our cherry and pear orchard the trees are set closer and come into bearing earlier and require less cultivation, hence what we plant must be farther from the trees, so that the crop in between will not interfere with the proper development of the trees. A row or two of raspberries or blackberries will do nicely for awhile. Tomatoes do well for the first year or two; after that there is too much shade. Owing to the time and manner of cultivation needed for cherries and pear, and the shade these trees make, I would not advise the planting of strawberries between these trees. We plant our Wild Goose plums in all the out of the way places, low spots and wet corners; with them we plant currants, as the currant delights in cool, shady locations. In the vineyards, until in good bearing we plant one row of tomatoes, potatoes, etc. In no case have we a place, nor can we afford, to grow any kind of a grain crop, as all such crops rob our trees, and proper cultivation, as a rule, cannot be given when most needed.

"No farm is complete without the chicken yard and even this we utilize by planting Damson and Japan plums and quinces.

"The next thought that naturally demands our attention, after such condensed planting, is what to cultivate with. Personally, I find the five and twelve-tooth cultivator, diamond plow and the good old-fashioned hoe tools that will meet all requirements. Cutaway harrows and all such large tools are out of the question on our hills and where such intensive methods are resorted to. So much for this part of the subject. Our land all planted and cultivated, next the crop and how to sell it. We may plant the very best of everything and bring it to perfection and then fail in the marketing. To my mind, there is no part of horticulture today that demands more intense thought and good judgment than that of proper harvesting, packing and marketing. As people naturally flock to large cities, so the fruit-growers look to the large markets as the outlet for their products, whereas there are thousands of small towns that hardly ever see a berry or an apple, and would gladly pay any reasonable price for good sound fruit. The commission man knows this fact and so puts big ads in the papers puffing up his market. We take the bait, send him our fruit, and pocket what he sends us in return. He in turn ships it right back by our door and sells it to our neighbor. This is food for thought.

"But I must stop. The more I think of this subject of intensive horticulture, the deeper and broader it becomes, until there seems to be no end. It was man's first occupation, most honored of God and one that appeals to man's most noble nature."

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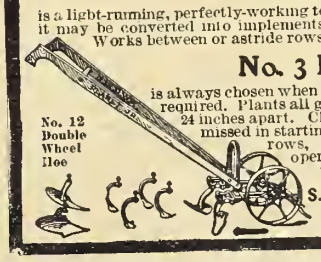

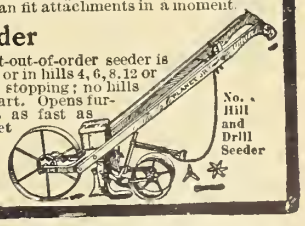

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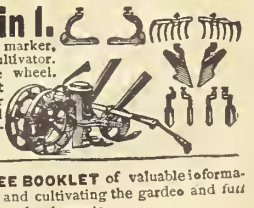

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With the Fruit Shipping Associations

This is a new department of The Fruit-Grower, intended to help the various fruit-shipping associations of the country. Every association is invited to send the address of its secretary or manager, if such association is not included in the accompanying list. Of course, some of the associations listed are not strictly shipping associations, and yet they are made up of persons who are interested in the marketing of fruits. Suggestions will be welcomed from any person connected with any association whereby this feature of The Fruit-Grower can be improved. Tell us the news. Report prospects for fruit, and when the various fruits or vegetables will be ready to ship; if your associations has any plan which will help other associations, report it for the good of others. In all these reports be brief. Let us make this page full of crisp news for fruit-growers from the commercial standpoint. This is to help to a better system in marketing fruits and the subject is one of the mast important which can be considered. By co-operation a better system can be brought about and The Fruit-Grower wants to help in the work.

Nebraska Growers Want Better Freight Rates.

The Southeastern Nebraska Fruit-Growers' Association met at Auburn, Neb., last month and among the important matters discussed was that of obtaining better freight rates for fruit products. At this meeting it was shown that in 1897 over 500 cars of apples were shipped from Nemaha county alone, but at that time freight rates were lower than at present, and this part of Nebraska was not discriminated against. Yet the past season rates were so against the growers that thousands of bushels of peaches rotted on the ground, while only about 100 miles away good markets were at hand.

The growers present at the meeting were up in arms over the situation, and appointed a strong committee to appear before the Nebraska legislature in their behalf. At the same time the following resolution was adopted:

"Whereas, It has come to the knowledge of the Southeastern Nebraska Fruit-Growers' Association that the interstate freight rate on fruit discrimination against the fruit-growers of Nebraska; therefore, be it

"Resolved, That this association requests our legislators to ask congress, by joint resolution, to support an amendment to the interstate commerce law which provides that when the interstate commission shall find that the rates charged by any common carrier are unreasonable they shall have power to cancel such rates and establish reasonable rates, which shall not be stayed, suspended, modified or annulled otherwise than by the commission in the establishment of a new rate or rates or by a final decree of the United States court of competent jurisdiction for manifest violation of law."

At the meeting a committee was appointed to buy crate and box material for the entire membership, and the following officers were elected for the ensuing year: President, W. G. Swan of Johnson county; secretary, G. H. Christy of Nemaha county; treasurer, O. P. Dovel of Nemaha county. One vice president was elected from each of the five counties of the district, as follows: Richardson county, R. E. Grimstead; Nemaha county, O. P. Dovel; Otoe county, Hon. Joseph Cassell; Johnson county, E. G. Jury; Pawnee county, C. H. Barnard.

How About Your Freight Rates?

Complaints continue to come in that certain points are discriminated against in the matter of freight rates. Here is what a railroad man told the farmers of Iowa along this line:

He said that railway officials will be glad to hear complaints of this kind, but the trouble is that these complaints are not filed in time. They are not made until fruit is ready to ship, and then before the complaints can be investigated and the rates adjusted the fruit has perished. Take the matter up now. Iowa fruit-growers have appointed a committee to compile statistics showing freight rates from Iowa points and also from other fruit-growing sections. The discrimination can then be shown and the attention of railroads directed to it before shipping season is on. This plan should be adopted by others. Don't wait until your fruit is ready to ship before investigating the question of rates. It will be too late then to get any relief.

The Private Car Monopoly.

A reader asks what is the "private car monopoly" which is so often mentioned. This is the policy of certain railway lines of contracting with the Armour Company for use of the refrigerator cars of the latter company on the respective systems. The railway companies, in other words, turn over their refrigerator business to the Armour Company. And the latter charges what it pleases. Instances are numerous where this monopoly has led to abuse. For instance, the Illinois Central company, when it operated its own refrigerator cars, charged $30 for icing cars from Louisiana points to Chicago. Now that the Armour company operates the cars on this system it charges $45 for icing cars which travel only one-third the distance. One-third the distance, and 50 per cent increase in charge! Do you wonder that fruit shippers and commission men are fighting the private car monopoly?

Interstate Commerce Commission's Power.

Democrats and Republicans alike are indorsing President Roosevelt's recommendation that the interstate commerce commission be given power to fix freight rates when they are proven to be extortionate. It will be

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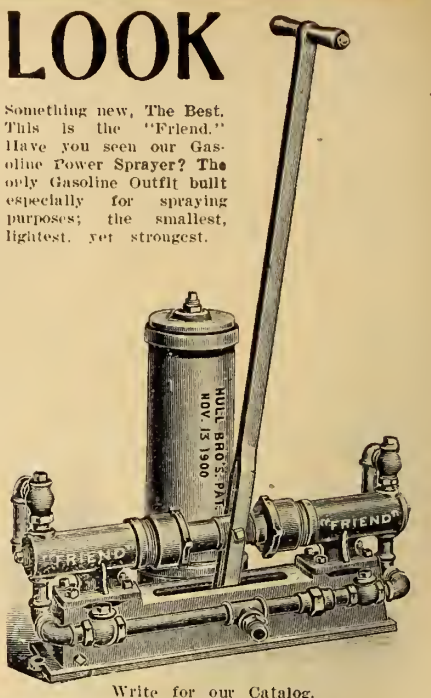

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Port Arthur in the Hands of the Japanese

It is worth your while to have our trees in your hands. Our plan of campaign is to further our interests by fair and honest dealings with our customers. We are now booking orders, and to anyone uncertain as to our responsibility we will furnish bankable reference. Write for prices today.
Western Nurseries, Greenwood, Mo.

When writing to advertisers always mention The Fruit-Grower.

THE WAY TO SPRAY

The highest fruit tree from the ground, without ladders or extension rods, is with

THE STANDARD SPRAY PUMP

It throws spray with great force, and ten feet higher than any other pump, and is operated much easier.

It is made entirely of brass, the valves being brass balls in brass seats. No solution can affect it. Has no equal as a bucket sprayer; as a BARREL OUTFIT one man does the work of two, and in less time. Cannot cause trouble.

GUARANTEED by us for five years; will last a lifetime. Is always ready for use.

If you have read this far, you are interested, and we can prove all our claims for the Standard Pump, if you will give us the opportunity. Most dealers handle them, or write us. Made by

THE STANDARD STAMPING CO., :: :: :: :: MARYSVILLE, OHIO

To the Planter

We have 50,000 apple in surplus. We have 10,000 3 to 4-ft peach surplus. We have 500,000 strawberry plants at wholesale price. Complete line of nursery stock; also 15,000 bulbs, and roses. Write for Catalogue and prices.

MUSKOGEE NURSERY CO.

H. P. Showalter, Sec'y. **Muskogee, I.T** J. L. Knisley, President.

$21.00 PRICE EXPLAINED

FOR $21.00 TO $23.00 TOP BUGGIES, similar to one illustrated, HAVE BEEN WIDELY ADVERTISED, also ROAD WAGONS at $14.00 to $17.00, SURREYS at $34.00 to $38.00.

HOW BUGGIES can be offered at these prices and why we can sell buggies and all other vehicles at much lower prices than any other house is all fully explained in our FOUR BIG FREE VEHICLE CATALOGUES. Cut this ad. out and send to us and you will receive by return mail, Free, Postpaid, FOUR BIG VEHICLE CATALOGUES showing the most complete line of everything in Buggies, Road Wagons, Carts, Surreys, Phaetons, Carriages, Light and Heavy Wagons, Vehicles of all kinds, also everything in Harness, Saddles and Saddlery, all shown in large handsome half-tone illustrations, full descriptions and all priced at prices much lower than any other house can possibly make.

WITH THE FOUR FREE CATALOGUES you will receive the most astonishing Buggy Offer ever heard of, a new and astonishing proposition. How others can offer top buggies at $21.00 to $23.00 and why we can sell at much lower prices than all others will be fully explained. We will explain why we ship so as to make freight charges amount to next to nothing. We will explain why we are the only makers or dealers in the world that can ship buggies the day we receive your order. Our Free Trial Offer, Our Pay After Received Terms, Our Binding Guarantee are all explained when we send you the FOUR FREE CATALOGUES.

HAVE YOU ANY USE FOR A BUGGY? If you have, don't fail to cut this ad. out today and mail to us. If you can't use a Top Buggy at any price, call your neighbor's attention to this announcement. Don't buy any kind of a buggy until after you cut this ad. out and send to us and get the Four Big Free Catalogues, the most liberal offer, the very latest proposition, everything explained, all free for the asking. Write today. **SEARS, ROEBUCK & CO.,** CHICAGO, ILLINOIS.

A Short "Heart to Heart Talk" With 100 Readers of The Fruit-Grower

Doubtless, as many as 100 young men and women who read this notice contemplate attending Business College within the next year, for a course of Bookkeeping or Shorthand and Typewriting. It is to these young people I wish to talk.

Many people, because they have not investigated, suppose all business colleges are alike, and attend the cheapest one, or because it is nearest their home. Now, I wish to tell you that there is as much difference in Business Colleges as there is in kinds of fruit, or in farms, horses or men. If, then, this be true, there must be good, bad and indifferent schools.

It is a laudable ambition for a boy or girl to desire a successful business education, for such can be used in all avenues of life, and may be turned to profitable account at once if he should desire a position with which to earn a livelihood.

I know of nothing that will bring so speedy and profitable returns for the money and time invested, as a business or shorthand education taken in a high-class Business College with a national reputation.

I have not space here to go into detail about it, but if every one interested in bettering his or her condition in life will write to me, I will mail, free of cost, our beautiful 64-page illustrated catalog, which will fully explain just what you need to know about choosing a school that will enable you to meet with immediate success in business life.

This Catalog is profusely illustrated with portraits of students in positions, with their letters of testimony, interior views of school rooms in session, groups of students in different departments and from many states; specimens of penmanship, medals, diplomas and cut of the new College building; together with rates of tuition, cost of books, board, etc., and full and specific information about all departments of the Gem City Business College, which has now been in successful operation for more than a third of a century under the same principalship.

WRITE TODAY, though you may not intend going to school until next fall. Now is not too early to get posted. Ask for our Illustrated Catalog and state anything you wish about the course you desire to take and your plans and I will send catalog and write you fully. Address as follows:

D. L. MUSSELMAN, President Gem City Business College,
Lock Box 58. Quincy, Ill.

Truth Is Eternal

Our claims for Warnock's Tree Paint are founded on scientific facts. Those who have used it agree with us in every particular.

One application will protect all kinds of fruit trees from rabbits, mice, borers, and San Jose scale in all countries and climates for a longer time than three years. We warrant for three years, or the price refunded. It will protect from sheep and goats the year the trees are painted. Also painted trees grow longer in the season and drop their leaves later in the fall than unpainted trees. It promotes a vigorous, healthy growth.

We take pine tar, and by a process all our own, remove the astringent properties, then add the essential protective ingredients. Other tree paints are mixed in water and will soon wash off. Warnock's Tree Paint never washes off: the bark absorbs it.

For circulars, prices, etc., write

R. WARNOCK & CO., INDEPENDENCE, MO.
AGENTS WANTED.
Letters Patent No. 779,752, issued Jan. 10, 1905

To the Fruit-Grower Family

I have small fruit plants, especially strawberries, which I can furnish in moderate quantities at moderate prices. My plants are pure, and unmixed, and **true to name.**. I assure you prompt service and perfect satisfaction. To introduce my plants to new customers I will send **free** one dozen plants of Senator Dunlap or Excelsior strawberry—your choice—but I must ask you to send postage which will be about 5 cents. Respectfully,

T. H. SMALLWOOD, Fort Scott, Kan.

Dewberries

I will have for spring trade a fine lot of Lucretia and Premo Dewberry roots. Write for prices.

GEO. L. GAST, Le Claire, Iowa.

"Kentucky Queen"

BEST FALL APPLE.
Send for description and colored plate. A few hundred trees left of the **Celebrated** Seedling Peach, **"Johanna."** Salesmen wanted, at
SUNNY SLOPE NURSERY,
Hannibal, Mo. WILL S. HALL. Prop.

Saperdine

IDEAL BORER PREVENTIVE.
Scientific new method. Its field the young orchard. 100,000 trees treated. Approved by professional orchardists. 1st. It is easy to use. 2d, it is inexpensive; 3rd, it is harmless to the tree; 4th, it is efficient. 1 lb. $1; 3 lbs., $2.75; 6 lbs, $5. Address,
DR. H. O. BEESON, Noel, Mo.

APPLE ROOT GRAFTS. APPLE SEEDLINGS

FRUIT TREES AND BERRY PLANTS. A complete general nursery stock. Very low prices on Missouri Pippin and Ben Davis. Our stock is clean and well grown. Send us a list of your wants.
WAVERLY NURSERIES, Waverly, Kas.

remembered that when the commission was first instituted it exercised this power, but the supreme court afterward decided that it had no such power conferred upon it. The demand now is almost unanimous—except from the railroads—that this power be conferred upon the commission and a bill looking to that end has been introduced in congress. Write your representative in congress that you favor the passage of some such bill. And do it now.

More Freight Discrimination.

In your January issue received today, I notice the remarks of Mr. Lord of Iowa on railroad discrimination in favor of the east and against the west.

I wish to add an item along this line. We established a canning factory at this place two years ago, and when we had finished our season's pack, put the output in the hands of a Joplin wholesale house to sell, and were soon informed that they could only sell in territory along the St. L. & N. A. railway, as the freight from Grand View to Joplin was 25 cents per hundred, while they were getting the same goods from Baltimore, Md., for 12 cents per hundred. The distance by rail from Grand View to Joplin is only 102 miles, while the freight rate is more than double the rate from Baltimore. I had thought of appealing to the interstate commerce commission for relief, so sent for a copy of their report to learn how to proceed, but when I read the rulings of the commission and the decisions of the supreme court on cases brought before them, I concluded to "go way back and sit down."

For instance, I read the report of the case of the mayor and city council of Wichita, Kansas, against the A. T. & S. F. railway for charging more for a short than for a long haul, when the company charged more for hauling coal from the mines in the Indian Territory and Arkansas to Wichita than from the same points to Kansas City. The commission held that the preference given Kansas City in making these lower rates of coal was not in violation of the third section, inasmuch as it was induced by competitive conditions at that point which do not obtain at Wichita? In summing up the case, the commission makes use of the following profoundly statesmanlike language:

"Wichita, distant 170 miles from the nearest coal field, could not expect as cheap coal as Kansas City, where coal is plentiful at from thirty to fifty miles."

So you see where circumstances are not similar the law don't apply. For that reason I concluded that if I made complaint and the commission held an investigation it might develop that a majority of the girls that worked in our factory had red hair, while a majority of those Maryland girls had black hair, so the circumstances would not be similar, and the commission would be powerless to give any relief, so I concluded it was no use.

Seriously, I begin to doubt any man's sanity that thinks the railroads will ever deal out evenhanded justice to localities and individuals until they are owned and operated by the government, like the postoffice and public school. S. O. TAGGART.

Grand View, Ark.

What Associations Are Doing.

The Canon City (Colo.) Horticultural Society at its late meeting had premiums for the best packed boxes of apples, as well as for the best single plates. This is the way to help market fruit—pack it well.

President Roosevelt has stated that he believes the question of regulating railway freight rates is the most important one now pending before congress, and that the private car line matter is fully as important as the bill for rate regulation.

The National League of Commission Merchants petitioned President Roosevelt to appoint a man on the interstate commerce commission who was familiar with the fruit shipping business. They preferred either a good commission man or an experienced fruit shipper. However, they seem satisfied with Senator Cockrell for the position.

Denison (Tex.) growers will plant 500 to 800 acres of canteloupes and about 200 acres of watermelons. Their strawberry crop will be very short on account of drouth.

Rocky Ford (Colo.) canteloupe growers will reduce their acreage for the coming season about 25 per cent.

The Swan (Texas) Fruit and Truck Growers Association will have an acreage for the coming season as follows: Strawberries, 230; peaches, 750; Triumph potatoes, 100; tomatoes, 60. From this should be shipped 35 or 40 cars of strawberries, 50 or 60 cars of peaches and 10 or 15 cars each of potatoes and tomatoes. Strawberry season will begin about April 10, continuing until May 1. Peaches will begin moving about June 10, with Mamie Ross and St. John, with Elbertas July 1. Potatoes and tomatoes will be ready about June 1.

At the annual meeting of North Yakima (Wash.) Horticultural Union recently, officers for the ensuing year were elected as follows: M. N. Richards, president; E. G. Peck, vice-president; J. M. Brown, secretary; Ed Remy, treasurer. At the meeting a 60 per cent dividend on the stock was declared, this having been earned upon sales of materials, such as boxes and crates, paper, sulphur lime and paris green, and for storage for outside shippers, who shipped through the union. This makes 83 per cent dividend for the past two years, and in view of the good showing made, the remaining stock was all subscribed for. Not the least important matter was the securing of a number of new subscribers for The Fruit-Grower at the meeting. The union will build a new storage house, and is in better shape than ever before. It is believed that all fruit will be handled this season through the association.

Directory of Fruit-Growers' and Shippers' Associations

(NOTE.—If your association is not contained in the following list, or if you know of associations which ought to be here, send name of association and address of secretary. No charge.)

ARKANSAS.

Arkansas State Horticultural Society—Prof. Ernest Walker, Sec., Fayetteville, Ark.
Ashdown Truck Growers' Assn.—Mr. Lott, Sec., Ashdown, Ark.
Cove Horticultural Society—W. F. Welty, Sec., Cove, Ark.
Decatur Fruit-Growers' Assn., Decatur, Ark.—E. N. Plank, Jr., Sec.
DeQueen Fruit and Vegetable Growers' Assn.—Bert Johnson, Sec., DeQueen, Ark.
Gentry Fruit-Growers' Assn.—O. W. Patterson, Sec., Gentry, Ark.
Grannis Melon Growers' Assn.—Mr. Burdette, Sec., Grannis, Ark.
Gravette Fruit-Growers' Assn.—E. H. Gasper, Sec., Gravette, Ark.
Gravette Horticultural Society—A. C. Veach, Sec., Gravette, Ark.
Jamnssen (Vandevort P. O.) Truck Growers' Assn.—G. D. Hinkle, Sec.
Mammoth Springs Fruit-Growers' Assn.—T. A. Sharp, Sec., Mammoth Springs, Ark.
Mena Horticultural Society—A. W. St. John, Sec., Mena, Ark.
Ravanna Truck Growers' Assn.—R. P. Yates Sec., Ravanna, Ark.
Siloam Springs Fruit-Growers' and Shippers Assn.—C. A. Ford, Sec., Siloam Springs, Ark.
Springdale Fruit-Growers' Union—James T. Craig, Sec., Springdale, Ark.
Sulphur Springs Fruit-Growers' Assn.—J. H. Edgerton, Sec., Sulphur Springs, Ark.
Winthrop Fruit-Growers' Assn.—W. A. Black, Sec., Winthrop, Ark.

ILLINOIS.

Illinois State Horticultural Society—L. R. Bryant, Sec., Princeton, Ill.
Southern Illinois Horticultural Society—E. G. Mendenhall, Sec., Kinmundy, Ill.
Jerseyville Fruit-Growers' Assn.—Isaac D. Snedeker, Sec., Jerseyville, Ill.

INDIAN TERRITORY.

Gans Melon Growers' Assn.—W. E. Harley Sec., Gans, Ind. Ter.
Poteau Fruit Co.—Ed. McKenna, Sec., Poteau, Ind. Ter.
Salisaw Fruit-Growers' Assn.—W. A. Wheeler, Sec., Salisaw, Ind. Ter.

KANSAS.

Kansas State Horticultural Society—Wm. H. Barnes, Sec., Topeka, Kan.
Barber County Horticultural Society—C. A. Blackmore, Sec., Sharon, Kan.
Sedgwick County Horticultural Society—E. H. Cooley, Sec., Wichita, Kan.
Wathena Fruit-Growers' Assn.—Geo. W. Kiukead, Sec., Wathena, Kan.

LOUISIANA.

Cooper Fruit and Truck Growers' Assn.—J. R. Noll, Sec., Cooper, La.
DeQuincey Fruit-Growers' Assn.—T. F. Faust, Pres., DeQuincey, La.
Hornbeck Fruit and Truck Growers' Assn.—Dr. F. R. Jones, Sec., Hornbeck, La.
Lake Charles Horticultural Society—William Teal, Sec., Lake Charles, La.
Leesville Fruit and Truck Growers' Assn.—V. O. Craft, Sec., Leesville, La.
Many Fruit and Truck Growers' Assn.—V Petty, Sec., Many, La.
Orangeville Fruit and Truck Growers' Assn.—J. M. Coverly, Sec., Orangeville, La.
Rodessa Truck Growers' Assn.—G. W. Rutledge, Sec., Rodessa, La.
Vivian Fruit-Growers' Union—J. A. Heath, Sec., Vivian, La.

MISSOURI.

Missouri State Horticultural Society—L. A. Goodman, Sec., 4000 Warwick Boulevard, Kansas City, Mo.
Ash Grove Fruit-Growers' Assn.—J. H. Lyharger, Pres., Ash Grove, Mo.
Aurora Fruit-Growers' Assn.—Fred Appleby, Sec., Aurora, Mo.
Billings Fruit-Growers' Assn.—Wm. Watkinson, Sec., Billings, Mo.
Cabool Fruit-Growers' Assn.—L. M. Moore Sec., Cabool, Mo.
Diamond Strawberry Assn.—S. B. Kemp, Sec., Diamond, Mo.
Dixon Fruit-Growers' Assn.—Dr. W. C. Carter, Sec., Dixon, Mo.
Exeter Fruit-Growers' Assn.—N. J. Lucky, Sec., Exeter, Mo.
Franks Fruit-Growers' Assn.
Greene County Fruit-Growers' Assn.—J. W. Robinson, Sec., Springfield, Mo.
Greene County Horticultural Society—Earl Hopkins, Sec., Springfield, Mo.
Logan Strawberry Growers' Assn.—B. Logan, Sec., Logan, Mo.
Marionville Fruit-Growers' Assn.—J. W. Coleman, Sec., Marionville, Mo.
Marshfield Horticultural Society—Dr. Ed. James, Sec., Marshfield, Mo.
Missouri Valley Horticultural Society—Mrs. Harriet E. Chandler, Sec., R. F. D. No. 2, Argentine, Kan.
Monett Berry Growers' Union—E. A. O'Dwyer, Sec., Monett, Mo.
Monett Fruit-Growers' Assn.—J. H. Johnson, Sec., Monett, Mo.
Mt. Vernon Fruit-Growers' Union—S. Henson, Sec., Mt. Vernon, Mo.
Neosho Fruit-Growers' Assn.—F. H. Speakman, Sec., Neosho, Mo.
Nevada Fruit-Growers' Assn.—W. H. Litson, Sec., Nevada, Mo.
Noel Fruit-Growers' Assn.—F. A. Marshall, Sec., Noel, Mo.
Noel Strawberry Growers' Assn.—S. A. Meade, Sec., Noel, Mo.
Olden Fruit-Growers' Assn.—J. H. Evans, Sec Olden, Mo.
Ozark Fruit-Growers' Assn.—Headquarters, Springfield, Mo., G. A. Atwood, Sec.-Treas.
Peirce City Fruit-Growers' Assn.—R. F. George, Sec., Peirce City, Mo.
Platte Purchase Fruit-Growers' Assn.—James M. Irvine, Sec., St. Joseph, Mo.
Pomona Fruit-Growers' Assn.—F. N. Richards, Sec., Pomona, Mo.
Purdy Fruit-Growers' Assn.—F. S. Lane, Sec., Purdy, Mo.
Republic Horticultural Assn.—Dr. E. L. Beal, Sec. and Mgr., Republic, Mo.
Sarcoxie Fruit-Growers' Union—D. McNallie, Sec., Sarcoxie, Mo.
Sarcoxie Gandy Assn.—L. C. Warmington, Sec. Sarcoxie, Mo.
Sarcoxie Horticultural Society.—J. W. Wagner, Sec., Sarcoxie, Mo.
Seligman Fruit-Growers' Assn.—W. M. Murray Sec., Seligman, Mo.
St. Joseph Horticultural Society—A. W. Bloomfield, Sec., St. Joseph, Mo.
R. F. D. No. 2
Turner Fruit-Growers' Assn.—C. F. Patterson, Sec., Turner, Mo.
Verona Fruit-Growers' Assn.—Fred Marshall, Sec., Verona, Mo.
Verona Fruit-Growers' Union, Verona, Mo.—N. M. Browning, Sec.-Mgr.
Washburn Fruit-Growers' Assn.—W. B. Adcock, Sec.
Willow Springs Fruit-Growers' Assn.—Amos Brown, Sec., Willow Springs, Mo.

TEXAS.

Atlanta Fruit and Truck Growers' Assn.—J. M. Fletcher, Sec., Atlanta, Texas.
Bloomburg Truck Growers' Assn.—W. A. Smith, Sec., Bloomburg, Texas.
Swan Fruit and Truck Growers' Assn.—D. S. Wood, Gen. Mgr., Swan, Texas.
Texarkana Fruit-Growers' Assn.—L. A. Whatley, Sec., Texarkana, Texas.

MISCELLANEOUS.

Iowa State Horticultural Society — Wesley Greene, Sec., Des Moines, Iowa.
Fruita Fruit and Produce Assn.—W. C. Rhinehart, Mgr., Fruita, Colo.
Michigan State Horticultural Society—C. E. Bassett, Sec., Fenneville, Mich.
New Jersey State Horticultural Society—Hon. Henry I. Budd, Sec., Holly, N. J.
North Yakima Horticultural Union—J. M. Brown, Sec., North Yakima, Wash.
Pennsylvania Horticultural Society — David Rust, Sec., Horticultural Hall, Broad St., Philadelphia.

Reliable Commission Merchants

The firms whose addresses appear below are all members of the National League of Commission Merchants, which fact insures their reliability. They are in the business to stay, and will appreciate and satisfactorily care for business of Fruit-Grower readers.

COYNE BROS.,
160 S. Water Street, Chicago, Ill.
Fruits, Butter, Eggs, Poultry.

GEO. MIDDENDORF CO., Inc.
Chicago, Ill.
Apples, Fruits, Vegetables, Eggs, Butter and Poultry.

SEESSEL & ASHNER,
Memphis, Tenn.
Produce and Fruits.

DAKOTA GROWN TREES

are going to all parts of the United States and are becoming famous wherever known for their hardiness and vigor. Get them from the

Geo. H. Whiting Nurseries

Our 25 years' experience in this rigorous climate is at your service at no extra charge. CATALOGUE FREE. Lock Box No. 1110.
Geo. H. Whiting, Prop., Yankton, S. D.

BIG MONEY

Can now be MADE in certain stocks by ANYONE with a capital of $5 TO $10 A MONTH. We are in position to give you the only reliable inside information. Write today.
UNION SECURITY CO.
534 Gaff Bldg., CHICAGO, ILL.

Always mention The Fruit-Grower.

Nebraska State Society

Pioneer horticulture in a region once known as the great American desert; the high honors won by Nebraska fruit at the St. Louis exposition, and the burning question of excessive and prohibitive freight rates, were some of the topics discussed at the recent meeting of the Nebraska State Horticultural Society, held at Lincoln. The exhibit of fruit and flowers was the best in the history of the society, and the auditorium of the horticultural building at the state farm was entirely inadequate to hold the crowds who came to listen to the horticulturists and leading fruit growers.

Among those present whom the society loves to honor were J. H. Masters and ex-Governor R. W. Furnas. Mr. Masters was the first president of the Horticultural Society, serving in that capacity for eight years, and related how the society was organized at the time of the second territorial fair, held in Southeastern Nebraska before the admission of the state into the union.

Officers of the society elected for the ensuing year are as follows: President, G. S. Christy, Johnson; first vice president, W. A. Harrison, York; second vice president, E. M. Pollard, Nehawka; secretary, L. M. Russell, Lincoln; treasurer, Peter Younger, Geneva. Board of directors, W. G. Swan, Tecumseh; Charles Saunders, Omaha; C. H. Green. Fremont.

Pioneer Horticulture.

Ex-Governor Furnas, the venerable pioneer horticulturist, whose beneficent, public-spirited work has been the inspiration to thousands of tree planters, gave some highly interesting reminiscences of the establishment of horticulture in Nebraska.

"I came to Nebraska from Ohio," said Mr. Furnas, "where a young man was simply known as the son of his parents as long as the old people lived. I came in the year 1855 and speedily found that in this new country a young man counted as a whole man. There is a great fascination about the establishment of a new industry in an untried country and I entered into the movement for the horticultural unbuilding of Nebraska with a great deal of interest.

"All of this country west of the Missouri river was commonly called the Great American desert, where nothing would grow. In the east we had grown fruit without difficulty, but here we did not know what varieties to take up. We were not long in finding out that we could not raise our old-time favorites of the east. There was no professor of horticulture in those days with a fund of information at his command for our benefit. Each man was his own horticultural professor and our school was the expensive school of experience. We estimated that it cost us an average of $100 for every fruit tree we brought into bearing. Those were the days when it meant hard work, but financial self-sacrifice as well, to be a horticulturist. I paid $1 each for the first Concord grape vines I planted. The price seemed high. But when, in a few years, I gathered the delectable fruit from the vines and sold what I wished to spare at 10 cents per pound I felt amply repaid.

"I have been much interested in ascertaining who planted the first apple trees in the state. My friend, Mr. Masters, planted his first trees on the 16th day of March, 1855. That same fall a certain Mr. Bobst went down into Missouri and brought back a bundle of apple trees on horseback tied behind the saddle. These were planted on the 20th of September. 1855. I have been given to understand that a Mr. G. B. Lore planted some apple trees in 1835, some of which are still alive and bearing fruit. So far as I have been able to ascertain these three plantings were the earliest of any in Nebraska."

E. M. Pollard, superintendent of the Nebraska fruit exhibit at the St. Louis exposition, told of his experiences there and the high honors awarded the state. The varieties he had in cold storage for the exhibit were as follows: Jonathan, Grimes Golden, Yellow Bellflower, Mann, Stark, Genet, Willow Twig, York Imperial, Smith Cider, Northern Spy. Ben Davis and Gano. All of these varieties kept remarkably well in cold storage.

He found that if apples were in good condition when picked and were shipped promptly to cold storage they came out in excellent condition. The condition in which the fruit opened up after storage was dependent entirely upon the condition in which it went into storage. Grimes Golden and Jonathan unpacked the first of July were as crisp and juicy as when picked from the tree.

"We undertook to make a continuous exhibit of all the varieties of fruit grown in the state," said Mr. Pollard, "and the fruit we put on the tables was grown by forty-five men representing the fourteen counties. I made an effort to demonstrate that the quality of our fruit is just as good as that grown in any other state in the union. So many people are of the opinion that to secure fruit of good quality they must go to New York or Michigan to find it, that from a comparative statement given by the judges who passed on the fruit we proved beyond a doubt that the quality of our fruit is equaled by few and surpassed by none.

"In the distribution of awards Nebraska led all other states in the union in the number of gold medals received, when the number of exhibitors is considered. Fourteen was the number of gold medals won besides twenty of silver and eighteen of bronze. We won more premiums according to the number of exhibitors than any other state. Of our forty-five exhibitors forty-two won medals.

"We have passed beyond the experimental stage in the growing of fine fruit. When brought into direct competition with the best fruit-growing sections of the world Nebraska need not be ashamed. We should now undertake to demonstrate to our people that it is no longer necessary to go east, west or south for fancy eating apples, but that they may be secured within our own state. Statistics show that 75 per cent of the apples consumed in Nebraska are shipped into the state. This should not be the case. The quality of the fruit grown here is just as good as that produced in any other part of the world and the horticultural society should take upon itself the highly agreeable task of spreading this information among our own people."

The question of excessive freight rates was warmly discussed by C. B. Parker of Brock. "Pardon me," said Mr. Parker, "if I give a revised version of an old scriptural text. 'What shall it profit the fruit growers if they raise enough fruit to supply the whole state of Nebraska and the railroads take all the profit?" If the railroads would give us reasonable freight rates they would haul twenty cars of fruit where they now haul one. This would cheapen the price of apples to such an extent that people who now buy five bushels would buy twenty or thirty; and this increased demand would enable the fruit growers to dispose of all their products.

"A car of apples shipped from Auburn to Chadron, Neb., a distance of about 500 miles, costs 84 cents per hundred. A car of apples shipped from New York to Auburn, a distance three times as great, costs only 75 cents per hundred. The freight rate on a car of apples from Brock, Nebraska, to Waubay, S. D., is 52 cents. From New York to Waubay the rate is only 39 cents. As a result of such discrimination a quarter of a million bushels of fruit rotted on the ground in five southeastern counties last season.

'Something is radically wrong when choice Nebraska fruit goes to waste because freight rates prohibit its being moved to market. This is a burning question with commercial orchardists and will be fought to an issue here in Nebraska as it has in other states". A committee was appointed to meet and confer with representatives of the Western Traffic Association; and

HOW I MAKE THE BLIND SEE

Without the Knife or Pain, in Patient's Own Home.

CATARACTS, and all other eye diseases which cause blindness, are caused by poor circulation of blood in the eye, the result, usually of eye strain, some time in the near, or maybe remote past.

The eye has been overtaxed in some way at some time.

Did you ever consider the intricate mechanism of this delicate organ, with its numerous muscles, nerves and small arteries and veins?

If so, you must realize how easily its usefulness may become impaired.

You will also realize the folly of attempting to restore its usefulness by applying a knife to any of the delicate intricate parts.

Think of the pain, suffering, blindness and even death that has been caused by the use of the knife on the eye.

I discovered several years ago a method of restoring the natnral circulatiion of blood to the eyes which is so simple that a child can apply it.

By this simple, mild and harmless treatment I have restored sight to thousands in all parts of the world.

When this treatment is applied it immediately removes all strain on the nerves and muscles of the eye, equalizing the circulation, therehy assisting nature in restoring the eye to its normal functions.

Acting along the same lines, my treatment cures Optic Nerve Paralysis, Granulated Lids, and all other eye-diseases.

By its use the eyes are strengthened, brightened and beantified.

My book about eyes, sent free, tells all about it, and contains pictures of and letters from hundreds who have been cured.

Some of these people may be well known to you.

What they have to say will interest you.

A postal card will get the book and I will give you my free advice if you will write me a short description of your case.

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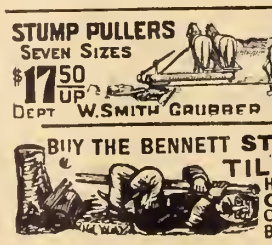

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Established 1869. Packing and Shipping facilities unexcelled. Agents wanted.
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Mr. Parker introduced the following resolution which was unanimously adopted by the horticultural society.

"Whereas, It has come to the knowledge of Nebraska fruit growers that the interstate freight rates on fruit discriminates against the fruit-growers of Nebraska, therefore be it

"Resolved, That this society requests our legislature to ask congress by joint resolution to support an amendment to the interstate commerce law, which provides that when the interstate commission shall find that the rates charged by any common carrier are unreasonable, they shall have power to cancel such rates and establish reasonable rates which shall not be stayed, suspended, modified, or annulled otherwise than by the commission in the establishment of a new rate or rates or by a final decree of the United States court of competent jurisdiction for manifest violation of error of law.

E. F. Stephens of Crete told of horticultural conditions in Western Nebraska. Central and far western Nebraska. Central and far Western Nebraska has been almost unknown horticulturally. The public is tardily awakening to the fact, however, that there are in that part of the state districts as well suited to the growing of excellent fruit as the best Kansas and Colorado counties.

Cool nights, ample moisture and bright sunshine all combine to give the high coloring and fine quality which has made Colorado fruit famous. Western Nebraska has all of these. Given fertile soil, an abundance of water, either by ditch or subirrigation, and favorable climate, there is no reason why the fruit products of Western Nebraska should not equal in excellence those of Colorado.

Mr. Stephens made reference to fine apples of the Jonathan, Ben Davis, Grimes Golden and Missouri Pippin, varieties which he saw growing in various parts of Central and Western Nebraska. He also saw twenty-one varieties of budded peach trees all in bearing in one orchard, as well as strawberries and other small fruits in various places. Plums of the Americana and Domestica types succeed much better there than in the eastern part of the state. Apparently the dry, sunny weather to which Western Nebraska is accustomed at blossoming time is favorable to pollination.

The time is coming when these fertile, well watered western lands will be utilized in the growing of fruit in large commercial quantities.

Crete, Neb. B. F. STEPHENS.

Fighting Codling Moth in Colorado.

The codling moth, as is always the case at a meeting of apple-growers in Colorado, came in for his share of attention at the late meeting of the Tremont county (Colo.) Horticultural Society. The codling moth, which has been the bane of the Colorado fruit-grower, is gradually being overcome, and his ravages reduced to the minimum by intelligent and persistent spraying. A few years ago, by spraying from four to six times with paris green, or arsenate of lime, growers got fairly good crops of apples. It was shown at the late institute that by the use of arsenate of lead, fruit-growers have cut down the percentage of wormy apples from 25 to 50 per cent to 10 per cent in th cleanest orchards and 12 to 15 per cent in those most affected.

It was shown during the institute that in cases where orchards were not sprayed for codling moth wormy apples ran as high as 95 per cent. It was the consensus of opinion that arsenate of lead (or Disparene, was the best "medicine" for the destruction of codling moth, and next season will witness a more general use of arsenate of lead than any previous year. Disparene comes in 5, 10, 20 and up to 100-pound packages, in paste form. It should be used in quantities of four pounds to 100 gallons, or two pounds to a fifty-gallon barrel. Growers here do not deem it necessary to spray to exceed three times in one season, and some have had good results from but two sprayings. Prof. C. P. Gillett of the Colorado State Agricultural college, who is recognized as one of the highest authorities in the United States on fighting the codling moth, was the principal speaker, as he is at every institute held by this society.

Prof. Mendall Paddock of the same institution gave the fruit-growers a splendid talk on "Orchard Fertilization." The professor advocates clean cultivation in the apple orchard up to July, when he would plant a cover crop and plow under in the fall. Prof. Paddock, by the way, acted as one of the jurors, or judges, on the fruit display at the St. Louis exposition.

The importance of a good apple pack was discussed at some length. It was shown that the Colorado apple and Colorado pack are growing in favor with apple-buyers everywhere. Winter apples of last year's crop have been shipped east to New York city and west to Los Angeles, Cal.

Canon City fruit growers took at the St. Louis exposition twenty-nine gold, silver and bronze medals.

The Western Fruit-Grower has more than double the number of subscribers at Canon City than any other fruit journal. Ten new names were added to the list during the institute.

J. W. WORK, Pres.

Canon City, Colo., Jan. 13.

Colorado's Annual Meeting

At the fifth annual convention of the Colorado State Horticultural Society recently held in Denver many points of especial interest to fruit-growers were discussed by men whose wide experience and extensive interests has made them specialists in their lines.

Practically all of the fruit output of the commercial orcharding districts of Colorado is handled by shipping associations, which are able to secure much better returns for their members than can indi- duals who market independently. W. J. Galligan, manager of the Loveland Fruit-Growers' Association, told of some of their experiences in handling fruit.

Early in the season they begin corresponding with numerous merchants and book as many orders as they can for daily shipments. They always guarantee the quality and the price. A wholesale dealer is selected in each large city to whom is consigned all the fruit he can dispose of. He reports to the association daily by 'phone or wire, and from this and other sources the market price is established daily. This price is charged on all standing orders. The same prices are placed on a bulletin for the benefit of the growers, who are not allowed to sell first-class stock under the same prices.

The standing orders are filled first from the best picking of the day. Most of the fruit is examined before it goes out and an invoice for each shipment is tacked under the cover of each case. Each invoice bears in bold letters the statement: "All claims must be made immediately on receipt of goods, accompanied by a full statement of the facts and the grower's number on the end of the crate." If the claim seems just, it is charged back to the grower and credited to the consignee. Weekly statements are sent and the effort is made to collect closely; yet at the end of the season there is often several weeks' work remaining to close collections and make settlements with each grower.

Their greatest difficulty is to dispose of the fruit picked on Saturdays. Customers do not care to receive it on Sunday. It must be held somewhere until Monday and frequently arrives in poor condition. This results in a cut in prices and it often takes from one to two days to recover from the depression caused by marketing such fruit. Mr. Galligan believes that the association would frequently make money by totally destroying Saturday's picking instead of allowing it to depress the market. Not infrequently the effect has been to lower the price from $1.50 per case to $1, or even less.

The association has 150 members and standing orders require the shipment of a certain number of cases daily. One-half the members pick Monday, Wednesday and Friday; the other half pick Tuesday, Thursday and Saturday. Those picking Tuesday and Thursday feel that they must pick Saturday, as the fruit would be over-ripe by Monday and worthless.

In 1903 the market was extra good. Red raspberries, in cases holding twenty-four pints, sold for $1.45 per

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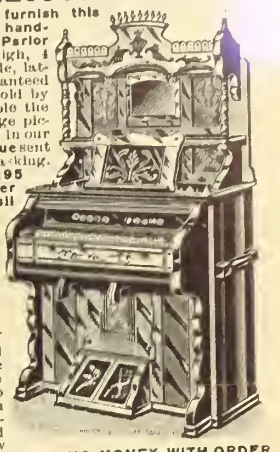

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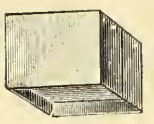
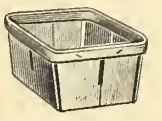

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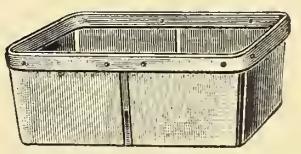

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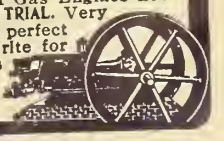

case. In 1904 the prices dropped to 82 cents per case. In 1902 Loveland shipped more red raspberries than any other town in the state.

Mr. Galligan urged the supreme importance of having fruit packed in the finest possible form; holding that to attract the eye is the vital point in selling. The trade is rapidly reaching the point where it is more profitable to grow large and showy varieties than smaller and more productive sorts. Fruit of large size and good quality, neatly and attractively packed, sells itself.

In speaking of "The Peach Situation in Colorado," W. S. Haswell stated that the Elberta peach is unquestionably the finest variety in Colorado. It produces in great quantities and the quality is of the best. The tough nature of the skin preserves it in shipment and it is preferred to the other varieties raised in the state.

R. V. Pickett of Eldewater told of his experience in "Planting an Apple Orchard." An orchard should not be planted in the sod, but should be put on soil that had previously grown grain or a hoed crop. The fall is the proper time to plow, leaving the ground rough over winter to catch the snow. In planting the trees, all broken and bruised roots should be cut off.

W. Frank Crowley of Montrose, speaking on "Irrigation and Cultivation," said that he would plant a young orchard where there was a sure and abundant supply of water. At Littleton a thrifty orchard had been grown by cultivation up to the bearing age and then had to have water. An ample supply of moisture is necessary at fruiting time in order to grow fruit of large size and good quality. This is economical as well, for peaches that run only fifty or thirty to the box can be picked and packed faster and bring higher prices than small peaches.

Peach trees must be heavily pruned in Colorado to grow a low head, so that all the fruit can be picked from the ground. Before planting the orchard the ground should be plowed deeply, to let the water sink in readily. On the eastern side of the range, as in the Arkansas Valley, where they have a sandy loam soil, they irrigate in the winter and use the sub-soil as a reservoir. At Rocky Ford, they flood the orchards five or six times in winter, so that the ice is sometimes five or six inches deep. Soil so treated needs less water during the summer.

One point to be aimed at is to have the trees rooted deeply in a deep subsoil. It is best to cease cultivation August 1 and grow a cover crop. Do not plant any other crop in the orchard. Grow the trees as the one and only crop.

In answer to a question as to whether an orchard was most profitable on the eastern or western slope of the range, Mr. Crowley said that the western slope was far from market, and had heavy freight rates, but never failed to grow a crop. Even a bad freeze with the trees in bloom only serves to thin the crop and produce larger and better fruit. Size and quality they must have in order that their produce shall command a price which will enable them to stand the heavy freight rates. On the eastern slope it requires longer to bring an orchard into bearing, but the freight to market is less.

As to varieties, the Elberta peach is valuable because it is late in ripening and commands a late market. Ben Davis, Rome Beauty and Jonathan apples are very profitable, the latter two selling at $1 a box. Large Winesaps sold at 90 cents a box. The most serious objection to Winesap, however, is its lack of size. It requires severe thinning and ample fertilization to grow it large enough to make it attractive on the market. On the western slope Ben Davis has a high color and can be picked and packed more cheaply than others. Mr. Mendenhall of Montrose sold $3,500 worth of fruit from twenty acres. He gave great care to his soil, trees and fruit, and severely thinned his Jonathans, Winesaps and all his peaches. Mr. Crowley regards hogs as valuable assistants in the orchard, since they eat wormy apples as they fall and in winter search for hidden larvae.

Mr. E. F. Stephens of Crete, Neb., who was present, on the invitation of the society, told of the unknown horticultural possibilities of Western Nebraska, where there are districts as well suited to the production of fine fruit as the best Colorado counties, located much nearer the central markets of the United States. The production of fine fruit depends upon three prime requisites—soil, water and climate. The sub-irrigated and ditch-irrigated districts of Western Nebraska have both fertile soil and an abundance of water, and the climate is but little different, if any, from that of Colorado. The time is coming when these districts will be utilized in the growing of fruits in large commercial quantities. In the meantime Nebraska must learn from Colorado and other states the secret of grading fruit carefully, putting it up in attractive packages and advertising it skillfully.

Prof. C. P. Gillette of the State Agricultural college, an authority on spraying, said that anyone who has more than 10 per cent of wormy apples is not working on the best methods.

The codling moth winters in the larval stage until about blossoming time in the spring, when it is transformed into a moth, or miller. This deposits the eggs, a majority of which are laid on the leaves. The first brood is sometimes delayed in coming out and may last as long as fifty-nine days. The second brood comes out about July 10 in the latitude of Denver and may last equally long. Over most of the United States the two broods overlap one another, so that by the time the first brood is passing the second is at work.

The most important spraying consideration is thoroughness. Many orchardists do not know when they are thorough. Thorough spraying means to inject at least some poison into the calyx of every blossom. Spray pumps geared to a wagon do not apply enough. A fifty-gallon barrel is sufficient for only eight or ten trees of large size.

A few years ago London purple was the material used. This was abandoned, because it does not always have the same strength. Arsenite of lime is nearly the same as London purple. There must not be any free arsenic in the solution, as it burns the foliage. The use of arsenate of lead, or Disparene, avoids this. It is not necessary to use any lime with Disparene and any strength of this material can be used without burning the foliage. It should be used at the strength of four or five pounds to each 100 gallons of water. It sticks to the foliage well and is not likely to lose its efficiency if a rain follows the spraying.

It is of the utmost importance that the first spraying should be done before all of the bloom has fallen. Begin with the early varieties and spray when nearly all the petals have fallen. That the first spraying should occur at just the right time is of more importance than all other spraying. The work should be completed within six days. When the calyx closes it prevents the lodgment of poison.

The second spraying should be done the following week. Its especial usefulness is to attend to such blossoms as escaped the first operation. It is not wise to spray summer varieties the third time, but winter varieties in the latitude of Denver should be sprayed again between the 1st and 10th of July.

The first spray should be applied with power, using a fine guage of the vermorel nozzle. To stop spraying when the leaves drip might not be enough. In later sprayings, however, apply just enough to wet the surface of the leaves, since the intent is to deposit the poison there to destroy the young larvae hatching from eggs on the leaf surface.

The codling moth does not travel far if there is fruit to be found near by. Your neighbor may not spray at all, but if he has an abundance of fruit the moth will make its home there instead of infesting the neighborhood.

The percentage of wormy fruit in orchards not sprayed as compared with orchards thoroughly sprayed is conclusive enough to clinch the argument past all question in favor of thorough spraying. Three unsprayed orchards averaged, respectively, 48 per cent, 77 per cent and 99 per cent of wormy apples. In another orchard, sprayed three times, the percentage of wormy fruit was only 6 2-3.

One peculiar fact regarding the codling moth is illustrated by the fact that at Fort Collins one season they had a hail storm which destroyed the apple crop. The next year the apple crop was remarkably free from worms, while the second year after almost no worms were found.

Very few larvae winter in weeds. They may get into some crevice at the base of the tree and winter in the surface soil if it is cracked open, or under some scale of rough bark. Only a few larvae survive the winter, most of them being destroyed by natural causes. Practically all of the second brood, however, get in their destructive work, a fact which renders the first spraying a matter of supreme importance.

Hon. J. H. Crowley, senator from Rocky Ford, one of Colorado's most practical orchardists, urges the necessity for extreme thoroughness of spraying. At picking time he is sometimes able to follow the spraying of a careless workman through the orchard by the percentage of wormy apples found. The average man neglects the tops of apple trees twenty-five feet tall and these tops may contain 50 per cent of wormy apples. Last season he personally sprayed every tree in an orchard of twenty-three acres before the calyx closed, with the highly satisfactory result that less than one-half of 1 per cent of summer apples and less than 3 per cent of winter apples were wormy.

Such spraying as this applied to our orchards would better the quality of our fruit, make it more salable, enable it to command higher prices and put thousands of dollars into the pockets of the commercial orchardists.

E. F. STEPHENS.

Crete, Neb.

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Does your mouth taste bad mornings?
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Answer the questions I've made out for you, write your name and address plainly on the dotted lines in the Free Medical Advice Coupon, cut them both out and mail to me as soon as possible. 'Twill cost you nothing and will give you the most valuable information. Address CATARRH SPECIALIST SPROULE, 324 Trade Bldg., Boston. Don't lose any time. Do it now.

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Don't let it destroy your happiness—your health—your very life itself.

Don't waste any more time—energy—money, in trying to conquer it with worthless nostrums.

Don't think it can't be vanquished just because you have not sought help in the right place.

Write to me at once and learn how it can be cured. Not merely for a day, a week, or a year—but permanently. Let me explain my new scientific method of treatment, discovered by myself—used only by myself.

Catarrh is more than an annoying trouble—more than an unclean disease—more than a brief ailment. It's the advance guard of Consumption. If you don't check it, it's bound to become Consumption. It has opened the door of death for thousands. Take it in hand now—before it's too late.

I'll gladly diagnose your case and give you free consultation and advice. It shall not cost you a cent.

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Let me show you what I'll do for you entirely without charge. Thousands have accepted this offer—today they are free from Catarrh. You've nothing to lose and everything to gain. Just for the asking you'll receive the benefit of my nineteen years of experience—my important new discoveries—my vast knowledge of the disease.

Free Medical Advice Coupon Catarrh Specialist SPROULE, 324 Trade Building, Boston, please send me, entirely free of charge, your advice on the cure of Catarrh.

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We offer for sale at bargain prices the following surplus stock:

APPLE TREES POPLAR TREES
PEAR TREES GRAPE VINES
CURRANT BUSHES

We have these in two to three sizes at bargain prices. These are the best rooted and best trees, plants and vines we have ever grown. They must be sold to clear leased land. Write for free catalogue and prices. If you want a free copy of Green's Fruit Magazine, say so and get it.

GREEN'S NURSERY CO., Rochester, N. Y.

It's 10 to 1

That if you have never bought any of our STOCK, but do so this season, WE will number you as a regular customer in the future. Our large stock of ALL Nursery-grown Goods, shows exceptionally fine development. Cannot we supply your wants, in some line of the business? WE GROW EVERYTHING! but make a specialty of the things the "other fellow" does not grow.

OUR STOCKS SELECTED Write us your wants. Catalogue for the asking. **OUR PACKING PERFECT**

The Willadean Nurseries, Box 42, Warsaw, Kentucky

More Catalogues Received.

Since the January issue of The Fruit-Grower was sent out we have received a number of other catalogues for seedsmen and others. Among them are the following:

Olds Seed Co., Clinton, Wis.—This firm this year, as usual, makes a specialty of seed potatoes; having been in this line for 18 years, the firm naturally feels in position to give satisfaction in furnishing seed potatoes. A new potato, White Victor, is offered for the spring of 1905. Seed corn, oats and other field seeds are offered in full line of varieties, together with a full line of garden and flower seeds. The new potato offered is said to be similar to the old Blue Victor, except that its skin is white; it is a good grower, very productive, and tubers keep well and are of remarkably good quality.

Storrs & Harrison Co., Painesville, Ohio.—This is a complete catalogue in every way, for the firm handles all kinds of seeds and plants, and also a full line of nursery stock. In the catalogue this year several specialties are offered. Among them are three new roses, Ollvia, Intensity and Souv. de Pierre Notting. These are claimed to be very fine varieties adapted to general culture. Another specialty is a new red grape, Regal. This variety has been tested in a number of places, and those who have seen the vine and fruit are loud in their praise of it. The Regal is described as follows: Berries large, persistent, translucent, dark red, juicy, with a skin thin but tough; quality is good. It is a long-keeping variety and will ship long distances. Vine is exceedingly productive, ripens its wood early and is perfectly hardy.

Zimmerman Seed Co., Topeka, Kan.—This catalogue lists a full line of field, garden and flower seeds. A better quality of paper and better press work would have made the catalogue more attractive.

Joseph Harris Co., Coldwater, N. Y.—This is a very neat catalogue, well written and well printed. A feature is made of Harris' Snowball potatoes, claimed to be proof against blight and rot, and with a good yielder of good-quality potatoes. Loug's White Tartar oats are also pushed. Besides listing a full line of seeds, this firm furnishes fertilizers, spraying materials, etc., and solicits orders for eggs and fowls of White Wyandotte chickens and White Holland turkeys.

Jewell Nursery Co., Lake City, Minn.—This catalogue is more of a nursery catalogue than a seed catalogue, yet a full line of the latter is listed. In the nursery line special attention is paid to those hardy varieties which are needed by Northern planters. A specialty is made of apple and plum trees, evergreens and shade trees of all kinds. The catalogue is not only a good one, but a valuable guide for those who contemplate planting in northern locations.

E. E. Wheeler, Bridgeport, Conn.—A good seed catalogue, which lists a full line of seeds, and which makes a specialty of some collections of roses and sweet pea and nasturtium seeds. The book is well printed and well illustrated.

E. C. Green & Son, Medina, Ohio.—A very neat catalogue comes from this firm, the title page being especially unique. This page shows a spray of cosmos blossoms, and presents an attractive appearance.

W. R. Gray, Oakton, Va.—This is the catalogue of a florist, who furnishes rose plants carnations, chrysanthemums, etc., together with dahlia roots, flower seeds, etc.

H. H. Berger & Co., 47 Barclay St., New York.—This is the catalogue of an importer, who makes a specialty of Japanese plants and bulbs. Flower seeds are also listed, together with flowering tree and shrub seeds. This firm makes a specialty of Japanese iris, Japanese lilies, peonies, etc., and the line of these is one of the most complete in the country.

Nanz & Neuner, Louisville, Ky.—This is another florists' catalogue, and a good one. Besides being most complete in this line, the catalogue lists a line of nursery stock, with particular attention to ornamentals. This firm is an old, reliable one, and its catalogue is in every way a good one.

L. L. May & Co., St. Paul, Minn.—This firm sends out a seed catalogue and a nursery catalogue, all in one. The seed department is complete in every line, and the nursery catalogue makes a specialty of trees and plants for Northern planters. This firm claims to have at Mayfield, Minn., the most Northern nursery, and naturally hardy trees are made a specialty. A full line of the better Russian fruits is listed, as well as many of the seedlings which have been reproduced in Minnesota and Wisconsin. In looking over the catalogue one cannot fail to be impressed with the number of good seedlings of Wealthy and Duchess which are being offered for planting in the Northern states. A feature is made of the Minnetonka apple, which is sold under a guarantee that it will bear a bushel of fruit; if not, it will be replaced free of charge.

Arthur Cowee, Berlin, N. Y.—This is a catalogue devoted exclusively to gladioli, Mr. Cowee being one of the world's leading specialists in these flowers. It lists the different strains which have been hybridized by H. H. Groff, and which won the grand prize at St. Louis, as well as at all other expositions where they have been shown. No one who wishes to grow this most popular flower can afford to be without Mr. Cowee's catalogue.

O. A. E. Baldwin, Bridgeman, Mich.—Mr. Baldwin makes a specialty of small fruit plants and seed potatoes. For years he has given special attention to these lines, and his catalogue is a good one on these subjects. Strawberry plants, hush fruits and grape vines are listed, and a full line of seed potatoes for which Michigan is famous.

R. D. McGeehon, Atlantic, Iowa.—Mr. McGeehon has for years been one of Iowa's best strawberry growers, and his little catalogue is eagerly sought by the growers in that state. He lists raspberry, blackberry, currant and gooseberry plants, as well as grape vines. The 1905 catalogue is small, but full of meat.

C. E. Whitten's Nurseries, Bridgeman, Mich.—This is another catalogue of strawberry plants and bush fruits. Besides listing a full line of the better-known strawberries, the Howard No. 2 and other new strawberries are included. Cultural directions are given, and altogether the catalogue is a good one.

German Nurseries, Beatrice, Neb.—A general nursery catalogue quoting full line of stock. Tree fruit, hush fruits, etc., are all listed in full assortment of varieties, and a specialty is made of forest tree seedlings, such as black locust, osage orange, catalpa, etc. This is a good catalogue, from a good nursery.

Delaware Nurseries, Milford, Del.—General nursery catalogue, with particular attention to the peach, this fruit being popular in that part of the country. A very neat catalogue.

J. G. Harrison & Sons, Berlin, Md.—This is a general nursery catalogue, and a good one. This firm makes a specialty of strawberry plants and of apple and peach trees for commercial planters, and naturally these lines come in for a good share of space in the catalogue. The best varieties of strawberries are listed, and as the nursery is located in a good strawberry section, the reports as to varieties are valuable. Few plant growers have as full a line of varieties as this firm. The same is true of varieties of peaches, for all the varieties, such as Hiley, Waddell, Carman, etc., which are not generally known, but which are proving so valuable, are listed. The varieties of peaches are separated into nine groups, in order of ripening, the lists extending from the Sneed as the earliest to Bilyeu's late October. The list of apples is also complete, a specialty being made of varieties for commercial orchards. In addition, the catalogue lists all other fruit trees, such as plums, cherries, pears, etc., and altogether the catalogue is one of the best nursery catalogues of the year.

Roeder Nurseries, Osceola, Mo.—A neat little catalogue of general line of nursery stock, with particular attention to those varieties of fruits which have made the most money for growers.

Geo. H. Stahl, Quincy, Ill.—Catalogue of the Excelsior line of incubators and brooders. The book is well printed, with illustrations of machines printed in three colors, and besides listing different sizes and style of incubators and brooders, also contains a full list of poultry supplies.

The Aermotor Company, Chicago, Ill.—The annual catalogue of this firm is a good one. It describes the well-known windmills made by this firm, together with pumps of different styles. Illustrations show the working parts of the pumps and windmills, and give intending purchasers a good idea of the character of the machines. Directions are given for the making of reservoirs, for holding water for irrigation purposes, etc., and the information the book contains makes it of value to everyone who owns a windmill or who contemplates purchasing one.

North Star Plant Farms, Cokato, Minn.—This is a catalogue of small fruit plants, with a few varieties of Northern potatoes, seed wheat, etc., in addition. A full line of strawberries is listed.

Gould's Mfg. Co., Seneca Falls, N. Y.—This firm makes a full line of sprayers, which are described in the catalogue. In addition, other styles of pumps are listed, together with nozzles and other appliances which are needed in spraying. A spray calendar will be found of benefit to fruit-growers.

Rippley Hardware Co., Grafton, Ill.—This is a catalogue which is needed on every farm, for it lists spray pumps, feed cookers, insecticides, breeders' and farm supplies, and it will be a strange farmer who does not want some of the things which are quoted in this book. This firm handles a line of insecticides for those who prefer to buy their goods in this form. The catalogue consists of 90 pages and cover, and contains much information of value.

Niagara Sprayer Co., Buffalo, N. Y.—This firm makes a sprayer which does not require pumping, gas being used to furnish the power necessary to produce a fine mist. This style of sprayer is fully described in the catalogue, and illustrations are reproduced from photographs, showing the machines at work in the orchard. Formulae for making spray mixtures are given, and the catalogue is a good one for those who are interested in the subject of spraying trees or plants.

Wallace Machinery Co., Champaign, Ill.—This firm makes a power sprayer, which transmits power from the rear wheels to the spray tank. The pump is described in the catalogue, and illustrations are submitted showing the machine at work. In addition to being a catalogue, the book is a treatise on spraying, with directions for making and applying spray mixtures of different kinds.

Pierce-Williams Co., South Haven, Mich.—This firm has also a plant at Jonesboro, Ark., so that its catalogue and its goods are more interesting to Fruit-Grower readers in the Southwest. The 1905 catalogue is a good one, and ought to be in the hands of every fruit-grower. Berry boxes of different styles, grape baskets, stave baskets, peach crates, vegetable crates, apple boxes, stapling machines—everything in the way of a fruit package is listed, with illustration showing the different styles. The book is well printed, well illustrated, and is in every way satisfactory.

J. T. Lovett, Little Silver N. J.—This is a general nursery catalogue, with a full line of trees and plants, but this firm has always made a specialty of small fruits, and the catalogue is especially good for its discussion of this branch of the business. Mr. Lovett has been one of the men who have tested most of the varieties introduced, and his opinion as to the comparative value of different sorts is valuable. In addition to a general nursery line, special attention is paid to herbaceous plants, such as peonies, lilies, etc.

Strand's Nursery, Taylor's Falls, Minn.—This firm is located up north, and naturally the varieties of fruits listed are largely made up of the sorts which are extensively planted in that section. The firm believes in growing apples in Minnesota, and has a splendid line of varieties which succeed there. Other fruits are also listed as well as a full line of evergreens and ornamentals.

North Bend Nurseries, North Bend, Neb.—General line of nursery stock, with special attention paid to varieties, also to shade and ornamental trees and seedlings. This nursery also grows great quantities of strawberry plants, and is well prepared for a large trade for the coming season.

M. Crawford Co., Cuyahoga Falls, Ohio.—This is a good catalogue of strawberry plants, well written and well printed. Three new varieties are listed, as stated in The Fruit-Grower last month—Nimrod, Victor and Mrs. Miller. Besides strawberries several new bush fruits, such as Kenoyer blackberry, Perfection currant and Blowers blackberry are listed. By the way, The Fruit-Grower erred in stating last month that this company introduced the Blowers blackberry. It has been one of the foremost in pushing the variety, is not the exclusive introducer.

F. W. Dixon, Holton, Kan.—A catalogue of strawberry and hush fruit plants. Mr. Dixon is an extensive grower of strawberries for market, and therefore his reports as to comparative value of different varieties are interesting. He also lists bush fruits in full line of varieties, especially of the Cardinal raspberry.

Tucker Plant Breeding Farm, Blodgett, Mo.—This is a catalogue of seed corn—and nothing but seed corn. It is one of the best we have seen, being especially well printed. This farm is in charge of Dr. G. M. Tucker, who was at one time connected with the Missouri Agricultural College as instructor in agronomy, and this fact insures that the work of breeding seed corn is in good hands. Dr. Tucker is also secretary of the Missouri Corn Breeders' Assn. Those who want good seed corn should have this catalogue.

W. S. Todd, Greenwood, Del.—Mr. Todd is an extensive grower of strawberry plants, and his catalogue lists a full line of varieties.

Johnston Harvester Co., Batavia, N. Y.—This catalogue includes a line of the farming implements manufactured by this firm. It is one of the best catalogues we have seen, the printing being especially fine. This firm makes a disc harrow for orchard cultivation, which is described and illustrated in the catalogue.

Crete Nurseries, Crete, Neb.—This catalogue is especially intended for Nebraska planters, and more especially for those persons who have not yet been convinced that fruit can be grown under most trying conditions in that state. And as a catalogue for this purpose, it is a decided success. Illustrations are presented, showing what has been done under the direction of this company, in the way of growing orchards where other persons have contended they could not be successfully grown. A full list of varieties adapted to that climate are presented, and in every way the catalogue is a good one. It is especially well printed, and to show that the nurseries are up to date it need only be said that on one page is a recommendation that all customers of the firm read The Fruit-Grower. The catalogue is a good one without this recommendation—but of course this recommendation only increases its value.

John R. Risdon Seed Co., Riverdale, Maryland.—This firm has a neat catalogue, and sells its goods along somewhat novel lines. The catalogue is not the only salesman, for it has agents throughout the country which sell direct to the growers. These agents receive either cash commission, extra packages of seeds, or premiums of various kinds. Accompanying the catalogue are letters from many of those salesmen, who have been successful in disposing of great quantities of the seeds. In addition to listing a full line of seeds, the firm has Barred Leghorn poultry of the best strains.

Caleb Boggs & Son, Cheswold, Del.—This firm handles a full line of strawberry plants, and in addition furnishes cabbage, tomato and celery plants in quantities. Nearly everyone wants a few of these plants, and yet not enough to justify planting a lot of seed. This is especially true of celery plants. To such persons this catalogue will prove especially interesting.

Bateman Mfg. Co., Grenloch, N. J.—This firm manufactures the well-known Iron Age line of implements, wheel hoes, etc., and its 1905 catalogue tells of the improvements which are being made in this line. The catalogue is complete in every respect and is well printed, with half-tone cuts showing many styles of implements manufactured. This firm makes a specialty of potato machinery, such as planters, sprayers, diggers, etc., and the book will interest everyone interested in growing potatoes. The line of garden and field cultivators is complete, and all are fully described.

$10.30 NEW STEEL RANGE.

FOR $10.30 we will sell this new, handsome, nickel trimmed, 1905 model, square steel range with reservoir or closet, as illustrated, a trifle extra. For full particulars, how we make our steel ranges thicker, heavier, stronger, handsomer and better than any other ranges made in the world; for our three months' free trial offer, safe delivery guarantee, pay after received terms; for picture of our foundry, the largest stove foundry in the world, cut out and return this ad, and our Free Stove Catalogue of everything in steel and cast iron stoves and ranges will be mailed at once. With our Free Stove Catalogue you get the most astonishing stove offer ever heard of.

Address SEARS, ROEBUCK & CO., CHICAGO, ILL.

Read This and Do It Quick

The Modern Farmer,
Green's Fruit Grower,
Aricultural Epitomist,
The Mayflower, and
Ten Beautiful Bulbs,

ALL ONE YEAR, 50c. Good only a short time. Address,

Write for other clubbing OFFERS and a FREE SAMPLE COPY of THE CLEANEST FARM PAPER ON THE CONTINENT. WE CAN SAVE YOU MONEY ON ANY PAPER.

EMERSON ABBOTT, 307 N. 3rd Street, ST. JOSEPH, MO.

EVERGREENS

Norway Spruce, Arbor Vitae, Balsam Fir, Scotch Pine, Blue Spruce, etc. All kinds very cheap. Special hargains in Seedlings by mail. Price List Free. Mention The Fruit-Grower.

HARVARD NURSERY, Harvard, Ill.

WANTED BY SELIGMAN (MO.) NURSERIES

Buyers for 1,500,000 berry plants; 40 varieties S. B., 14 of B. B., 8 of Red R. B., 6 of Black R. B., 4 of D. R.; also fruit trees, etc., all cheap

TELEGRAPHY

Thoroughly and quickly taught. Tuition $30. Position secured. Catalogue free.
SHARP'S SCHOOL OF TELEGRAPHY, P. O. Box 1594, Huntington, Ind.

Farm Canning Machinery

Complete, $10, $25, $50, $100, $125 and upwards. Make money by canning for market. Book free. Modern Canner Co., Bridgeport, Ala.

We Will Buy

A 50c. Bottle of Liquozone and Give it to You to Try.

We want you to know about Liquozone, and the product itself can tell you more than we. So we ask you to let us buy you a bottle—a full-size bottle—to try. Let it prove that it does what medicine cannot do. See what a tonic it is. Learn that it does kill germs. Then you will use it always, as we do, and as millions of others do.

This offer itself should convince you that Liquozone does as we claim. We would certainly not buy a bottle and give it to you if there was any doubt of results. You want those results; you want to be well and to keep well. And you can't do that—nobody can—without Liquozone.

We Paid $100.000

For the American rights to Liquozone. We did this after testing the product for two years, through physicians and hospitals, after proving in thousands of different cases, that Liquozone destroys the cause of any germ disease.

Liquozone has, for more than 20 years, been the constant subject of scientific and chemical research. It is not made by compounding drugs, nor with alcohol. Its virtues are derived solely from gas—largely oxygen gas—by a process requiring immense apparatus and 14 days' time. The result is a Liquid that does what oxygen does. It is a nerve food and blood food—the most helpful thing in the world to you. Its effects are exhilarating, vitalizing, purifying. Yet it is a germicide so certain that we publish on every bottle an offer of $1,000 for a disease germ that it cannot kill. The reason is that germs are vegetables; and Liquozone—like an excess of oxygen—is deadly to vegetal matter.

There lies the great value of Liquozone. It is the only way known to kill germs in the body without killing the tissue, too. Any drug that kills germs is a poison, and it cannot be taken internally. Every physician knows that medicine is almost helpless in any germ disease.

Germ Diseases.

These are the known germ diseases. All that medicine can do for these troubles is to help Nature overcome the germs, and such results are indirect and uncertain. Liquozone attacks the germs, wherever they are. And when the germs which cause a disease are destroyed, the disease must end, and forever. That is inevitable.

Asthma	Hay Fever—Influenza
Abscess—Anemia	Kidney Diseases
Bronchitis	La Grippe
Blood Poison	Leucorrhea
Bright Disease	Liver Troubles
Bowel Troubles	Malaria—Neuralgia
Coughs—Colds	Many Heart Troubles
Consumption	Piles—Pneumonia
Colic—Croup	Pleurisy—Quinsy
Constipation	Rheumatism
Catarrh—Cancer	Scrofula—Syphillis
Dysentery—Diarrhea	Skin Diseases
Dandruff—Dropsy	Stomach Troubles
Dyspepsia	Throat Troubles
Eczema—Erysipelas	Tuberculosis
Fevers—Gall Stones	Tumors—Ulcers
Goitre—Gout	Varicocele
Gonorrhea—Gleet	Women's Diseases

All diseases that begin with fever—all inflammation—all catarrh—all contagious diseases—all the results of impure or poisoned blood.

In nervous debility Liquozone acts as a vializer, accomplishing what no drugs can do.

50c. Bottle Free.

If you need Liquozone, and have never tried it, please send us this coupon. We will then mail you an order on a local druggist for a full-size bottle, and we will pay the druggist ourselves for it. This is our free gift, made to convince you; to show you what Liquozone is, and what it can do. In justice to yourself, please accept it today, for it places you under no obligation whatever.

Liquozone costs 50c. and $1.

CUT OUT THIS COUPON

for this offer may not appear again. Fill out the blanks and mail it to The Liquozone Company, 458-464 Wabash Ave., Chicago.

My disease is .....
I have never tried Liquozone, but if you will supply me a 50c. bottle free I will take it.

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.....

.....

M 110-2. Give full address—write plainly.

Any physician or hospital not yet using Liquozone will be gladly supplied for a test.

2,000,000 Strawberry Plants

To offer to WHOLESALE TRADE 60 varieties. PRICES LOW. NEW BEDS, THRIFTY PLANTS. FULL ASSORTMENT of NURSERY STOCK for RETAIL TRADE at prices that will save you the agent profits. 25-cent coupon FREE with FREE Catalog. We manufacture TREE BALERS and BOX CLAMPS. BEST NURSERIES use them. Send for circulars. We are located 50 miles west of Omaha. Write to

NORTH BEND NURSERIES,
North Bend, Nebraska

Trees

300 000 APPLES
75,000 CHERRIES
100 000 STD. PEARS
30,000 DWARF PEARS
40,000 PLUMS

50,000 Quinces — 100,000 Gooseberry
100,000 Currants — 150,000 Raspberry,
100,000 Blackberry. — 8 acres Strawberries
One-half Million Grapes.

Shade Trees, Shrubs, Roses, Ornamentals. The Department of Agriculture of New York will tell you San Jose Scale has never been found in this part of the State. Send today for our FREE Catalog quoting Wholesale prices to planters. Free to everyhody.

SHEERIN'S WHOLESALE NURSERIES
DANVILLE, N. Y.

Nursery Salesmen Wanted

In Oklahoma and adjoining territory. Cash commissions paid weekly. Exclusive territory. Apply at once to J. H. Shipman, Enid, Okla., general agent, or to

Cleveland Nursery Co., Cleveland, Okla.

CUMBERLAND AND HAYMAKER

Raspberry plants; also such reliable strawberry plants as Senator Dunlan, Splendid, Warfield, Gandy, etc., all from last year's planting. A few white Plymouth Rock cockerels from premium stock. Write for prices.

T. H. VORIES & SONS,
Wathena, Kansas.

18,000 Apple Trees

The best and hardiest for the planter; also a complete line of nursery stock. All Northern-grown. Prices the lowest. Send for list and see that we can give you good trees and save you money.

AURORA NURSERIES, Aurora, Ill.

Schoell Bros. Nurseries

Millions of first-class strawberry plants at prices that will make you buy. Large stock of Fruit Trees, Grape Vines, Currants, Gooseberries, Asparagus, etc., also fine stock of Everblooming Roses. Get our prices before ordering elsewhere and you will save money. Write for Catalogue and prices today.

Schoell Brothers, Box 65. Nauvoo, Ill.

TREES AND PLANTS

FREIGHT PAID TO YOUR STATION.

We have a complete line of fruit and ornamental trees, shrubs, vines and plants. Get our catalogue and price list. Our stock and prices are right. Give us your order, and we will do the rest. Remember we pay the freight.

ROEDER NURSERIES, Osceola, Mo.

Apple Trees

40,000 Ben Davis, Jonathan and other varieties, 4 to 7 ft.; write for prices. All kinds of berry plants and vines. Send me a list of what you want and let me make you price.

Simpson Nursery, J. O. Simpson, Prop.
Highland Station, Kansas.

6,000 FINE BEN DAVIS

Apple Trees

For sale below the cost of production. We must sell, at once, to clear the ground for spring planting.

GILES COUNTY NURSERY COMPANY,
Lynnville, Tenn.

Our Catalog Free

Contains many hargains in fruit trees and garden seed and just the information that fruit growers would appreciate. The title, "Chickasaw Trees Bear" carries with it much truth as well as success to the grower who plants our trees and seed. Terms to agents on application.

CHICKASAW NURSERY & SEED CO.,
Duncan, I. T.

SRRAWBERRY PLANTS

Senator Dunlap. Tennessee Prolific, Warfield, Michel's Early, Johnson's Early and others as good. Well rooted, carefully dug plants. Write for prices that will save you money.

J. Q. Snedeker, R. R. 5, Marshall, Ill.

FARMERS' ACCOUNT BOOK
Simple and Complete. Every farmer should have one. Saves you trouble, time and money. Any farmer can keep it. Mail prepaid on receipt of 50c. FARMERS ACCOUNT BOOK CO., Station D. Kansas City, Mo.

The King Grape.

Mention was made in the January Fruit-Grower of the introduction of the valuable new grape, the King. With this issue we are able to publish a cut of a bearing vine, four years from planting. This vine is one of 1,000 of the variety growing in the vineyards of the originator, and equally as productive. It is seldom that

size and beauty of fruit with such great productiveness are found in one variety of fruit. The size, both of the grape and cluster, is very large. The former averaging nearly an inch in diameter and often larger.

The clusters are heavy and compact. In fact, we have never seen northern grapes of any variety, which could approach the King in size of cluster. Many clusters, picked last season, were of a pound or more in weight and some of 23 and 25 ounces were exhibited at the state fairs. These with only ordinary care and cultivation. The original vine was found in a Concord vineyard belonging to Mr. Wm. K. Munson of Grand Rapids, Mich., in 1892. It is undoubtedly a "bud variation" of that variety. It has the same color and hardiness as Concord, but ripens several days earlier. It differs from Concord and is far superior in size of grape and cluster and greater productiveness. It has thin skin, tender pulp and few seeds, easily removed. The leaves are thick and heavy and the wood hard and short jointed. Thousands saw and admired the fruit at the St. Louis Exposition and various state fairs.

Doerr's Yellow Dent Corn.

The accompanying illustration shows the above variety of corn, originated by A. T. Doerr & Son, Harvel, Ill. This corn is claimed to be one of the best varieties introduced in recent years. Introducers claim that ears are perfect in color, standard in size, with well-filled tips and butts; rows very straight, kernels deep and wedge-shaped, and rich in protein and oil.

He Couldn't Get Along Without The Fruit-Grower.

I believe I have taken The Fruit-Grower since its first copy, and can testify to the steady improvement which has been made since then. I am interested in reading every copy, and wonder how any farmer or fruit-grower can get along without the information received from the paper. I congratulated The Fruit-Grower on the success it has achieved.

A. BRANSON.

New Sharon, Iowa.

A CHEAP HEART CURE.

A Norwich Lady Tells You What to Use at Home If You Would Cure Yourself at Once.

Alice A. Wetmore, Box 67, Norwich, Conn., says if any sufferer from Heart Disease in any form will write her, she will, without charge, direct them to the perfect cure she used.

We advise everyone interested to get this free information now, for Miss Wetmore is very positive it will lead to their complete cure.

The Fruit-Grower is the best paper I have ever seen. All who grow fruit in my immediate neighborhood take

the paper, so I had to go away from home to get up a club, but here it is, just the same—A. D. Clark, Yount, Missouri.

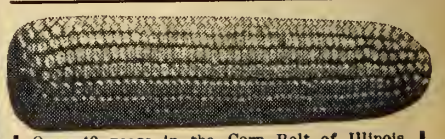
Pure Bred Seed Corn

BOONE COUNTY WHITE

Specially suited for the South and Southwest.

The Tucker Plant Breeding Farm

of the Johnstone Land Co. Write for our Free Corn Booklet and Prices. **Geo. M. Tucker, Ph. D., Mgr. of this Department.**
Blodgett, Scott County, Missouri.



Over 40 years in the Corn Belt of Illinois. If you are interested in

Pure Bred SEED CORN

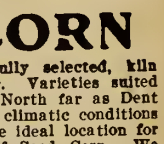
or if you want to buy Seed Corn in large or small quantities, that will make you money you ought to read our catalogue on corn breeding. It tells how we breed corn to a very high standard of perfection. It's worth reading. It's Free. We ship corn in ear, any quantity over 1 bushel. Carload lots a specialty. Write us.

A. T. DOERR & SONS, Harvel, Ills.
Reference: **Harvel Bank.**

Jumbo Corn

the great corn for cattle feeders Ears a foot long, rich in oil, easily broken or crushed. An enormous yielder. Made 119 bu. per acre on my trial grounds, outyielding all of the 84 other varieties except the White Elephant. If you want corn that will outyield everything in the neighborhood try these two. Samples free for the asking. I will also send you my new catalog of seed corn, seed potatoes, garden seeds, and in fact all kinds of seeds but the poor kinds.

HENRY FIELD, Seedsman
Box 15 Shenandoah, Ia.
"The ear seed corn man."



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Scientifically grown, carefully selected, kiln dried and shipped in the ear. Varieties suited for the great Corn Belt and North far as Dent corn can be grown. Soil and climatic conditions here combine to make this the ideal location for growing the finest quality of Seed Corn. We grow all the corn we offer and guarantee all sent out. Orders booked in rotation and shipped when wanted. Write for Seed Catalogue. Seed Department of

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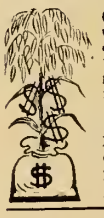

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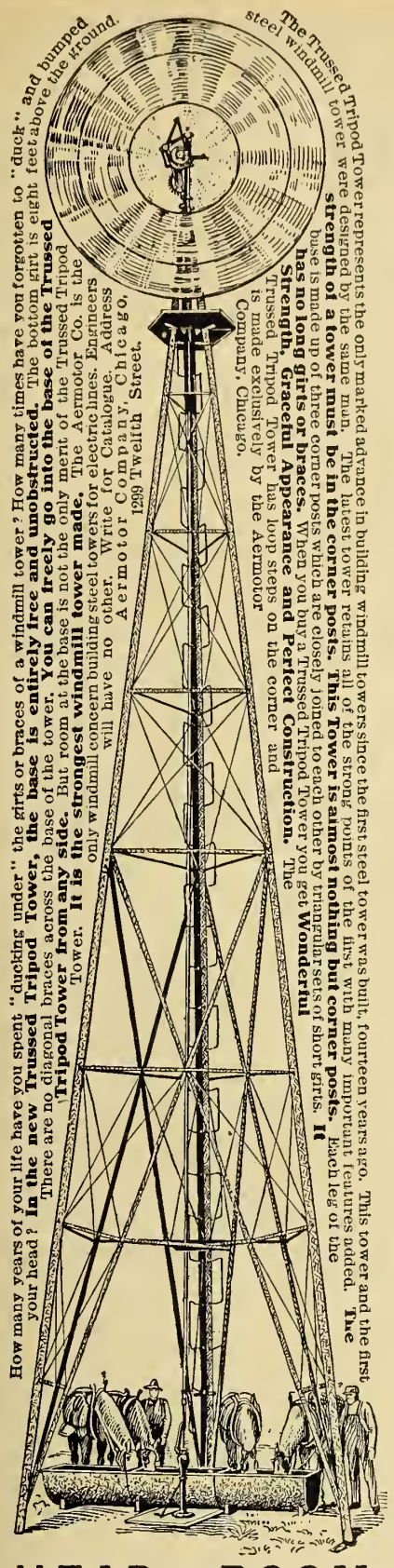

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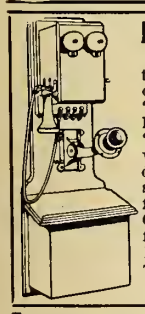

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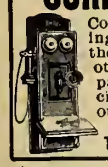

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Pennsylbania Horticultural Association Meeting

The Pennsylvania State Horticulture Association met in Harrisburg on January 17 and 18, President Howard A. Chase of Philadelphia in the chair. The attendance was larger than usual, the audience generally took more part in the discussions than ever before, and altogether it was voted an unusually pleasant and profitable meeting.

Representatives were present from Delaware, New Jersey and West Virginia, who took part in the discussions and added much to the interest of the occasion. The display of fruit, while not large, was very select, and showed the leading commercial varieties of apple and pear at their best. The South Mountain region sent some very handsome Ben Davis and York Imperial; the Pocono Mountain region sent Slayman, Pewaukee, Stark and Lawver; the Susquehannah valley sent Smokehouse, King, Northern Spy and Smith's Cider apples and Duchess, Lawrence and Beurre Clairgeau pears, and the foothills of the mountains, in the northern portion of Dauphin county showed some of the finest specimens of York Imperial ever brought to a meeting of the society. These were the leading varieties and gave one an excellent idea of the k nd of fruit that can be grown in the various portions of the state. Other varieties were there, such as Strinetown Pippin, Krauser, Domine, Willow Twig, Black Ben Davis, Gano and Mammoth Black Twig; also a jar of Yellow Gage plums from West Moreland county that seems to be practically unknown outside of that county, but which has proven very profitable there and was pronounced excellent by the committee of judges. One very noticeable feature of this exhibition was the entire absence of blemish of any kind, showing that our Pennsylvania growers have caught on to the spraying idea and are using their sprayers to good effect. Another very encouraging feature was the presence of a number of young men who attended all the sessions and who appeared to be there for business, as was evidenced by the interest they took in all the proceedings.

The following officers were elected for next year: President, Gabriel Hiester, Harrisburg; first vice president, Hon. W. T. Creasy of Catawissa; second vice president, Thomas Meehan, Germantown; third vice president, Dr. J. H. Funk, Boyertown; recording secretary, Enos B. Engle, Waynesboro; corresponding secretary, William P. Brinton, Christiana; treasurer, Edwin Thomas, King of Prussia.

A number of questions were discussed besides those on the regular programme. Ben Davis and Kieffer came in for their usual share of condemnation and for a time the argument waxed quite hot, as they had several staunch supporters. Our Jersey and Delaware friends, especially, were loud in their praise of Kieffer as a money-maker, but in spite of this it was shown that many Jersey planters are discouraged with the results of the past two years and are digging out their Kieffer trees.

Resolutions were passed favoring establishment of a division of horticulture in the department of agriculture, and a committee was appointed to wait on the governor and lay the matter before him. A resolution was also passed favoring such change in the nursery inspection law as would allow the inspection of orchards and public and private grounds, so that if anyone should carelessly allow the San Jose scale to spread unmolested on his property the inspector might enter on the property and the secretary of agriculture could compel him to use the proper methods for its control, thus insuring greater protection to the careful growers who do spray regularly and systematically.

Much indignation was expressed at the action of the secretary of the game commission in arresting and fining a member of the association for shooting a rabbit out of season that he found barking his young apple trees, and a committee was appointed to explain to the governor the interpretation his officers are placing on the present game laws, and ask his careful scrutiny of any new laws that may be passed this winter, to the end that the farmer may not be deprived of his right to defend his property from all depredations, whether they be man, beast or bird.

On the question of fruit packages it was generally agreed that in selecting a package we must consider the market we are sending to, and select the one most suitable. The box can only be used for fancy grades of apples and will be found most profitable for repacking cold storage fruit in winter.

The report of Prof. R. L. Watts, chairman of the general fruit committee, brought out the following facts: The rapid increase of the San Jose scale has restricted the planting of orchards in some parts of the state very perceptibly, and growers are considering more than ever before the adaptability of the trees they plant to their particular location. Ben Davis and Gano have lost their hold, except in the south mountain district, where they succeed well and have been found profitable. Baldwin has jumped to first place in the estimation of a majority of correspondents, and Smokehouse is gaining. York Imperial has been planted very extensively all over the state and in some places that will not prove congenial. These will no doubt be heard from later. Other desirable varieties are Rome Beauty, Smith's Cider, Grimes Golden, King and Summer Rambo.

The great loss of apples last fall on account of large crop and small demand just at that time has started inquiry from all parts of the state in regard to cold storage. The growers are beginning to realize that if they expect to realize a profit on fruit they must make arrangements of some kind to hold it at least until cold weather.

The pear crop was very desirable in different parts of the state. In the Susquehannah valley it was large, while in some other sections, notably in portions of Perry and Columbia counties, it was reported a total failure. The vote on most profitable variety placed them in the following order: Bartlett, Keiffer, Seckel, Clapp's Favorite, Duchess de Angouleme, Sheldon. Very few have found pears as profitable as apples, and the prevalence of blight is given in most cases as the reason.

The majority of Pennsylvania peach growers are discouraged. A series of crop failures, or partial failures, has caused them to condemn the business. Failure in many instances was evidently caused by planting the wrong tree in the wrong place but the severe winter of 1903-4 froze many buds and even froze the wood of many trees and weakened them to such an extent that they do not make a very good showing of fruit buds for next year's crop. A few growers who had thrifty young orchards, well cared for, report very profitable crops. Crawford's Late and Elberta were voted the most profitable kinds. York county has been suffering from the ravages of the scale, and the trees were in no condition to withstand the severe winter, so the York county peach growers were hard hit last season.

The crop of plums was the largest ever grown in the state and it came before the growers had made any spe-

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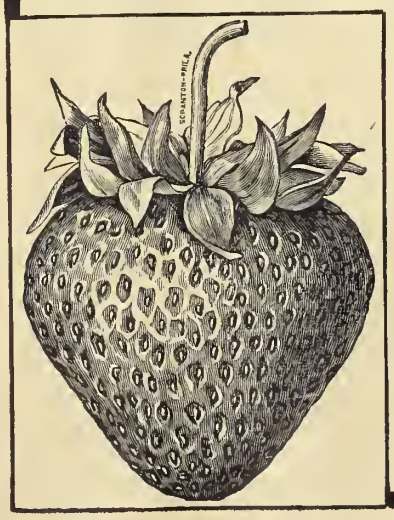

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cial efforts to find a market. The fruit was mostly thrown on glutted markets and prices realized were unsatisfactory. This, however, was not a case of over-production, but of improper distribution, and merely shows that it is time for our fruit-growers to begin to study the business end of their occupation. Quinces are no longer grown to any extent, borers and blight have proven so troublesome that they have been abandoned.

The cherry crop was above the average. Early Richmond leads as a profitable variety, with Gov. Wood second, English Morello, Black Tartarian and Large Montmorency following in their order named.

The crop of grapes was quite satisfactory in most counties. Concord, Niagara, Worden, Moore's Early were most profitable, in the order named. Commercial growers find spraying a necessity and practice it regularly and systematically.

In small fruits, red raspberries are voted more profitable than black, and there seems to be an increasing demand for the red berries. Blackberries are profitable near the larger markets, but the small towns are mostly overstocked with mountain berries. The cultivation of all kinds of small fruits is on the increase in most counties.

Hon. William T. Creasy read a short paper on the subject, "Should Quantity or Quality Be Our Aim?" He made some very timely remarks, which drew out considerable discussion. He said in part: "The fine fruits that were formerly consumed as luxuries only for the table of the wealthy are beginning to take their place among the ordinary supplies of every man's table, and this must grow from year to year, with an increased supply. The family that consumes a bushel of good fruit this year will want a larger quantity next year, since it would appear that both quantity and quality should be our aim, and in the great desire to secure quantity, if we let go quality, we will not need so much quantity. So of the two, I prefer quality, and so do you, at least for your own use; but when we produce fruit for sale we often think the people want nothing but quantity, when in reality, with a little better education, they also want quality. Then what is the effect? The fruit with quality will sell while the poor fruit must waste. And is this not about the condition of affairs we have arrived at in the fruit business in this state as well as in the United States? I believe the planting of fruit is being over-done and those who have planted for quantity only will find no market for their fruit at profitable prices. A few years ago fall and winter varieties of pears of high quality brought good prices, but the large planting of Kieffer drove out even quality. The people have lost their taste for pears and today the Kieffer is selling for little or nothing. I question very much whether the consumption of pears per capita today is as great as it was ten or twelve years ago. In our section of the state we had a big apple crop and thousands of bushels went to waste principally from two causes. First, there seemed to be no co-operation among the growers to dispose of their crop, and, secondly, many were of such poor quality that the only way to get rid of them was to let them rot under the trees. The apple market has been demoralized this year and it was quantity and not quality that brought about this result. Another cause of poor prices was carelessness in culture and carelessness in putting fruit on the market. In a fruit garden quality is still more desirable than in a commercial orchard, for here it is that we intend to take our own medicine. One bunch of good grapes is worth a bushel of poor ones."

He closed by hoping that the Lord would have mercy on the man who planted a Ben Davis apple or Kieffer pear and the nurseryman who sold the trees.

Mr. W. F. McSparran handled the question, "The Conservation of Soil Moisture in the Orchard," in a very instructive manner. He said in part: "The best method of conserving soil moisture must remain largely theoretical, for there are so many conditions of soil and other conditions that no rule may be laid down as the best for all to follow. I will doubtless be held as radical in making the statement that our crops, and those of the orchard especially, are almost entirely dependent upon the supply of stored soil moisture and not upon that gathered from the rainfall during the season of the crops growing. If I am correct in this claim, the importance of the most careful conservation of the moisture supply is paramount. If I am only half right, and the crop's success depends upon the current rains partly, and partly upon the earth supply, the importance of the latter is not lessened in its relation to the crop. It is obvious the orchard must have the earth moisture. It is plain that without intervening care of the orchardist the atmosphere draws upon this moisture to the loss of the crop and its owner, hence we come to say, how shall we best conserve the soil supply so it be not washed into the thirsty atmosphere?

"The first theory was that we shall arrest the loss by creating a non-conducting object between the moisture and the air. We should break the connection between the two and allow the moisture to only reach the atmosphere through the organisms of our growing crops or trees. We find this can be very effectually done by frequent cultivation of the soil and men have come to talk wisely, and some of them incessantly, of the 'dust mulch.' But the time has come when other men are to be found who question the wisdom, or at least the economy, of the 'dust mulch' for the young, growing, unshading orchard. We have discovered the soil bacterium and the more we study and learn about him the more we are inclined to modify many old ideas that were one time good enough. It appears now to be well established that our soil fertility largely depends upon the bacterial occupancy of it. The wise soil worker, therefore, if that be true, will use every economical means to maintain in his land conditions favorable to the existence and multiplication of these new-found friendly organisms; and it has become a matter of considerable doubt whether we are encouraging them when we are subjecting our unoccupied, unshaded soil to the frequent stirrings necessary to keep an efficient dust mulch through the long season of the summer heat. This is not intended as an argument that we shall stop the cultivation and allow the crust to form on the surface of the ground for fear we unsettle the operations of the bacteria. The dust mulch saves more in its moisture conservation than is lost from its bacterial disturbance; but the better plan seems to be to have the ground occupied by some crop that shall at once serve almost all the good offices of a mulch, create favorable conditions for soil bacteria and, as an incident to and in consequence of its growth, really add to the sum of the land's fertility. It is true that these crops use moisture in proportion to the success of their growth, but no marker of figures has yet come forward to tell us how much more moisture they use than is wasted from bare land, even when covered by

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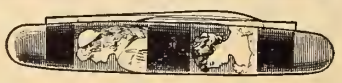

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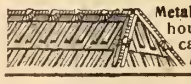

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the most orthodox dust mulch. The latter cannot possibly add anything to the fertility of the land, it can only arrest the action of capillarity; the farmer can do as much, while further enriching the soil actively and potentially and contributing that quality of humus to the land, so more moisture will be absorbed and held for plant use. It is true that in the discussion of such a topic as this we cannot get beyond the realm of theory and speculation, for climatic and soil conditions are changeable and variable as orchards and fields are numerous; but it is my deliberate opinion that the most logical method of conserving moisture for the orchard is by the agency of a growing crop, to be finally worked into the soil."

This paper drew out quite a discussion on the merits of the various cover crops. The preponderance of evidence seemed to be in favor of the southern cow pea as a leguminous crop; and where nitrogen was not wanted sand vetch and rye for this part of Pennsylvania. Able papers were read on "Fumigation of Nursery Stock" and "How San Jose Scale Travels," but we have not space at this time to give them in full.

"The Forest in Its Relation to Horticulture," was the subject for a very able address by Mr. Irwin C. Williams, deputy commissioner of horticulture. He spoke of the forest as a conserver of moisture. A treeless region is a dry country, sometimes arid and sandy. A dense forest cover shades the ground and prevents the effect of the direct action of sun light, rapid evaporation. The forest floor, if protected from fire, will soon be covered by a thick mulch, the roots of the trees penetrating deeply, form bonds to knit the soil together, as well as water conductors to carry rain beneath the surface. The mulch receives water and holds it as a sponge, prevents rapid flow-off and covers the forest floor as with a wet blanket. In a treeless region the water from rain runs off quickly, carrying large quantities of soil with it, gorging the streams and often doing considerable damage to the low lands. What does not flow off quickly evaporates and is dispersed by the winds. With the forest cover intact a small part of the falling water is immediately returned to the air by evaporation from the leaves and branches, some is absorbed, a part descends the trunks and, following the line of roots, reaches deep underground strata, while the remainder is held by the mulch and slowly allowed to sink below the surface. Very little of the rainfall thus runs off directly, and as a result of the above, springs are steadily fed, a moderately even flow is maintained and no unusually high water stages are followed by unusually low stages.

Among the functions of the leafy part of the forest is the exhalation of watery vapor into the atmosphere. It has been calculated from experiments that a square mile of average forest will exhale three and a third millions gallons of water in a month, or one hundred and ten gallons a day. In a dry season such an amount of vapor added each day to the atmosphere must have a beneficial effect upon all farms of smaller vegetation. For descending at night in the form of dew it furnishes a considerable part of the moisture necessary for ordinary growth. It is maintained by some that forests are conducive to rainfall. This, however, has not yet been conclusively proven. The forest is a soil former, and this may be of use to the horticulturist. A small wooded area will furnish many hundred loads of rich forest soil, which may be used to enrich their worn-out fields.

In some locations vegetation suffers from sand storms, and a belt of forest trees serves as a protection from these, serving as a great filter, allowing pure air to emerge, and preventing flowers, fruit leaves—the sensitive organs of orchard and garden plants—from being choked with dust.

It is believed that the forest has some effect in retarding early frosts. It is a well known fact that a cloudy night at the beginning of the frost season means freedom from frost for that night, the watery exhalations of the forest before spoken of condensing overhead in the form of low-hanging clouds, act as a blanket and prevent radiation to a certain extent. He closed with a strong plea to the horticulturists to aid in protecting the forests from spoilation and from fire, and urged that he educate himself and his children to look upon it as a great natural inheritance, to be unselfishly used, reverently honored, and carefully maintained.

The question of protection from fire was discussed at considerable length by the audience, and the conclusion was reached that the laws that have been enacted for the purpose cannot be fully enforced until public sentiment has been educated up to the point of making a general demand for their enforcement.

Mushroom growing has become a very important industry in Pennsylvania, and the subject was given a place on the program of the society. Mr. Thomas Rakestraw of Kennett Square read a most excellent paper on this subject, which will be discussed fully in the March issue of The Fruit-Grower, as that number will be specially devoted to gardening.

At a meeting of the State Dairy Union and the Live Stock Breeders' Association a resolution was adopted favoring the establishment of a state fair, and a committee was appointed to draft a bill and present it to the legislature providing for an appropriation sufficient to erect the buildings. This resolution was indorsed by the state board of agriculture and by the Allied Agricultural Organizations, which met in Harrisburg during the same week. G. H.

Stocks For Top-Working.

I see queries with reference to the Minkler apple being immune from root rot, and other possibilities with reference to using scions of hardy stocks for propagating on. I have been testing some, along this line, and while I have not met with the success I desired, I feel encouraged. I find the Northern Spy stock especially good for top-work, especially when side-grafted first year, then remove the root and transplant, as the scion has roots of its own; let trees grow one year more then top-work. I have also some on Minkler stock. Both seem less inclined or subject to root rot than any I have ever tried but one. I have a Russian variety under test that seems to be about the proper stock to use. I have offered stock thus treated for sale, but where growers can get good grafted stock for a little less they will rarely purchase the higher priced stock. Tendency seems towards cheap stock, thinking of the immediate cost, not the future of the tree. Therefore, not selling the stock I planted it, and I have a very handsome lot of trees; not a great many, but the kind that will do good service for years.

One of the most important subjects to consider is the cause and cure of the pear blight. If some one could just lift the veil and reveal a cure for the dread disease, he certainly would be a benefactor of whom it could be said, "He has wrought a good work." As all signs fail in dry weather, so all so-called remedies failed last year, and those who had large orchards of pears, wished they had small ones. The Keiffer, Garber, Koonce and Golden June suffered less than any for me, the two last had but very little.
Hannibal, Mo. WILL S. HALL.

This Will Interest Many.

F. W. Parkhurst, the Boston publisher says that if any one afflicted with rheumatism in any form, or neuralgia, will send their address to him at 30 Shawmut Bldg., Boston, Mass., he will direct them to a perfect cure. He has nothing to sell or give, only tells you how he was cured after years of search for relief. Hundreds have tested it with success.

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Meeting of New York Fruit-Growers' Association

The New York State Fruit-Growers' Association held its fourth annual meeting at Geneva, Jan. 10 and 11, with a large attendance of growers from all parts of the state.

Secretary W. L. McKay reported a membership of 1,197. Three crop reports as to the yield of 1904, compared with the yield of 1903, were issued during the growing season. President T. B. Wilson, in his annual address, estimated the value of these reports to the fruit-growers of New York at $100,000, or over, and added: "Had it not been for these reports the dealers would have maintained their position and secured the crops of many orchards at a low figure. However, backed by the organization, the members insisted upon a higher price for their fruit. Those growers also who were not members received a benefit by watching the members, and with them, holding their fruit for better prices. By greater care and attention on the part of the members to the inquiries of the secretary these reports can be made still more valuable.

"The reduction in the price of fertilizers and chemicals is of great importance to the fruit-growers of this state. This alone should be a sufficent inducement to every farmer to join the association. Not alone has a reduction of $2 or $3 a ton been secured from the company, but other companies have lowered their prices to members and non-members where competition has existed.

"The question of labor seems to be among the serious problems which confront the fruit-growers and the best methods of arranging for more labor at the proper time is a question yet to be worked out; in time, however, it will adjust itself. If growers would unite and build good storage houses they could handle their crops more economically; the fruit could be put into the barrels when picked and taken to the storage house. The sorting could then be done when the apples were sold. In this way a great deal of the work of harvesting might be done during the winter when labor is cheaper."

Mr. A. McNeal, chief of the first division of the department of agriculture of Ottawa, Canada, showed himself to be thoroughly conversant with conditions as they exist in the fruit world, and made some timely remarks upon "The Trend of Modern Fruit-Growing." He compared our methods of thought and action to the swaying of a pendulum; for awhile we move all in one direction, turn all our energies toward securing our end, then the pendulum swings back and we are just as eager in another direction. In fruit-growing the general trend of the discussions at meetings like this has been towards production. Now, while this is important, and always should receive proper attention, the time has come when we should consider distribution. He thought that the time of the annual meeting should not be taken up with minor details of work, but should be devoted to the discussion of the most important business questions. Have the details of spraying, pruning and cultivating and packing carefully and thoroughly discussed at the farmers' institutes, which should hold summer meetings in the orchard, where practical demonstrations should be given, and then when the expert fruit-growers meet in annual session, such as this, devote the time to the larger business questions. This meeting should be held in some central city, where ample hotel and hall accommodations can be had for the members. Their home society in Canada has established a permanent home in Toronto, and he believes more good will be accomplished by the adoption of this method. If we continue to devote all our time to the question of production and neglect the business end we will soon not be able to get the dollars, which is what we are after. We should have a more satisfactory arrangement with the commission man. An arrangement that would place us on an equal footing with him. As it is, the fruit-grower sends his purse to the dealer without knowing what is in it, lets him play with it awhile and then return it without an audit. Each fruit-growers' society should have a transportation committee at work all the year round looking after the interests of its members. The interstate commerce commission would greatly aid such a committee in the adjustment of transportation difficulties.

Trusts should be looked after. He does not oppose trusts; business can be done more economically on a large scale, but the fruit-growers should combine for mutual protection against those who are combined against us at certain points. Do not oppose them on points when our interests run together, but only when they diverge. This is not a subject for discussion at large meetings like this, but in committee meetings all through the year. Apple-growing in Ontario is moving north. It used to be profitable in Southern Ontario, as they grow many fine varieties, but they do not keep so well as those grown further north. Since cold storage has come into general use they are obliged to use it in order to compete with New York fruit. In the northern portions cold storage is not needed, so by growing apples there they are eliminating this item of expense. In the selection of varieties the trend is for fewer kinds, using only such as are specially adapted to surrounding conditions and as are sought after in the general market. Their societies do not offer prizes for more than eight or ten varieties and a strong effort is being made to control the nurserymen and prevent the destruction of a large number of novelties and restrict them to those that do well."

The delegate from the New Jersey Horticultural Society, was introduced. He reported that owing to the large crop and low prices of Kieffer pears for the past two years, many Kieffer pear trees are being cut down, a statement which was very comforting to the growers of fine pears who heard him.

Prof. S. A. Beach, horticulturist of the state experiment station, delivered a very instructive address on "What Constitutes a Variety," and after explaining how varieties are formed, by cross-fertilization, he dwelt at considerable length on sports and showed how liable we are to have bud sports on our trees which, in time, grow to limb sports—and in cutting grafts, if great care is not taken, we may have such a variation in fruit grown on trees from the some block in a nursery, the scions for which may have all been taken from one tree, that we are scarcely able to recognize them as the same variety. He emphasized the importance of taking all of our grafts not only from bearing trees, but from branches on those trees that have borne fruit that is nearest the type of that variety. It will pay to buy pedigreed trees, even at higher prices than ordinary, provided we are sure of the pedigree. When we find a limb sport that bears fruit of greater beauty, or higher quality, than the rest of the tree, we should take our grafts from that. Many varieties have been much improved by this method, and it is in this way that some nurserymen are able to offer (and to furnish) improved strains of many old standard varieties, that are greatly superior to the original.

The question of fruit packages was discussed by growers, dealers and shippers, and pretty thoroughly ventilated. The consensus of opinion seemed to be that the box is the package for the highest grade of apples and pears, both for home market and export, but cannot be used profitably for any other grade. Pears should be wrapped. The barrel is the best for the general crop. Many pears have been successfully handled in the half-barrel basket, but only the stiffest and most substantial wire-hooped basket can be used, and this cannot be used for export.

The following points seemed to be pretty clearly demonstrated in the discussion on varieties of pear:

Duchess is the only variety that has proven universally successful, grown as a dwarf.

Seckel, grown as dwarf, are larger than those from standard trees.

The Worden-Seckel is perfectly distinct from the old Seckel, but has quality nearly, if not fully, equal to the latter, and owing to its larger size sells well. The growers in the Hudson river valley are much pleased with it.

This discussion brought out the importance of considering the adaptability of soil and location to certain varieties. The Seckel pear grows in its

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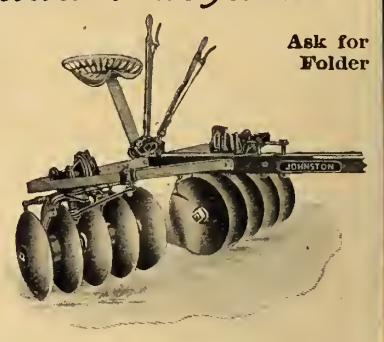

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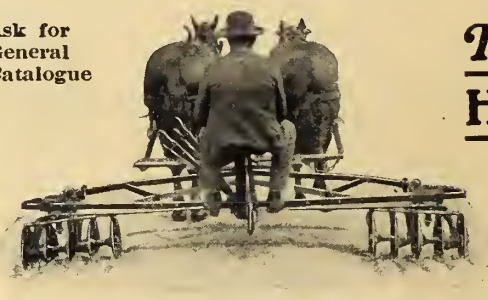

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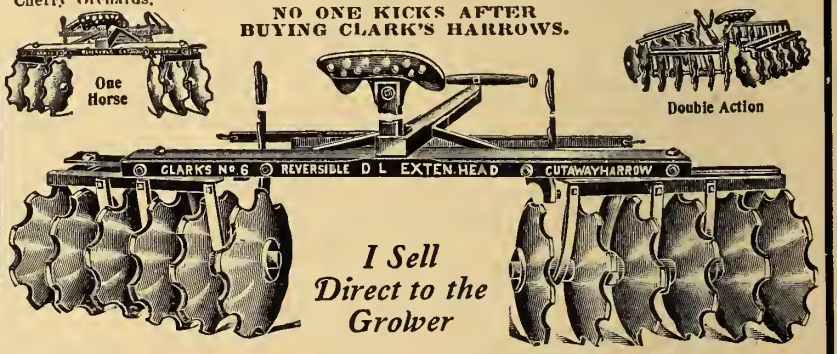

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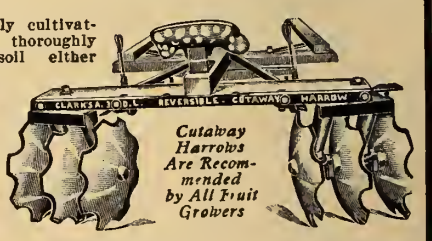

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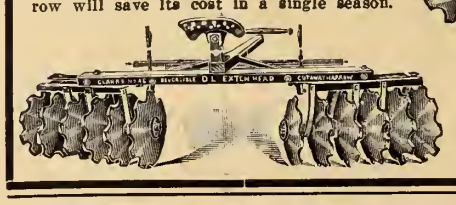

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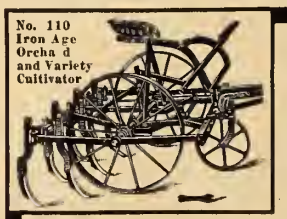

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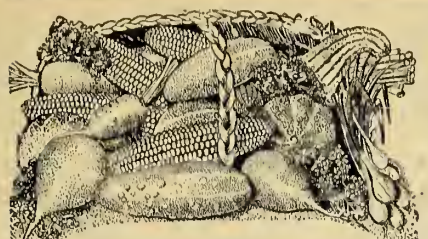

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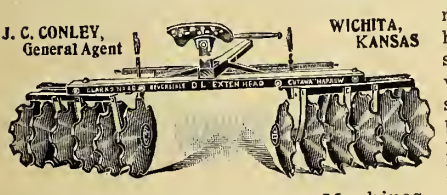

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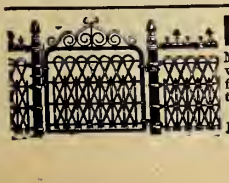

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greatest excellence on one side of Geneva lake, while on the other side it does not succeed at all, and the trees have mostly been regrafted to other sorts.

Duchess is the best export pear; the one most eagerly sought after in the English market.

At the request of the president, Mr. Wood told how he manages to grow such uniformly fine crops of pears. He said in part:

"Pears should be thoroughly cultivated to the end of July, then be seeded to clover; mammoth clover has succeeded best on loam or clay and gravel. In winter trees should be fed with barnyard manure. The pear requires closer attention and quicker judgment than the apple, for when the sucking insect comes it works rapidly and causes a loss not only for that year's crop, but injures the fruit buds for the following year. The important point is to keep a succession of perfect fruit buds coming on. The psylla is a very small insect that must be treated with whale oil soap as soon as hatched; usually the tree must be sprayed five times. In dry years this insect is most destructive and unless promptly treated with whale oil soap will destroy the entire crop. Pears are subject to scab as well as apples and must be sprayed with Bordeaux mixture. Duchess requires more pruning than any other kind; it should be topped back in June, interfering limbs are cut back in winter. He does not advocate cutting back a standard pear when it gets to bearing; it will then arrange itself and stop growing rankly. Bartlett is his favorite standard. Anjou has proved a failure as dwarf.

In answer to the question, "Can the old Seckel be improved in size by working on other varieties?" Mr. Wood replied: "Yes, we do succeed for a few years, but it soon reverts. For the past two years we have adopted the Worden-Seckel."

The question was asked, "Should hogs be allowed to run in the orchard?" and it excited considerable discussion. Although a number of instances were cited where uniformly good crops of apples had been grown on orchards used as hog pastures, it was generally conceded that, as a rule, intelligent man-culture is better than hog-culture.

Prof. L. R. Taft of the Agricultural college of Michigan, in an address on "Commercial Apple-Growing," laid particular emphasis on the following points: New York and Michigan can grow apples of high quality, and in future we should look forward to the production of high quality rather than quantity. In starting a commercial orchard all surroundings must be considered. Many failures have resulted from selection of wrong sites. One chief cause of failure is too wet land. In selecting a location we should consider: First, land should be well drained. Second, it should have a fair supply of humus. Third, location should be elevated and rolling, giving surface drainage and allowing circulation of air, thus warding off frosts and lessens danger from apple scab. While the smaller trees may be best under some conditions, two or three-year-old trees have, as a rule, given best results. As for kind of trees, choose those hardy and productive ones that have high quality.

The prime supports of the young orchard are plant food, spraying and pruning. To furnish plant food start with a clover sod turned down; avoid those fertilizers that promote too much wood growth. Be liberal with potash and phosphoric acid. Use clover for nitrogren. Wood ashes are ideal to supplement barnyard manure. Whenever the tree is not making an annual growth of one foot it needs nitrogenous plant food. Cultivation in the fore part of the season conserves moisture and releases plant food. He would recommend cultivating during the time up to August 1. He does not approve of sod orchards. You cannot expect to raise a good crop of apples from a tight, blue grass sod. What we understand by a sod orchard is, in reality, a mulched orchard. Here we bring about nearly the same conditions as when we cultivate. The arguments in favor of sod, or mulched, orchards are the trees are hardier, more fruitful and the fruit is higher colored. The danger connected with the mulched orchard is that we are liable to allow a tight sod to form. It is better to cultivate early and use a cover crop. When nitrogen is not needed, barley and oats sown as late as August 1 have given best results of any non-leguminous crops. The principal danger in cover crops is mice. Thousands of trees have been killed during the past few years. There is also danger from fire; in a number of cases fire has spread through the orchard, injuring the trees.

Spraying—For the control of the ordinary fungus diseases and insect pests we have settled down to one line of spraying: Bordeaux mixture and an arsenate. In practice the best results have been obtained from Bordeaux, containing an excess of lime, as this insures protection to the foliage. It has been found that, although carefully and thoroughly sprayed early, many winter apples are affected by codling moth, but by spraying as late as August 1 this injury may be prevented. Careful investigation has shown that about one-tenth of the eggs are layed on the leaves, and by spraying late the worms eat the leaves and the poison with it. For San Jose scale, lime, sulphur and salt, when properly applied, has proved successful. Not one farmer in fifty has done the work properly and thoroughly, but whenever we find one who has we hear satisfactory reports. In the preparation of lime, salt and sulphur wash for large orchards a steam cooker of some kind will be found most economical and satisfactory, but for small orchards it may be prepared just as well by the use of caustic soda.

In order to add to the interest of the exhibit and heighten its educational features the society was enabled, through the kindness of a friend, to offer a series of prizes for the most intelligent and consistent judging of fruits, to be competed for by students of the pomological class of the State Agricultural college at Cornell university. The fruit to be judged consisted of first, a collection of commercial varieties of apples and pears, ten of the former and five of the latter; second, a collection of dessert apples and pears, five of the former and three of the latter; third, single plate best commercial apples; fourth, single plate, best commercial pears. In scoring the fruit the judge in this instance was not to consider qualities of tree. The fruit was taken on its merits as it appeared on the table. The prizes were: First, $6; second, $4; third, $2.

The fruit was first scored by Prof. R. L. Taft, one of the most expert judges of fruit in this country. The contestant whose average came nearest that of Prof. Taft was awarded first prize, the second and third prizes followed in regular order. The result was as follows:

First prize, W. S. Loup, Northeast Pennsylvania, average of card, 91.50.

Second prize, C. A. Rogers, Birgen, N. Y., average of card, 90.50.

Third prize, W. A. Bassett, Interlaken, N. Y., average of card, 89.75.

Prof. Taft's card averaged 92.25.

The accuracy with which these young men scored this collection reflects great credit upon their instructors as well as upon themselves. The introduction of this feature into the proceedings of the society added greatly to the interest of the meeting and drew a great many young men

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Kill it with the original and only "LION BRAND"
Lime, Sulphur & Salt

Concentrated and scientifically prepared. Ready for immediate use by simply adding water.

Low Cost! Effective!! Put up in Quarts, Gallons, Five Gallons, One-half Barrels and Barrels. Our business is to manufacture Agricultural Sprays and Fungicides, Paris Green, Kerosene Emulsion and Bordeaux Mixtures.

In ordering specify "LION BRAND"—Manufactured by

THE JAMES A. BLANCHARD COMPANY, NEW YORK

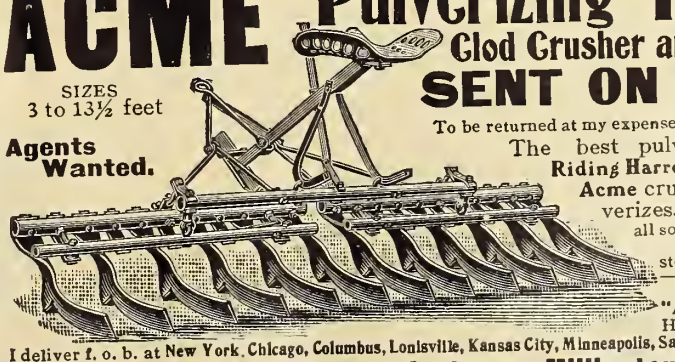
ACME Pulverizing Harrow

Clod Crusher and Leveler.

SENT ON TRIAL.

SIZES 3 to 13½ feet

Agents Wanted.



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Made entirely of cast steel and wrought iron—**indestructible.**

Catalog and booklet. **"An Ideal Harrow"** by Henry Stewart sent free.

I deliver f. o. b. at New York, Chicago, Columbus, Louisville, Kansas City, Minneapolis, San Francisco, Portland, etc.

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PLEASE MENTION THIS PAPER.

who otherwise would not have been there.

Prof. John Craig, of Cornell, explained the difficulty of udging anything accurately without carefully analyzing it and grading its several properties according to a previously-arranged scale of points. Fruit is judged according to two standards, on the basis of 100 points, as follows:

	For Commercial Purposes.	Dessert.
Form	10	10
Size	15	10
Color	20	20
Uniformity	20	15
Quality	15	25
Freedom from blemish	20	20

In considering form we must take into account the locality in which the apple is grown. Thus an apple that is quite flat in the east becomes elongated more and more the further west it is grown, and when it reaches the Pacific coast we would scarcely recognize it on account of its much elongated form.

The association held its session in Smith's opera house, while in the armory of the Thirty-fourth separate company, about three squares distant, was held an exhibition of fruit, machinery for spraying, ladders for picking fruit, packages for marketing fruit and other things of interest to the fruit-grower.

J. A. Maney, foreman of orchard at the state experimental station, had charge of the station exhibit, which consisted of 300 plates, including, of apples, 225 plates, 156 varieties; 16 varieties of pear; 4 of quinces, and 55 of grapes. In this large collection the fruit was all well grown, highly colored and free from blemish of any kind, giving evidence of the intelligent care that is bestowed on this important department at the station. In addition to this collection was another table 100 feet long filled with beautiful, high-colored perfect fruit, brought by fruit-growers from all over the state, while in the center of this table were a few boxes of Spitzenburg Yellow Bellflower and King, which showed absolute perfection, both in fruit and packing.

At one end of the building were three long boxes of potatoes, each containing all of the potatoes dug from one row, graded with the small potatoes in a compartment at one end. To show the actual result of an experiment in spraying for blight, one row was not sprayed at all, one was sprayed three times, one row sprayed five times. The potatoes were dug, assorted and measured in the presence of a committee of three from the fruit-growers association, and the result was that they yielded as follows:

Not sprayed, at the rate of 153 bushels per acre; sprayed three times, 344 bushels per acre; sprayed five times, 386 bushels per acre.

In the lot unsprayed the proportion of small potatoes was largely in excess of either of the others. The potatoes on exhibition showed much more clearly than any description can possibly show the value of spraying for blight, and caused much more comment by visitors to the armory than the most learned address could have done.

In the center of the floor, extending the length of the armory, were piles of apples, being the entire crop of thirteen trees, and were used to illustrate the value of one sulphur spray early in the season to take the place of the first spray with Bordeaux.

Prof. Percival J. Parrott performed the experiment at the state experiment station, selecting for the purpose thirteen trees, part Greening and part Baldwin. Some trees were not sprayed, others were sprayed over with sulphur wash and twice with Bordeaux, others were sprayed once with sulphur wash alone; another lot was sprayed three times with Bordeaux and arsenate. All the apples from the thirteen trees were picked and placed on exhibition, properly graded and labeled, thus forming one of the grandest object lessons that has ever been given to the people of the state on the efficiency of spraying.

Prof. Parrott, in his address on "Sulphur Washes, as Combined With Fungicides and Insecticides." said in part:

"We spray against fungus and insects by combining remedies for both, as Bordeaux mixture and arsenate, and thus control both at the same time. Three sprayings are usually recommended, first, for fungus and leaf and bud eating insects; second, for codling moth, and, last, for fungus and codling moth. We also spray peach and plum for leaf curl and brown rot and for curculio. Bordeaux, with an arsenite, while repellant to certain insects, is not so to plant lice and scale insects. For such we use contact mixtures. Sulphur washes do possess considerable fungicidal property. They are of some value to control brown rot leaf curl, blister mites, plant lice and scale. Peach trees that have been treated for scale have much less curled leaf and rot than untreated trees. In a field experiment made for control of peach leaf curl, the profit resulting in one orchard was found to be $183.28, in another $244, in another $232. People did not think it paid to spray for leaf curl. Now they spray for scale and it corrects both, and peaches are more profitable than ever before. The above experiment was tried to see if a similar combination might be made to correct codling moth, pear and pear apple scab, and brown rot in plum. The station has made extensive experiments, using 7,325 trees for the purpose, but has not as yet succeeded with apple and plum, but have succeeded with pear scab and pear blister blight. The apples on exhibition show that we can substitute one sulphur wash instead of the first Bordeaux spray during the dormant season with very good results; that is, by spraying with lime, sulphur and salt during the dormant season, then just after the blossoms have fallen, with Bordeaux and an arsenate, we can keep the scale, fungus, leaf eating insects and codling moth in control.

"Progressive farmers are fighting the scale, another element is doing nothing, or very little, in that line, so that, notwithstanding the efforts of the fruit growers, their orchards are in constant danger of reinfestation. Peach-growers in Northern Ohio have co-operative plants for making the lime, sulphur and salt mixture, which are quite a success, enabling them to secure a better mixture at less cost than if each went to the expense of erecting a plant."

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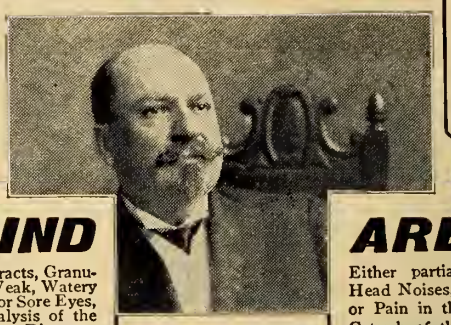

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Or have Failing Sight, Cataracts, Granulated Lids, Scums, Scars, Weak, Watery or Congested Eyes, Inflamed or Sore Eyes, Wild Hairs, Glaucoma, Paralysis of the Optic Nerve—or any other Eye Disease—

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Wonderful Cure of Blindness: Mr. A. G. Dobrensei, Masonic Home, Utica, N. Y., 76 years old, was almost completely blind from Cataracts and granulated lids. Owing to old age he had given up all hopes of being cured. Many Doctors had treated him without helping his condition. As a last resort he sent for Dr. Coffee's Absorption Treatment which he used for 6 weeks and obtained perfect sight. Write to him for full particulars.

Little Girl Totally Blind—Cured in 1 Month: Beryl Kelly, 6 years old daughter of Mrs. C. H. Kelly, Northwood Narrows, N. H., was totally blind from Opacity of the cornea or scum over the eye, with very little hope of ever being able to see—used Dr. Coffee's treatment for 1 month which absorbed the scums and restored her sight perfectly. She is attending school regularly and can see as well as anyone.

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It tells of a New Discovery which anyone can use at home and be cured. Fully describes Deafness in all its forms, what causes it and how it is cured. Tells how to cure Head Noises, Ringing in the Ears and Catarrh. Tells how to prevent Deafness. Gives full history of how thousands of people all over the world have restored their hearing with this wonderful medical discovery. Tells how Dr. Coffee restored his own hearing after being deaf for many years. **Send for Book today—it is free.**

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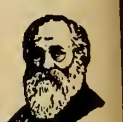
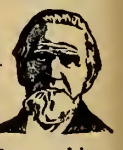
74 Years Old—Hearing Restored: Mr. Ell Snyder, of Altoona, Iowa, says: I am 74 years old, was afflicted with catarrhal deafness for a number of years was gradually growing deaf. I took a severe cold recently which settled in my head, making me almost totally deaf. Used Dr. Coffee's Absorption Treatment for two months and obtained perfect hearing.



A Boy's Statement which Reveals Wonderful Facts: Schultz Martine, of Storm Lake, Iowa, 14 years old, had attack of scarlet fever when 3 years old which affected hearing, followed by severe ear aches. 2 years ago an attack of measles caused complete deafness. Treated with many doctors, instead of improving his condition became worse. After years of suffering finally used Dr. Coffee's treatment and obtained perfect hearing.

80 Yrs. Old—Cured of Deafness: Washington Hunter, of Davenport, Neb., took a severe cold 2 years ago last winter which made him completely deaf in one ear and partly so in the other. After many unsuccessful attempts to obtain relief, commenced the use of Dr. Coffee's home treatment which proved beneficial from the start, after continuing for 3 months a complete cure resulted.



To the Readers: The proprietors of this paper have investigated Dr. Coffee, of Des Moines, Iowa, and know that he is a physician of highest standing and perfectly responsible for what he agrees to do. Those of our readers desiring one of these books should write to the doctor at once and kindly mention this paper.

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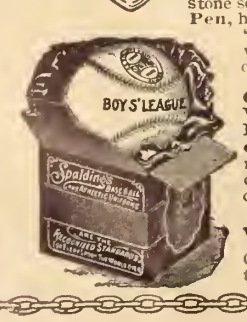

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SIRS:—Please send me the enclosed order of seeds. Last year was the first time I ever used your seeds, and found them to be the best I ever planted, and will never plant any other if I can get the Risdon seed.

Yours very truly, WM. E. TRENT.

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BIG CASH COMMISSION. We pay cash if preferred to premiums. Write today for our special offer.

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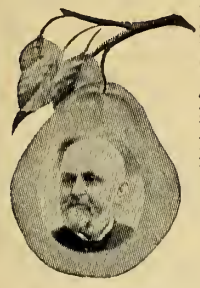

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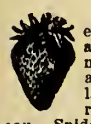

Are you interested in small fruit, either for home use, commercially, or are you selling plants? If so you cannot afford to be without our 1905 catalogue and wholesale price list. Dunlap, Beaver, Oom Paul, and 40 varieties standard strawberries; Mercereau, Snider and other blackberries; Cardinal, Haymaker, Cumberland and all the best raspberries. CATALOGUE FREE. Tells how we treated our berry beds and picked berries seven months.

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Infallible remedy for borers, scale, and all animal life inimicable to trees. Makes trees healthy and stimulates growth. Sold on guarantee. Write for particulars. Agents wanted.

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10,000 Cumberland Raspberry

25,000 Cardinal Raspberry; also Early Harvest Blackberry. For sale at low prices. Write

T. B. MILLER, SPRINGDALE, ARK.

A Word About Strawberries.

When I was a boy there were but two fields of cultivated strawberries in Hartford County, the richest agricultural county in the state, and these two fields combined were less than an acre in extent and five or six bushels a day was the full market supply. Now there are hundreds of acres, besides the family beds of a very great number of land owners, and in the height of strawberry season, 50,000 quarts, or more than fifteen hundred bushels per day, are required to satisfy the strawberry appetite of the people of this one small county. And practically the same story might be told of every other county in this section of the country. It's simply amazing this ever increasing production and demand for more and better strawberries. Strawberries are so easily grown, too, no long time waiting, just put the plants in the ground and in one year's time the rich, red harvest of luscious fruit is ready for gathering. The fun of strawberry growing is they may be grown successfully on about every variety of soil, except mud flats and gravel banks. Any home having only a small garden plot may have all the strawberries that can be consumed for a month in "season," if little care is taken to select varieties suitable to soil conditions. As a market crop nothing can equal the strawberry for quick returns and large profits, whether it be in a small way as a side crop of the farm or as a specialty on a larger scale. There always has been and always will be good money in strawberries, properly handled.

As to how much money can be made from one acre of strawberries it depends mostly on the man or woman who is behind the job; next on selection of varieties, followed by soil selection, feeding and culture. There has been a whole lot of idle talk about "pedigree plants," "plant selection," etc., but I notice that the best berries and most of them are marketed by those who give best soil preparation and culture, backed up by most liberal feeding. I get my best strawberries following a crop of cow peas, yet a good clover sod, or land heavily enriched with stable manure, will fit the land just as well, however, as the cow peas. The point is to have plenty of humus in the soil and then feed liberally with any well balanced fertilizer. It is most profitable usually to put the manure and labor for two acres on to one; only one-half as many plants will be required and the other acre can be growing a crop of cow peas or clover to better fit it for strawberries later on. I have for the fruiting season of 1905 two acres of strawberries that were planted on an over-turned clover sod, heavily enriched with stable manure, plants set 18 inches apart and all runners kept cut off through the past growing season. Frequent cultivation and hand hoeing has been given and in August and October plants thoroughly sprayed with Bordeaux mixture to prevent rust and now they have been thoroughly mulched for winter with stable manure. One, and possibly two, sprayings will be given in spring, and if I do not get a big crop of big berries and make a bigger profit on that field, I am going to be disappointed, and I do not like to be disappointed. Several acres more are in narrow, matted rows, where only a few runners were allowed to take root, while many acres more are thickly matted rows two or more feet wide.

There is one grand good thing about the strawberry plant, grow it under any system you like, or with no system whatever, and you are sure of much good fruit.

It has well been called "The lazy man's fruit," it thrives so well under greatest neglect and at the same time no fruit responds so quickly to best methods of soil preparation, culture and feeding. Take some of our standard varieties and the yield per acre may be all the way from 15 to 200 bushels, depending entirely on the man back of the job.

The man who succeeds in producing 150 or more bushels of strawberries per acre will find a gold mine in every acre of his land, especially if he lives in the northeastern section of the United States, where the best markets of the world are located.

Now, as to varieties, scarcely a strawberry that was a leader ten years ago stands in the first rank today and many of them are entirely off the list. There are two or more causes for this; one is the rapid deterioration of varieties by annual rusting of the plants and no spraying to prevent it.

Having tested practically every variety of strawberries grown within the last forty years and discarded one after another, as one newer and better of same general type appeared, I feel quite confident that in ten and perhaps five years from now, most of the varieties now catalogued will have passed their greatest usefulness and be dropped for the newer and better of that time.

There is no one best strawberry for all soils, latitudes and purposes, just as there is no one "best girl" for us all; so much depends, you know. Personally, for my sandy loam soil here in the Connecticut valley, I would stick pretty close to a very few varieties, such as Climax, Mead, Lady Garrison, Splendid, Sample, Glen Mary Fairfield, Paroon's Beauty and Dunlap. While my friend Welles, on heavier land ten miles away, banks on Brandywine, Pride of Cumberland, Auto, Nick Ohmer and Glen Mary.

Others of my patrons who put flavor above all else, get the most out of such varieties as Auto, Maxims, Nick Ohmer, Pennell, Palmer, Challenge, etc. If I were obliged to tie myself down to one variety for market and profit, it would surely be Climax. Yes, for a family berry, either. I count Climax the one best of all, but am glad none of us must be confined to any one variety, for by selecting proper varieties for succession we may have the delicious strawberries for a period of five to seven weeks direct from our own grounds.

People often spend much time and money on preparation of soil and in fertilizer and plants for a strawberry field or bed and yet fail of full crop returns on account of the red rust or leaf blight weakening the plants just at fruiting season. From widely extended observations I am led to believe that the average yield of strawberries in the northern states at least would have been doubled the past ten years had thorough spraying with Bordeaux been practiced each year. Many a strawberry field comes right up to the first picking in perfect order, then the blighting foliage quickly checks the further development of berries and the main crop is one of "nubbins," with brown, dried-up calyx, showing the destructive work of blight in a few short days. Somehow a suggestion of "spraying" sounds like a big job to a whole lot of people, while the fact is it is about as easy as rolling off a log and the cost, whatever it may be, is paid many times over by the extra yield in strawberries. For large fields a spray pump and two or three lines of hose or a pipe attached at rear of wagon to spray four or six rows as team is kept continually moving along will, of course, be best. Yet any old bucket and whisk broom will answer just as well as the most expensive spray outfit for spraying the family strawberry bed or even small market plots. I own a good many spray pumps, but its easier and cheaper to spray the test plot with a whisk broom than to get out a spray pump, and it requires no expert to do the job. One pound copper sulphate dissolved in hot water, two pounds best lime properly slacked and diluted with water, will make six gallons whisk broom Bordeaux, while to spray with fine nozzles on a large scale, the "5, 5, 50 Bordeaux," as recommended by the experiment station, is better. For currants and gooseberries, roses, small trees, likely to be infested with scale, the whisk broom spray plan is equally applicable to the lime, sulphur and salt mixture as it is to the Bordeaux.

J. H. HALE.

South Glastonbury. Conn.

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The Cardinal Strawberry.

Readers of The Fruit-Grower will remember that in our report of the meeting of the American Pomological Society at Boston, in 1903, we told of the ad interim committee of the society having recommended very highly the Cardinal strawberry, which was originated by Mr. George J. Streator, Garrettsville, O. The society at that time decided to not award the Wilder medal to any new fruits until they had been tested over a wide range of country, else this berry would have received the medal, on the recommendation of the committee. Mr. M. Crawford of Cuyahoga Falls, O., one of the best strawberry men in the country, visited the original planting of this berry, as a member of the committee on small fruits and he recommended it most highly. This berry will be introduced this spring by the Templin Company, Calla, O., to whom Mr. Streator sold the right to propagate the variety. The Cardinal berry was described in the Year Book of the United States department of Agriculture for 1903, which had the folloWng to say of the variety:

"Since Hovey gave to the world his famous 'Hovey Seedling' strawberry, in 1834, there has been an almost unbroken succession of new sorts of this popular fruit. Differing widely as these varieties do in their important charactertistics, it is now very generally agreed among fruit-growers that no one variety has yet been produced, or is likely to be developed, that will excel all others in all the qualities that go to make up a desirable variety. The highest flavor and adaptability to culinary use are rarely found in the same sort, while ability to endure shipment well is still less frequently encountered in productive sorts of good color, size, and flavor. The varieties of greatest commercial importance at present are doubtless those that combine in largest degree fair size and productiveness with firm texture, attractive color, symmetrical form, good flavor, opportune season of ripening, and adaptability to a wide range of climatic conditions.

"One of the most promising of the recently originated varieties that are now being tested in various sections is the Cardinal. This variety traces to one of a number of seedlings discovered by Mr. George J. Streator of Garrettsville, O., in 1896, in a portion of his vegetable garden where strawberries had previously been grown. These little seedling plants were carefully transplanted to a location where they could be brought into fruiting, and were held under observation for two years. The one afterward named Cardinal was from the start noticeably superior to the others in vigor of growth and healthiness of foliage, and when fruited was found to yield a good crop of very desirable berries. After several years of observation of its behavior, the originator secured plants of about forty leading varieties and planted a trial bed for comparison, in which the Cardinal was found by capable judges, in 1903, to surpass them all in vigor, productiveness and other important market qualities on the clay loam soil in Portage county, Ohio, where the test was made. It is considered well worthy of testing by commercial growers throughout the country.

"Description—Form, roundish, or roundish conical, occasionally slightly compressed and broadened, rarely necked; size, medium to large; surface, glossy, bright crimson, not fading; ripening evenly; seeds, small and mostly depressed; calyx, large, tenacious, pale green; flesh, quite firm and solid, salmon red, juicy, but apparently of good shipping quality; flavor, sub-acid, sprightly, with distinct aroma; quality, good to very good, especially for canning; season, Bubach, about the first week in June in Portage county, Ohio.

"The plant is pronounced a very vigorous grower, with foliage resistant to rust, and an abundant plant maker. The blossoms are imperfect. The fruit is borne on strong trusses and the variety is reported to be enormously productive."

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After the Packing Trust.

Everybody's Magazine, which has been publishing a series of articles on the workings of Wall Street, in its bleeding of the people, has now undertaking a new series of articles by Charles E. Russell on the trusts of the country. The series begins in the February number and relates to "the greatest trust in the world," as the beef trust, or packing-house trust, is styled. This makes interesting reading to farmers, who have suffered from this trust on the one hand, while the consumer has suffered on the other. In the pening chapters Mr. Russell says:

"With the formation of the American Beef Trust a few years ago, the whole vast produce trade of the country suddenly found itself confronted by a condition under which an irresponsible and intangible power was able to assess whatever charges it pleased for a service once performed free. The trust steadily adjusted the screw on the railroads and squeezed out an enormous and wholly fraudulent tribute. The refrigerator-car charges began to assume extraordinary proportions. On a carload of fruit from Michigan to Chicago, for instance, the trust's exactions were often as great as the total freight bill. Operations were extended in all directions . It compelled the railroads to do its bidding in all particulars. It blacklisted dealers that complained. It compelled the shipment in its own cars and at its own rates of products that might have easily gone in ordinary cars. It compelled the railroads to pay mileage rates for hauling its cars, whether the cars were full or empty. It multiplied its cars, its lines and its operations. It went into poultry, live and dressed, and absorbed that market. It began to tamper with the trade in dairy products. wherever its operations extended, the consumer began at once to feel the baneful influence of its presence; the producer became the victim of an elaborate and perfect system, by which he was alternately encouraged to extensive production and confronted with ruin by an arbitrary and a forced reduction of prices.

"Under this system, which of course took advantage of and shaped itself by the aid of natural conditions, agricultural industries greatly changed. A large part of the Middle West ceased to be a corn-selling and became a corn-feeding region. Cattle fattening became the principal interest. Almost every farmer became a borrower at his local bank to carry on these operations . For a few years the business thrived, the profits were good. Then the trust arbitrarily forced down the price of cattle; thousands of stockmen were ruined, banks failed, farm mortgages multiplied, and a blight fell upon the whole cattle-raising region."

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TEMPLIN CO. TO INTRODUCE THE CARDINAL STRAWBERRY.

In connection with the description of the Cardinal strawberry attention should be called to the fact that the Templin Company, Calla, Ohio, has purchased the right to propagate and sell this variety from the originator, and will introduce it this spring. See the advertisement of this company on page 4 of this issue.

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Send Your Address and Get A Dollar's Worth FREE.

I have a sure, quick and lasting cure for Rheumatism. I cure it by means of Vibro Discs, a wonderful new appliance which is used exter-

nally and draws out the poison from every part of the system. It is the wonder of the age, and a godsend to Rheumatic sufferers. There is nothing like it, and nothing equal to it. It banishes pain as if by magic, and conquers this dread disease in all its cruel forms and stages. It is safe, simple and convenient for home use and roots out the acid venom so thoroughly that no relapse or fresh attack can occur. Prove these claims yourself by testing the remedy at my expense. I will send you, absolutely free, four of these Vibro Discs—

a full dollar's worth—if you simply send me your name and address. This is an absolute gift, and I shall neither ask nor accept pay for it now or in the future. Can you afford to continue in pain and misery when you can get this marvelous new and guaranteed treatment simply for the asking? Write me to-day and I will send you the treatment at once and with it an elegant illustrated book on Rheumatism, all free and prepaid. Don't send any money—not even a postage stamp—but send your name and address THIS VERY DAY.

PROF. S. M. WATSON, Dept. 84, Battle Creek, Mich.

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Have made an unusually fine growth. Send list of wants for **Special Prices.** We can please you.

EUGENE WILLETT

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DRS. THORNTON & MINOR, 1003 Oak St., Kansas City, Mo. and 3969 Olive Street, St. Louis, Mo.

Poultry Department

Winter Egg Production.

James Dryden, Utah Experiment Station.

The profitable hen is the one that lays in winter. The successful poultryman is the man who gets eggs in winter. To get eggs in winter is the difficult part of the business, and that is what makes it the profitable part. The secret of winter egg production has baffled the world. It is no easy matter, otherwise eggs would not sell for 30 and 40 cents a dozen in winter when they sell for only 10 cents in summer. There is little competition in the winter and for that reason the business is profitable then. In spring and summer every old hen from Maine to California is doing her best to outlay every other old hen, and for that reason it is not profitable then. I mean, it is not so profitable, because eggs may be produced with profit at 10 cents a dozen. But the big profits are in winter; that is, if you can get the eggs. If you don't get the eggs in winter, then what little profit you make in spring and summer goes to make good the loss in winter—goes to pay for the feed they eat in winter. The business of producing eggs in winter is no child's play; the fact that eggs sell for three or four times as much in winter as at other times is argument enough that it is no easy matter. Many bright men have tried it and failed. A dairyman can produce butter about as well in winter as in summer. The price of butter is about the same winter and summer, but a special skill is necessary to produce eggs in winter. Men who have made a success of other lines of business have made failures in winter poultry keeping. When a man fails to make his hens lay in winter it is no evidence that he would not make a success in growing lucern or potatoes or hogs or in teaching school.

The first thing to learn then is that the production of eggs in winter is no child's play. What then is the secret of winter egg production, if there be a secret?

The first thing you have to study is the hen herself. She has a secret and she guards it pretty well. If she could only talk the problem would be solved. What a lot of trouble would have been saved if only Biddy had been born with a voice by which she could make known her wants, even though she did use it talking about her neighbors sometimes. As it is, we have to guess a good deal. If she could talk the first thing she would say would probably be: "Stop up the cracks in the poultry house and make it a little warmer." Or, perhaps, she might say: "If you want me to lay an egg in winter you must give me a house to live in. I don't mind sleeping not laying." That is the first secret, if there is a secret. It is no doubt true that hens can live without houses and be healthy. It is very often true that hens that roost on the trees at night and wade in snow during the day are healthier than those kept in modern houses. But that is due more to the kind or type of house, or to the management. In either case there will be no winter eggs.

In regard to housing it may be necessary to say, first, that buildings are necessary to get good results from our poultry in winter. Judging from the way some people treat their fowls they do not think a house is necessary. When it comes to chickens they believe in liberty; they believe in giving them the liberty of the boxelder and the dashboard during the night and the dunghill during the day, and they are surprised that their hens do not lay eggs when the temperature is below zero. The house is the first thing that should be provided. You say it costs money. Of course it does. The question is will it pay? It will pay, for several reasons. One reason is it will cost less to feed a hen that is comfortably housed than one that roosts in a tree in winter. The hen that roosts in the cold must eat more food to keep up the heat of the body than one that is properly housed. One purpose of food is to furnish fuel to keep up the heat of the body. Now, wheat is rather expensive fuel. If your wife in the absence of any other kind of fuel were to burn wheat in the stove, you would feel it was time to go to the canyon and get some wood. The hen that roosts out in the cold is burning wheat, and would it not be cheaper to go to the canyon and get some lumber and build her a house? It would be cheaper; it would also be more humane. Why does a hen stop laying when a cold wave strikes her? It is because the excess food that she has been converting into eggs has been turned into fuel to keep her from freezing to death. It is necessary that the hen should have warm quarters if good results are to be expected.

But warmth is not the only consideration in a building. Some "modern" poultry houses are warm, but they are death traps. Some people after treating their hens with indifference and neglect for a quarter of a century suddenly become penitent and to atone for all their past shortcomings build a fine warm house for their fowls. They double board it, paper it between, face it to the south, and put in a lot of glass windows, and close it up for the winter. The result is the hens suffer worse than they ever did. It is mistaken kindness. Instead of making Biddy more comfortable they have put her in a hot-house during the day and a refrigerator at night. The sun and the glass together heat the building during the day and at night the temperature drops. The temperature may be 40 or 50 degrees during the day and at night 20 degrees lower. This is too great a variation between night and day temperature. Besides it will be a very damp building. It is a fall in temperature that causes rain. it is the same thing that causes dampness in the building. Warm air holds more moisture than cold air, and there is always more or less moisture in the air. The air in a poultry house takes up a great deal of moisture when heated during the day. At night, however, when the air becomes colder the moisture condenses on the walls. If the building be well ventilated at night, or if the doors be left open, the moisture would escape, but then you would have the other trouble, to avoid which the house was built—cold. The colder the air, or the greater the fall of temperature, the more moisture will be condensed. It will condense more rapidly on the colder surfaces, such as the walls, and afterwards freeze. I have seen the frost become very thick on the walls during the cold weather.

That is the reason why so many of what we call our good poultry buildings are so damp and worse than the boxelder. Better let the hens roost out on the tree than put them in such a building, however costly and warmly it may be built. The trouble is there too great a variation between night and day temperature.

This difficulty may be overcome to a great extent by thorough ventilation during the day. Drive the moisture-laden atmosphere out of the house during the day by opening all the doors and windows especially during sunshiny days for it is the sun that causes the trouble. If you have such a house the thing to do is to ventilate it well during the day, to air it out thoroughly by opening doors and windows. Hens should have warm quarters, but not a hot-house part of the day, and especially should the house be free from dampness.

To answer occasional inquiries I have prepared the accompanying plan of a poultry house.

The illustration shows a house intended for a hundred hens, and if good hens are put into it and given good care, it will pay for itself in one year. It may be extended to any length desired or cut in two for fifty fowls.

It is fifty feet long and twelve feet wide, nine feet high at front and five feet at rear, and divided into two sections by a partition of wire netting, with two feet of boards at the bottom to keep the fowls from fighting through the netting. The walls are of one board thickness and the roof is shingled. There is a curtain door of good factory on each section of the front. These are hinged at the top, opening inwards and may be fastened to the ceiling. On stormy or very cold days these doors are closed, but at other times they are kept open. These doors are sixteen feet long and five feet high on each section divided into two for convenience in opening and closing. If it is desired to keep the fowls from getting outside there should be a frame of poultry netting placed over the opening. This should be fastened in such a way that it may be taken out when desired.

To keep the hens warm in cold nights, a closed roosting pen is built on the back wall three feet above the floor. This gives the whole floor space for the use of the hens during

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Ease of operation combined with satisfactory results are the essential points of a good incubator. The
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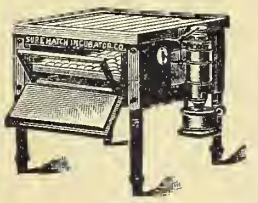
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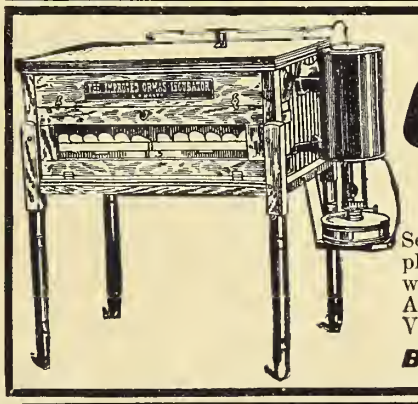
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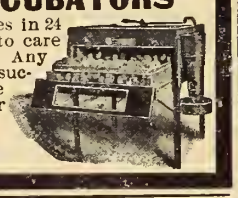

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Poultry and Fruit

By T. E. Orr, Beaver, Pa.

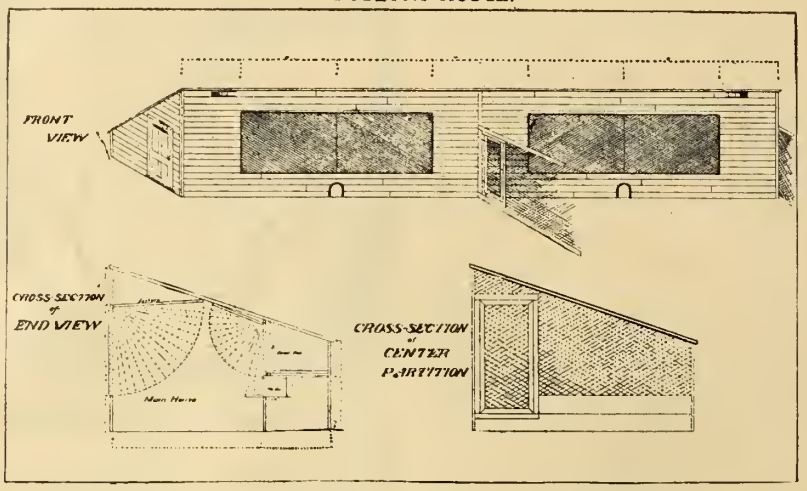
ARTICLE NO. II.

While our article in the January number protested that no argument is needed to convince anyone that poultry and fruit go well together, some illustrations are not out of place.

The two beautiful photographic reproductions in this issue, showing the White Leghorns of Messrs. White & Rice, Yorktown, New York, certainly prove that fine fowls are happiest and best if provided with shade in summer. These gentlemen formerly devoted most of their time, space and energy to truck and fruit farming. Some years ago they began keeping a few hens and they found them so profitable and so helpful in the fruit business that gradually they have been reducing the truck farming and increasing the poultry. Now they raise thousands of chicks annually. They market most of the cockerels as broilers when they weigh one pound each, and keep the pullets for early fall and winter layers. Their best fruit customers in New York city have become their best egg customers, and the prices they realize on fresh eggs sent in twice a week—all pure white and beautifully packed—would be esteemed fabulous by most western readers.

Another illustration of the advantages of the fruit and poultry combination that has come under the writers notice recently is that of E. S. Grable, Canton, O. Mr. Grable was a

PLAN FOR POULTRY HOUSE.



POULTRY HOUSE RECOMMENDED BY PROF. DRYDEN.

is a row of nests fourteen inches wide by twelve inches deep. Making the nests fourteen inches long would give twelve nests in each pen. The bottom board is extended at the back about six or eight inches for the hens to fly up onto and enter the nests. On the front there is a door or board hinged at the bottom. When the eggs are gathered this door is let down. The roost poles may be made of 2x4 ine, planed on all sides, with edges rounded off. They should be laid with the flat side down, and should be fastened without nailing, so that they may be easily removed for cleaning.

The building should face the south to get the benefit of the sun in winter and should be located on perfectly dry porous soil.

Such a house will give the fowls an abundance of fresh air at all times and warmth at night. The cost need not exceed $100 for labor and material.

That is one dollar per hen. A hundred dollars is a lot of money to put into a small hen house! The question is, will it pay? If those hundred hens are fair average layers and get intelligent care and feeding, they will pay in one year for all the food they eat and the cost of the house. That is they will lay an average of 10 dozen eggs each, or 1000 dozen all together; and these at 20 cents a dozen will bring in $200. The farmer can feed 100 hens for $50. At the Experiment Station the larger fowls eat from 75 cents to $1 worth of food per fowl in a year, when it is all paid for at market prices. On the farm, however, where so much food is going to waste, the cost need not be more than 50 cents per hen.

YOUNG CHICKENS AMONG TREES.

This article will be continued in March number, at which time will be taken up the subject of location of buildings, rations for laying hens, raising the layers etc. This article will appear in time to help Fruit-Grower readers get a better start for producing eggs next fall and winter than many of them have had heretofore.

Keep your subscription paid up.

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It's made on the right plan, it works right. It brings best results to the beginner as well as the experienced poultry raiser. **THE Successful** is the nearest of all the out and out automatic machines, both Incubator and Brooder. They can be depended upon under all conditions to hatch the most and brood them the best.

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100-Egg Capacity

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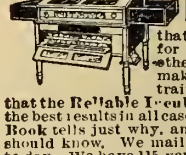

IT IS A FACT

that poultry pays a larger profit for the money invested than any other business; that anybody may make a success of it without long training or previous experience; that the **Reliable Incubators and Brooders** will give the best results in all cases. Our **20th Century Poultry Book** tells just why, and a hundred other things you should know. We mail the book for 10 cents. Write to-day. We have 115 yards of thoroughbred poultry.

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For several years thousands of enthusiastic poultrymen the world over have said of the Standard Cyphers Incubator, "You can't improve it." But the Cyphers Incubator Co. believes in advancement, and for 1905 announces several important improvements, especially in the regulation. Its new improved Thermostat and regulating device is the highest type of scientific self-adjustment, combined with durability and practical working value. **You can't make it go wrong.** This, with other patented, exclusive features enables the company to give the **strongest guarantee** ever placed on an incubator. At the same time, owing to improved facilities, the company is able to make a very radical reduction in prices for 1905. A number of new machines have been added to the company's line, including two new special incubators at $6.50 and $10.00.

Send to-day for the new Cyphers catalogue (228 pages, 8x11), describing not only the Standard Cyphers Incubators and Brooders, but more than 60 articles all manufactured by the Cyphers Incubator Co, and **guaranteed,** every one a real help to bigger poultry profits. The book contains more than 450 illustrations and special chapters by experts on profitable poultry keeping. Address nearest office and mention this paper Cyphers Incubator Co., Buffalo, N. Y., Boston, Mass., New York, N. Y., Chicago, Ill., Kansas City, Mo., or San Francisco, Cal.

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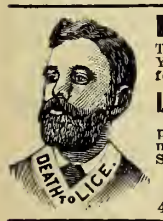

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promptly kills all insect vermin and makes sitting hens comfortable. Sample 10c; 100 oz., $1.00 by express.

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THIS LIGHTNING **Lice Killing Machine**

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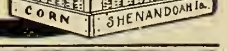
"The Ear-Seed-Corn Man."



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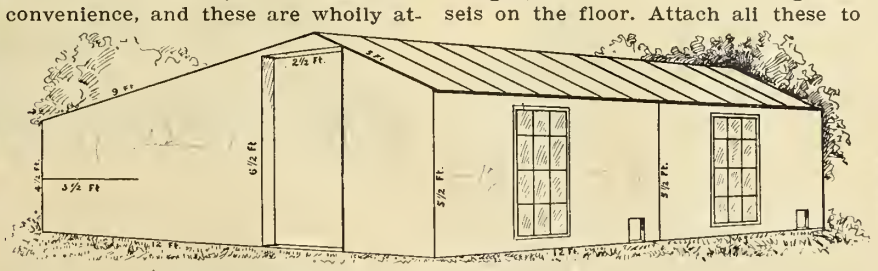
three miles from town and began the growing of small fruits. Being a natural fancier of fine fowls he at once started a small flock of Plymouth Rocks. The results have been most satisfactory and the combination is a complete success. Mr. Grable claims that his fowls are as great a benefit to his fruits as are the shade of the latter a benefit to the fowls in summer. He gradually established a high grade retail trade in the city of Canton for his berries and other fruits and soon found these same people anxious to purchase his fresh eggs and nicely fatted fowls at the highest prices. Mr. Grable has a small but growing family helping in his work. He hires his heavy plowing done, as he keeps but one horse and a delivery wagon. He does not pay out more than $50 per year for needed help, and his profits from his four acres average about $1,000 per year from fruit and $1,200 per year from poultry. Of course, Mr. Grable does not keep dung-hill, or mixed, fowls—only one variety, and he selects his best specimens for breeding. He sells eggs for the table eight months in the year; eggs for hatching at fancy prices, four months in the year. He markets only his less fancily marked specimens—the others he sells as breeders at fancy prices.

COLONY HOUSES IN ORCHARD.

The Poultry Buildings Necessary.

Many people are deterred from entering the poultry business because of the idea so prevalent that suitable buildings are necessarily expensive. This is not the case. The best henhouse we can plan for one hundred hens need not cost more than $100. There are many poultry houses that cost as high as $5, and even $10 per hen; but these elegantly-finished houses are no more comfortable than our cheaper ones. and in many cases much less so.

The three essentials of a poultry house are comfort, cleanliness and convenience, and these are wholly attained in the simple house herewith illustrated and described. This illustration shows an end view, or section; also a partial side-view of such a house. We wish to emphasize a few peculiarities of this house:



POULTRY HOUSE RECOMMENDED BY MR. T. E. ORR.

1. See that the rear posts are not more than 4½ feet high, the front posts not more than 5½ feet high and the apex of the roof not more than 7 feet from the floor. Far better to build the house lower, rather than higher.

2. See that the house is absolutely "air tight at the back" and without any ventilation except at the front. To do this, after erecting the framework, which is almost entirely of 2x4 lumber, the studding and rafters being three feet apart, cover with smooth boards, surfaced on the inside. Then cover the rear and roof of the house with the best three-ply tarred paper obtainable. Let each strip start at the ground line in the rear, run vertically 4½ feet, then up over the apex of the roof, terminating at the front eaves. So soon as the roofing paper is all on smooth, give it a coating of thin, hot tar—gas tar—another coat six months later, then one coat each year, and this house will be air tight at the back and will be good for at least a dozen years. In order that the paper may not be cut in turning the corners, it is well to round the corners at the rear and at the comb of the roof—with a plane. On no account allow any projection of the rafters at the rear. They may project in front if you wish, and it is not necessary to cover the front with tarred paper. The front may be ordinary siding and painted. If you use siding on the ends and paint them, put the paper on the inside.

3. See that the dropping board—which is 3½ feet wide and runs the entire length of the house—is built snugly into the rear wall, leaving no crack there, nor any in the dropping board itself. It should be smooth and tight. The perches, which are 2x4 timbers, flat side up, are six inches above the dropping board; so that when the fowls are on the perches they have a snug chamber ten feet back from the front, well removed from all draughts of air. True, their chamber is open on the front side, but being tight at the back and in the bottom, only the most delicate fowls will suffer from cold at night, as the heat of their own bodies is conserved and kept where it will do good—a thing utterly impossible in a high house. In case of Leghorns or Minorcas a muslin curtain may be dropped from the roof to the front edge of the dropping board. This will insure their combs in the severest weather.

4. Allow no nest boxes, feed troughs, dust boxes or watering vessels on the floor. Attach all these to the front walls or partitions. This allows each of the twenty-four hens that you may place in each of these 12x12 compartments a floor area of six square feet. She needs all of this, and an abundance of straw or other litter in which she should be compelled to dig for at least one meal each day.

5. Under no circumstances allow any ventilators on the roof or elsewhere. In a house of this size you can get all necessary ventilation from the little exit door in cold weather. When it is warmer, open slightly your front windows. These should swing on hinges at the sides so one can open them and step out into the yard in front of each house. As said before, a house of this kind, 12 feet wide and 48 feet long, holding 96 hens and four cocks, can be built in most places for $100. If your location is dry use an earthen floor. If damp, make a double wooden floor and let the whole house stand nearly two feet from the ground, so the hens can run under and find there cool comfort in hot weather.

If your location is in an orchard of large trees, as are those of the writer, also those of White & Rice, as shown in illustration No. 2, then your hens will not so much need the cool place under the house; but it is well to have both. "Fowls suffer more from excessive heat in summer than from excessive cold in winter." If you do raise your house up be sure that the floor is double and built tight. Such a board floor is much preferable to a cement floor.

In selecting a location for your house give as much attention as possible to the following points:

1. Drainage. A natural surface drainage is very desirable. Tile drainage is often necessary also. Get rid of as much moisture as possible.

2. Sunshine. Have your house face toward the east or south if possible. Bright sunshine is not absolutely essential, but is very desirable. Sunshine is the best known germicide. Don't, however, make the serious mistake of putting in too many glass windows. Better err on the other side. Glass radiates heat very rapidly, and makes a cold house at night. Muslin windows are warmer than glass.

3. Try to have a dry, sandy soil for your yards. At least avoid a cold, clammy clay soil, if possible. The more fruit trees growing in your yards the better.

4. If possible, have the yards between your residence and the poultry house. You can thus see what is going on, and thus guard against enemies the more easily. If your poultry grounds lie north or west of your residence this feature works out just right.

Two objections will be raised by some to the plan of house outlined by us—no "scratching sheds," and "no alleyway. On the contrary, it is all scratching shed, and as for alleyways, they are a damage instead of a blessing. They furnish an excuse for not seeing what is going on. Every time you feed or gather eggs the attendant must see all the hens. None dead or setting under the alleyway; and he must and should get on terms of familiarity with every hen. This house fosters it; the alleyway prevents it.

Lamp-chimneys that break are not MACBETH'S.

If you use a wrong chimney, you lose a good deal of both light and comfort, and waste a dollar or two a year a lamp on chimneys.

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The Work of Nelson B. White in Hybridizing Grapes.

A clipping from a Massachusetts paper makes mention of the fact that Nelson B. White of Norwood, Mass., recently celebrated his golden wedding anniversary, and incidentally tells something of the work he is doing in producing new varieties of grapes. Mr. White has been awarded a prize by the Massachusetts Horticultural Society in appreciation of his work. The clipping we received refers to Mr. White's work, as follows:

"The first artificial crossing of the grape was done in 1850, and Mr. White was the third man in this country to attempt it. As Darwin traced, after all sorts of elaborate experiment, the origin of all the beautiful varieties of the pigeon to the common rock-pigeon, so from a combination of wild native grapes the viticulturist has produced the many delightful cultivated varieties. It is from a group of the best five native grapes, found in various sections of this country, Mr. White tells us, that have been produced the best grapes we have At his home on Nahatan street Mr. White has produced more than a thousand varietles of grapes. He produces his new varieties from seeds and trains his vines on stakes instead of trellises, thus following the old Italian method.

'To produce grapes which sha'l have the qualities of hardiness, earliness and vigor and freedom from mildew and rot, to produce grapes which add to these qualities a proper amount of sugar, a good sized berry and a certain sprightliness of taste which the excessively sweet grapes, such as those of California are lacking in—these have been Mr. White's aims. The Delaware grape and the Vitis Vinifera, or California grape, present, he thinks, many points of excellence. The California grapes are too sweet and the pulp adheres too closely to the skin. The Delaware, which Mr. White believes to be a hybrid between three species, is too small in bunch and berry, and has too many and too large seeds.

"Mr. White believes that an ideal grape can be produced by eliminating all the bad features of the Delaware and California grapes, and adding more good qualities than either possesses. An ideal grape, which nearly fulfills his standard, has been produced by Mr. White in what he calls the International. It resembles the Delaware in flavor, but is much larger in berry and richer in color as well as in taste. It grows in very fine bunches, many eight to ten inches long. Mr. White has another grape called the Oriental, which is somewhat larger in berry, and has a peculiarly rich, raisiny flavor.

"As Mr. Alfred Russel Wallace and Mr. Darwin pursued experiments in evolution at about the same time at different places and produced the same results, so for the past 30 years a Missouri gentleman named Herman Jaeger has worked on grape culture on much the same lines as our respected townsman, and each has, until recently, been ignorant of the others work. Mr. Jaeger has worked on southern, Mr. White on northern species. Later on, Mr. White combined the work of both, which combination he regards as the best basis for future vlticulture."

New Insecticide for San Jose Scale.

Prof. C. P. Close of the Delaware Experiment Station has been experimenting to find a satisfactory insecticide for San Jose scale which can be applied in summer, when trees are in full leaf. A circular dated Jan. 10 states that much progress has been made along this line. The basis of his insecticide is kerosene, to which is added limoid. Limoid is a commercial product manufactured by the Charles Warner Company of Wilmington, Del., and, according to the manufacturer, is "a carefully hydrated pure magnesian lime." The lime is ground very finely and is then treated in a special manner to form commercial limold. The kerosene and limoid mix together easily, the latter absorbing the former to a surprising degree, and it is this property of absorption that makes the making of the mixture possible. It requires four pounds of limoid to "take up" one gallon of kerosene.

A 10 per cent mixture (meaning that the finished mixture shall consist of 10 per cent kerosene), is made as follows:

Kerosene, 2½ gallons; limoid, 10 pounds; water, 22½ gallons.

It is best to have an extra barrel in which to mix the kerosene and limoid unless the top of the spray pump barrel is easily removed. Pour in the kerosene, add the limoid and stir with a paddle until they are thoroughly mixed into a thin "sloppy" mess. In case a little kerosene separates out sprinkle on a trifle more limoid to absorb it; this is only occasionally necessary, unless the limoid has become partially carbonated. Add a few gallons of water and stir again to throw the "sloppy" mass into suspension in the water. Pour in the balance of the water and agitate most vigorously for three minutes by pumping the mixture back into itself to form an emulsion. It is then a smooth mixture which flows as freely as pure water through a Vermorel or other nozzle. In part of the work 25 gallons of the mixture have been sprayed without a single clogging of the nozzle.

Laboratory tests have shown that "K-L" will "stand up," that is, the limoid and kerosene will not separate out for several weeks; just how long it will remain in perfect condition has not been determined.

In addition to this mixture, Prof. Close is experimenting with preparations which are similar to the foregoing, except that paris green is added to destroy biting insects. Still another is made by adding the limoid and kerosene to Bordeaux mixture, to guard against fungous diseases at the same time. These will be reported upon later.

As to the effectiveness of using the kerosene-limoid as a summer spray for San Jose scale, Prof. Close says:

"Various strengths of the mixture were used as a summer spray to determine how high a percentage of kerosene could be safely used. A 10 per cent 'K-L' (kerosene limoid), mixture caused no injury to apple, pear, peach plum (native) and cherry foliage. A portion of the trees had no scale and were tested for leaf resistance only. The 10 per cent mixture killed all crawling young, a few old ones and a very large proportion of intermediate sizes. The affected trees were mostly pears and were in most instances thickly coated with scales any number of which were protected by the roughened and cracked bark.

"The 15 per cent 'K-L' was safely used on apples, cherries plums (native), currants (black and red), and with very slight injury on a portion of the peaches and pears. It was most effective in killing fthe scale. On one old pear tree sprayed July 2nd only a portion of the insects over half grown were alive July 21st when another spraying was given. This second spraying injured the leaves somewhat while the first did not. On August 17th no live insects could be found. The mixture stuck to the trees for several weeks although there were frequent heavy rain storms.

For spraying while trees are dormant, Prof. Close recommends a 20 per cent mixture, which, however, is apt to cause injury when sprayed on trees in full leaf. Further experiments with this preparation will be continued during the coming season.

Pointers on Road Dragging.

Don't put a tongue in your drag. When we find a tongue we almost always find it on a single plank drag, and this in itself is objectionable, for the double or two-slab drag is a much more effective implement. Some persons think a tongue will hold the drag at a certain angle, but this is not so. Any drag will slip sideways if it is overloaded. But even if a tongue could hold the drag to a particular angle we should remember the fact that one angle is not suitable for all kinds of soil, and all degrees of grade. We advise you to ride on the drag so that you may change the angle slightly to suit these varying conditions; then why should you use a tongue to hold it, even if it would hold As a rule, th main purpose served by the tongue is to hold the single slab on edge. If you use the double slab drag each slab keeps the other on edge. However, we can all agree that any drag is a good drag, but most of us who have experimented carefully believe that the split-log or double slab gives the best satlsfaction.

D. WARD KING.

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JOS. BESNER, Atkinson, Mich., writes: "It is with pleasure I inform you that I am getting along fine. Have been using your "5-DROPS" according to directions and feel very good, healthy and strong If you wish to use my name you may do so, for your "5-DROPS" is just as represented and I recommend it to all whom I know suffer from Rheumatism."

NOTE.—Large Size Bottle "5-DROPS" (300 Doses) $1.00. If "5-DROPS" is not obtainable in your town, order from us direct and we will send it prepaid on receipt of price.

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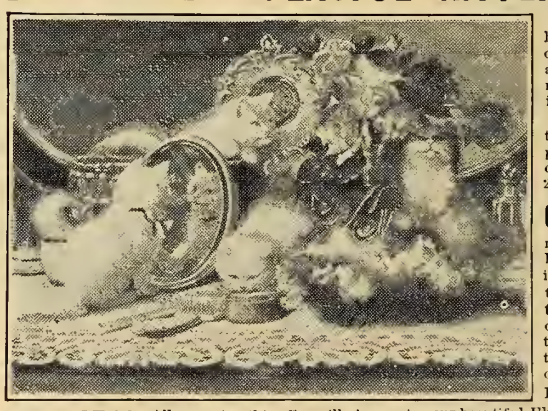

One of the cute kittens is looking into a hand mirror, another listens to the ticking of a clock, another is tasting of the cream, another catches the odor of the beautiful roses, while the fifth touches a glove, carrying out the actions of the five senses.

Rich in coloring, exquisite in execution, the original is one of the best animal-life paintings. Our reproduction is an exact duplicate in every tint and color. Size 15x20 inches.

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Insect Humor.

It has been said by philosophers that man is the only animal with the faculty for appreciating humor. This may be true, but how often in nature do we see what looks very much like an appreciation of the ludicrous. A neighbor's dog, because I play with him, will pick me out of a crowd and put up his paws in a comical way to attract my attention. As soon as he sees me his whole countenance changes and he looks at me with an expression that seems to say: "What a funny old fellow you are, anyway." That dog fairly laughs when I hide behind a tree and his eyes twinkle with merriment when he finds me. His attitude is much the same as a child's when it is playing hide-and-seek.

All children know how kittens will play for hours with something that will roll, or how they will play hide-and-seek and seem to feel the greatest of merriment when they take each other unawares. Young lions and tigers at the parks are just as playful as kittens or puppies. I think the hour of most solid fun that I ever had was in watching the comical pranks of four lion cubs. They just seemed to know that they were being watched and that they were funny. In their lionine way they seemed to have as genuine fun and to enjoy the humor of it as fully as a group of children.

The funniest prank I think I ever saw was one played on myself, not by man, or bird, or beast, but by a little winged insect. The story goes like this: I am very fond of apples and always have a plate of them on my study table, but in all my season's crop it would be hard to find an apple that had not a worm in it. This annoyed me not a little. I would not begrudge them a few, or even a reasonable portion of the crop, but they took it all, and so I was in desperation and vowed vengeance. During the winter among many new books, I got several about insects and one bulletin in particular on "Methods of Destroying the Codling Moth." This last was carefully read and put away with several other publications for future reference. In spring, before starting any campaign against the moths, I hunted up the bulletin relating to their destruction, and found where I had turned over the corner of a page to mark an important remedy. The corner seemed glued down and resisted opening, and on tearing it loose there was a little worm snugly tucked in his sleeping case. His pink sides showed that he was none other than a baby codling moth, and as he wiggled in his silken cradle I could not but remark, "My enemy, thou hast found me out." But why had he invaded my secret stronghold, why spied out my deep-laid designs? Of all the books about, why had he sought that one for his hiding place? And, especially, why had he spied out the one containing my secret plans and designs for his destruction? The humor of the situation so appealed to me that I left him unmolested in possession of his fortifications. My friends call the incident "chance," but I see in it only a bold exhibition of insect humor. W. N. HUTT.

Horticulturist Maryland Agricultural College.

The Preparation and Use of Kerosene Emulsion.

Kerosene emulsion is one of the most useful remedies against insects, especially those that suck the sap from the plants or blood from animals which they attack and which therefore cannot be combatted by the use of stomach poisons like paris green. On the other hand, different plants vary in their ability to withstand the oil, so that care must be used to make the emulsion strong enough to be fatal to the insects without hurting the plants. The chief insect pests for which it is used are the various species of plant-lice or aphids and the scale-insects.

To be applied to best advantage the emulsion must be applied with a spray pump, for if put on with a sprinkler it wastes the material and endangers the plant, and the applications is also not as thorough as when a regular sprayer is used. Spray pumps throw the emulsion in such a fine, foggy mist that it penetrates into nooks, corners and crevices which would not be reached with a sprinkler. The application must also be so thorough as to reach the individual insects, for they are only killed when it comes into actual contact with their bodies.

The directions for preparing the emulsion are as follows:

Shave one-half pound of laundry soap into thin pieces in one gallon of water and bring to boiling heat on stove to dissolve the soap. Then remove the soap-water from the fire and pour in two gallons of water and churn the whole together violently until thoroughly mixed. This is best done by pumping it through the pump and back into itself again. This gives three gallons of emulsion, which is 66 per cent oil, but as this is too strong for most uses, it may be diluted by this table:

To get 10 per cent oil add 17 gallons water.

To get 15 per cent oil add 10½ gallons water.

To get 20 per cent oil add 7 gallons water.

To get 25 per cent oil add 5 gallons water.

To get 30 per cent oil add 4 gallons water.

To get 40 per cent oil add 2 gallons water.

To get 50 per cent oil add 1 gallon water.

The emulsion is not a poison and does not kill the insects by being eaten, like paris green. It is only fatal to those insects that are wetted by the application, so that great thoroughness is needed in making the application, so that every individual will be touched. On the other hand, only enough must be applied to thoroughly wet the insects, and the emulsion must not run down the plant and in at the roots. That is why a regular spray pump is so necessary, in order to make the application so thoroughly as to reach all the insects without an excess, which would hurt the plants.

Some of the more common troublesome insects for which the kerosene emulsion may be used are:

Green Apple Louse—Spraying with 15 per cent emulsion before leaves get curled.

Woolly Aphis of Apple—Use 15 per cent, or 25 per cent in winter.

Black Aphis of Peach and Plum—Spray with 15 per cent before leaves get curled.

San Jose Scale—Spray with 5 per cent emulsion if treatment is to be given while trees are in leaf. But do not treat when in bloom, or until after the fruit is well set after blooming. The best remedy for this pest is to use lime-sulphur wash in winter.

Oyster-Shell Scale—Spray with 20 per cent emulsion when the young begin to crawl (about May 1 in most years).

Scurfy Scale—Same as oyster-shell scale.

FRANKLIN SHERMAN, Jr.
Entomoligist North Carolina Agricultural Experiment Station.

Zinc Tree Labels.

Several years ago a representative of The Fruit-Grower visited the Central Nurseries, Waukee, Iowa, and in the experimental orchard of that nursery we found some old zinc tree labels which the elder John Wragg had hung in the trees years before. The marking of the labels was as plain as it was the day the labels were prepared. They were marked with an ordinary lead pencil. These labels are prepared from ordinary pieces of sheet zinc, which are cut to the desired size, then are soaked in vinegar until the zinc corrodes, after which an ordinary lead pencil mark will become indelible. Try this plan of making zinc tree labels.

I regard The Fruit-Grower as the best paper I have seen for orchardists in this locality.—W. E. Carlin, Jerseyville, Ill. And Mr. Carlin sends a list of subscribers to prove it.

I send $1 to renew my subscription to The Fruit-Grower. I have taken the paper for a year, and like it better than any other paper I have seen, and I take three other fruit papers, too.—John Coleman, Aline, Okla.

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Just send me five names of spectacle wearers and I will do this:—First, I will mail you my Perfect Home Eye Tester, free. Then (after you have sent me your test), I will mail you a

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perfect-fitting five dollar family set of Spectacles for only $1, which will include a pair of my handsome Rolled Gold Spectacles, absolutely free of charge. This set will last a family a lifetime. I have never sold this family set for less than $5 and you could not buy spectacles anywhere near as good as these, even for $10 a *pair.* I am really charging you nothing for them now, as the dollar I will ask you to send with your test is only to help pay for this announcement. This very remarkable but honest offer (to send a five dollar set of spectacles for only $1) is open to everyone (my old customers also), but only for a short time, as I am just doing this to prove to every spectacle wearer in the world the following two very important facts: *First,* that my Perfect Home Eye Tester is positively accurate and reliable and with it you will be able to give your own eyes a perfect test in your own home and thereby I fit you with absolutely perfect fitting spectacles *by mail,* which could not be improved on even if you had undergone a personal examination in any occulist's office, at a cost of $10 or more. *Second,* and most important of all, that on account of my latest improvements, my spectacles have become known the world over as the "Dr. Haux Famous Perfect Vision Reading and Sewing Spectacles" and they are now greatly superior to all others on the market. With them you will be able to thread the finest needle and read the smallest print, day and night, with perfect ease and comfort, just as you did in your younger days, and this, even if your eyes are so very weak now that you cannot read the largest print in this paper. In fact the large number of physicians who have for years and years used and recommended my spectacles to their weak-eyed patients will tell you that they are the most perfect fitting, clearest and best in the world today, and I will give you your dollar back and let you keep the five dollar set of spectacles also, if *you yourself* don't find them to be the finest, clearest and best you have ever bought anywhere at any price. I can only seud one set to a family at this price, and this only for a short time, so write me *right now* for my free Perfect Home Eye Tester, and address my company as follows:—

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It did this for legions of others, among them such well-known persons as Mrs. Martha Coker, Tyler, Tex.; G. G. Rector, Marshall, N. C.; Mrs. Mack Devean, Noank, Conn.; Archibald Ritchie, Mt. Forest, Ont., Can.; Mrs. C. H. Sweetland, Webster City, Iowa; Pb. J. Brown, Kelispell, Mont., and it will surely do it for you. Write to the Turnock Medical Co., 2483 Busb Temple, Chicago, Ill., and since every free treatment is accompanied by a 68-page illustrated book going fully into all the details, it behooves you to send your name and address promptly for these free offerings. Do so today sure, for you cannot justly say you are incurable until you have tried this really remarkable treatment, and as neither money nor even stamps are asked for, you should certainly make a free test of it at once.

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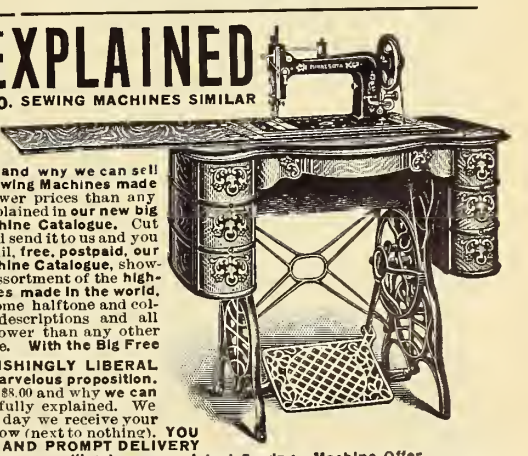
$5 PRICE EXPLAINED



FOR $5.00 TO $8.00 SEWING MACHINES SIMILAR to the MACHINE ILLUSTRATED hereon, have been widely advertised. How sewing machines can be offered at these prices **and why we can sell the HIGHEST GRADE Sewing Machines made in the world** at much lower prices than any other house is all fully explained in **our new big free Special Sewing Machine Catalogue.** Cut this advertisement out and send it to us and you will receive, by return mail, **free, postpaid, our new big free Sewing Machine Catalogue,** showing the most complete assortment of the **highest grade Sewing Machines made in the world,** all shown in large handsome halftone and colored illustrations, full descriptions and all priced at prices much lower than any other house can possibly make. **With the Big Free Catalogue** you will receive **THE MOST ASTONISHINGLY LIBERAL Sewing Machine offer** ever heard of, a new and **marvelous proposition.** How others can offer sewing machines at $5.00 to $8.00 and why **we can sell at much lower prices than all others** will be fully explained. We will explain why we can ship your machine the day we receive your order, how we make the freight charges so very low (next to nothing). **YOU WILL GET OUR FREE TRIAL OFFER, SAFE AND PROMPT DELIVERY GUARANTEE, 20-year Binding Quality Guarantee, you will get our very lateat Sewing Machine Offer. INSTALLMENT, PARTIAL PAYMENT PLAN EXPLAINED.** How new sewing machines are exchanged for old ones, all fully explained when you write for **Our Free SEWING MACHINE CATALOGUE. HAVE YOU ANY USE FOR A SEWING MACHINE?** If you have don't fail to cut this advertisement out today and mail to us. If you can't use a sewing machine at any price, call your neighbor's attention to this advertisement. Don't buy any kind of a sewing machine at any price, for cash, on time or on installments, or don't trade your old machine for a new one until you **get our Big New Sewing Machine Catalogue FREE, with all our new offers,** with everything explained, **ALL FREE FOR THE ASKING.** We will tell you something about sewing machines you ought to know. **WRITE TODAY, and be sure to mention this paper. DO IT NOW. Address,**

SEARS, ROEBUCK & CO., CHICAGO, ILLINOIS.

Kill the Woolly Aphis

This is the insect which works on the roots of apple trees, causing the death of thousands of trees yearly. Woolly Aphis can be readily destroyed by spreading tobacco dust about the roots of trees. In addition to killing the insects, tobacco dust is valuable fertilizer—indeed, it is worth what it costs as a fertilizer alone.

WE SELL TOBACCO DUST IN ANY QUANTITY

Also Fertilizers of All Kinds—The ANCHOR BRAND

WRITE FOR PRICES

MAYER FERTILIZER & J. COMPANY

BULWER AND ADELADE AVENUES. ST. LOUIS, MISSOURI.

St. Joseph Business University

WE TEACH

CHARLIERS Shorthand In from seven to ten weeks, a marvelous system. Also teach

Bookkeeping, Penmanship, Telegraphy and English.

Graduates secure positions. Fine equipment. Superior faculty. Fall term begins Sept. 1, 1904. Catalog free.

E. E. GARD, St. Joseph, Mo.

Lincoln Business College

Young people thoroughly prepared for positions as bookkeepers, stenographers and telegraph operators. We assist students in securing employment. Catalogue Free.

LINCOLN BUSINESS COLLEGE, Lincoln, Nebraska.

Seven Great Colleges

Chillicothe Normal College
Chillicothe Commercial College
Chillicothe Shorthand College
Chillicothe Telegraphy College
Chillicothe Pen Art College
Chillicothe Musical College
Chillicothe Typewriting College

For Free Catalog address

Allen Moore, Pres., Chillicothe, Mo.

Car fare paid as per schedule.

Government Positions!

25,566 Appointments were made to Civil Service places during the past year. Excellent opportunities fer yonng people. Each year we instruct by mail hundreds of farmers' sons who pass these examinations and receive appointments to life positions at $840 to $1200 a year. If you desire a position of this kind, write for our Civil Service Announcement and learn how you may secure it. It will be sent free. Mention this paper.

COLUMBIAN CORRESPONDENCE COLLEGE,
223-25 Pa. Ave. S. E. Washington, D. C.

Apples Wanted

Also Potatoes and Onions.

We want your consignments, offer you the best markets in the country, prompt returns and satisfactory service; 36 years in the produce business means that we deal **fair and square.** Refer to leading banks and commercial agencies.

Write or wire us what you have to offer. **Do it right now.**

C. C. CLEMONS & CO.
Second and Grand Avenue.
KANSAS CITY, MISSOURI.

A **Sure Way** to make money is by sending us your shipments of **Fruits, Butter, Eggs and Poultry.**

"THERE'S MONEY IN THE NAME" COYNE BROTHERS CHICAGO TRADE MARK

COYNE BROS.

COMMISSION MERCHANTS.
160 South Water Street, Chicago.

Sandusky & Co.

General Commission

116 South Third Street and 115 Market Square **St. Joseph, Mo.**

Wholesale Fruits and Produce
Berries a Specialty

Dealers in Berry Box Material, Grape Baskets, Egg Case Material. All kinds of Baskets in stock. Established 1864.

Moore & Rehsteiner

FOREIGN FRUIT IMPORTERS AND COMMISSION AGENTS

ANTWERP, BELGIUM

Cable address Moore (A. B. C. Code, 5th Edition)

Consignments of all kinds of fresh fruit solicited. Well established connection in Belgium and Holland. Best and cheapest route to South Germany, Switzerland and Austria.

WE CURE ECZEMA

Salt Rheum, Tetter, Piles, or any skin disease. This cure is permanent. We will send you a 25c box free. Send 10c to pay postage and packing. **Empire Remedy Co., 419 Kansas Ave., Topeka Kan.**

No More Blind Horses

For Specific Ophthalmia, Moon Blindness and other sore eyes, BARRY CO., Iowa City, Iowa, have a sure cure.

FENCE STRONGEST MADE, Bull strong chicken-tight. Sold to the Farmer at Wholesale Prices. Fully warranted. Catalog free
COILED SPRING FENCE CO.
Box 125 Winchester Indiana.

Planet Junior Garden Cultivators.

Most Fruit-Grower readers are acquainted with the Planet Junior line of implements, from having used the twelve-tooth and other cultivators in field work. Not all of them, however, know the value of the line of garden implements which S. L. Allen & Co. manufacture This line includes wheel hoes, with different forms of shovels for different work; drills, markers, etc. In fact, with one of the latest styles of these garden cultivators one can care for a good-sized garden with little labor and with great satisfaction. The accompanying illustration shows one of the styles made by this company. This implement drills garden seeds, covers them and marks the next row, all at one operation. We recommend that every

reader of The Fruit-Grower send to S. L. Allen & Co., Box 711 E. Philadelphia, Pa., for a copy of the 1905 catalogue, which not only describes the full line of implements made by this firm, but also contains many illustrations showing how these implements are used in all lands.

Why the Gold Medal Was Awarded to the Reliable Incubator.

It isn't at all surprising to those who are familiar with incubators and brooders that the Gold Medal—the highest award—of the great St. Louis World's Fair was given to the Reliable Incubators and Brooders. The jurors who made the awards were experts on artificial Incubation, and they readily recognized the superiority of the Reliable machines. Their award was for an incubator of highest hatching efficiency. The double-heating, double-ventilating features of the Reliable are such pronounced improvements that the judges could do nothing else but award the Gold Medal as they did.

Twenty years of experience in the building of incubators and brooders are crystalized in the Reliable of today. The secret of their success is that the builders have kept "results" ever in mind. They have no "hobbies" to overcome. They have improved here and discarded there until they have attained very near to perfection. As a result the Reliable is universally known as "The World's Favorite."

Reliable Incubators and Brooders are so simple and the directions so comprehensive that

any one with the least bit of "gumption" can operate them and make money from the start; while the expert who examines them critically is delighted with them, and finds all that advanced science can suggest for effectiveness, simplicity and economy embodied in Reliable machines.

The Reliable Incubator and Brooder Co., Box B 155, Quincy, Ill., have issued an exceptionally valuable catalogue of their wares. It also contains a lot of poultry hints—a book easily worth 25c. They will be glad to send you a copy on receipt of 5c in stamps to pay postage

A 20th Century Wonder.

The Cycle Hatcher, a metal machine for hatching chickens, is styled a 20th Century Wonder. It was designed to take the place of the hen and is offered as an improvement over wooden machines, embodying principles that cannot be attained with a wooden construction.

Being made entirely of metal and asbestos, it is absolutely fireproof, will not swell or shrink, and is not affected by varying conditions of atmosphere, as wooden machines are. It is the result of years of experiments conducted by a practical poultryman. His ambition was two-fold; he wanted to make a metal machine that would get nearer to the mother-hen conditions in the hatching process, and then he wanted to be able to sell that machine for $5.00

At this price many persons use several machines. In fact the manufacturer's experience with hatching machines convinced him that three 50-egg incubators were better than one with 150-egg capacity. His reasons for this are interesting, and fully set forth in the catalogue advertising his machine.

The Cycle Hatcher, sold for $5.00, is a complete machine and includes everything necessary to hatch eggs but the oil. It is made by the Cycle Hatcher Company of Salem, N. Y., who would like to place a copy of their new catalogue in the hands of every poultry-raiser and everybody interested in hatching chickens. They will send it free to all applicants, simply mention this paper when you write.

Elkhart, Ind.

A good many people know this town because every Lake Shore passenger stops there to change engines. Even the famous 20th Century Limited which does not enter the large city of Buffalo, N. Y., and passes through a great many other large places without stopping, halts for a few moments rest at Elkhart. But many thousand more know Elkhart because it is the home of the famous Elkhart Buggies, and thousands upon thousands of these sterling vehicles are in daily use all over the country and abroad. For thirty-two years the Elkhart Company has been selling their product direct from the factory to the consumer. Their catalogue is most complete, showing over 200 styles of vehicles and 65 styles of harness. It is gladly sent free to any reader of this paper who will write for it. Address Elkhart Carriage and Harness Mfg. Co., Elkhart, Ind.

Science vs. Nature.

Among the many enterprises connected with the large and ever-increasing poultry industry of the country, perhaps none is of greater importance than the manufacture of hatching machines, or incubators.

The brains and inventive genius expended in perfecting the practical utility of these machines is evidenced by the surprising results which some of them achieve. In fact, such a close approach to natural conditions combined with commercial practicability has been attained that the "settin' hen" has been almost crowded out of business even among the smaller poultry-raisers, while among the larger farms artificial Incubation has reached huge proportions and is used exclusively.

To meet these demands many different machines are offered each claiming peculiar merit. Among these the Ormas Incubator, manufactured by Mr. L. A. Banta of Ligonier, Ind., occupies a prominent place. His incubator is the product of careful thought and attention to those details so necessaryy in making a hatcher of the highest quality, and his machine is worth the consideration of any one contemplating the purchase of an incubator. The Ormas line, which includes brooders also, are models of scientific efficiency and judging from the testimony of those who use them, give good satisfaction.

Mr. Banta sends a beautifully illustrated catalogue, containing full description and prices, free to all who request the same. Address L. A. BANTA, Ligonier, Ind.

A Remarkable Incubator Offer.

An Incubator that is sold on 40 days free trial and that is backed by an iron-clad ten-year guarantee, must necessarily contain great merit, or the proposition would prove a losing one to the advertiser. Such an offer is made by the Great Western Incubator Co., of Kansas City, Mo., in their ad on page 44 of this issue. The proposition is proving most successful, because the Great Western Incubator is all that the makers claim for it. Our readers will do well to look up and respond to the Great Western advertisement.

New Thought Hatcher

The Hastings Mfg. Co., Hastings, Neb., manufactures the above machine, which is claimed to have many points of superiority over the old-style Incubators. The company has an advertisement on our poultry page, and will be pleased to send descriptive catalogue to any of our readers who ask for same. Now is the time to select the incubators for the coming spring, and the Hastings Mfg. Co. would like to explain their machine before you buy. Write for a catalogue, mentioning The Fruit-Grower when you do so.

For Your Face's Sake.

If your face burns and itches, after shaving, don't swear at your razor or break up the furniture. Stop using cheap soap, and try real shaving soap, made especially for that purpose. The J. B. Williams Co., Glastonbury, Conn., have been making shaving soap for nearly three-quarters of a century. It will take but a moment to send for a free trial sample, as per their offer in another column, and you will reap the benefit all your life, and your wife will have a better natured husband.

Western Seeds for Western Planters are being advertised by the old, reliable house of Barteldes & Co., or the Kansas Seed House, Lawrence, Kan., with branch houses at Denver and Oklahoma City. Readers who have been dealing with Barteldes & Co. for many years do not need the assurance given in the ad that the seeds are fresh. There is no better place for a Western farmer to buy his seeds. They make a specialty of the things that are peculiarly adapted to the far West. They have published an elegant catalog for 1905. It is mailed free from either one of the three houses. We advise our readers to write for it.

The old adage, "Every man to his trade," is well illustrated in the firm of W. W. Vansant & Sons, of Farragut, Iowa. These gentlemen are seed corn specialists with years of experience. They grow their own corn and breed new and prolific varieties on their hundreds of acres of fine southwestern Iowa soil. Their splendid success has been due to their fair dealing and always keeping faith with their customer. Write them for free catalogue. Address Box 12, W. W. Vansant & Sons, Farragut, Iowa.

The attention of our readers is called to the new advertisement of J. B. Armstrong & Sons in this issue. These gentlemen believe in raising two stalks of corn where one grew before. They believe in progress. It will pay you to carefully read their advertisement elsewhere in this issue. Send for their catalog. Address J. B. Armstrong & Sons, Shenandoah, Ia.

Sharples Tubular Separators

Every Tubular Starts a Fortune

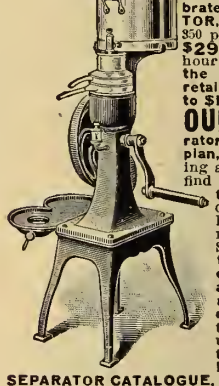
If you had a gold mine would you throw half the gold away? Properly managed dairies are surer than gold mines, yet many farmers throw half the gold away every day. The butter fat is the gold—worth twenty to thirty cents a pound. Gravity process skimmers — pans and cans — lose half the cream. Your dairy can't pay that way.

Like a Crowbar

Tubular Separators are regular crowbars — get right under the trouble—pry the mortgage off the farm. How? Gets all the cream—raises the quantity and quality of butter — starts a fortune for the owner. It's a modern separator. The picture shows. Write for catalogue F-241.

THE SHARPLES CO. CHICAGO, ILL. **P. M. SHARPLES WEST CHESTER, PA**

$25.00 Cream Separator



FOR $25.00 we sell the celebrated DUNDEE CREAM SEPARATOR, capacity 200 pounds per hour; 350 pounds capacity per hour for **$29.00;** 500 pounds capacity per hour for **$34.00. Guaranteed the equal of Separators that retail everywhere at from $75.00 to $125.00.**

OUR OFFER. We will ship you a Separator on our 30 days' free trial plan, with the binding understanding and agreement if you do not find by comparison, test and use that it will skim closer, skim colder milk, skim easier, run lighter and skim one-half more milk than any other Cream Separator made, you can return the Separator to us at our expense and we will immediately return any money you may have paid for freight charges or otherwise. Cut this ad out at once and mail to us, and you will receive by return mail, free, postpaid, our LATEST SPECIAL CREAM SEPARATOR CATALOGUE. You will get our big offer and our free trial proposition and you will receive the most astonishingly liberal Cream Separator offer ever heard of. Address,

SEARS, ROEBUCK & CO., CHICAGO.

DE LAVAL CREAM SEPARATORS

Every Highest Award at every International Exposition for 25 years.

Only Medal, Chicago, 1893

Grand Prize, Paris, 1900

Gold Medal, Buffalo, 1901

GRAND PRIZE ST. LOUIS 1904

Now, as ever, the World's Standard.

Write for free catalogue.

The De Laval Separator Co., 74 Cortlandt St., N. Y.

20 PER CENT MORE CREAM
IS OBTAINED BY USING THE TRIANGULAR NON-DILUTION CREAM SEPARATOR

Than by the old process. Does not mix water with milk. No ice, chemicals, crocks, pans, complicated machinery or power. Increases carning capacity of each cow. Write for descriptive circular and special offer to agents and farmers.

THE MERCANTILE SYNDICATE, Department A Kansas City, Mo.

4,000,000 Peach Trees

Tennessee Wholesale Nurseries

JUNE BUDS A SPECIALTY

No agents traveled, but sell direct to planters at wholesale prices. Absolutely free from disease and true to name. Write for catalogue and prices before placing your order elsewhere. We guarantee our stock to be true to name. Largest Peach Nursery in the World. Address

J. C. HALE, WINCHESTER, TENN.

Make your own Fertilizer at small cost with

Wilson's Phosphate Mills

From 1 to 40 H. P. Send for catalogue.

WILSON BROS. Sole Mfrs., Easton, Pa.

"The Whole Thing in a Nutshell"

200 Eggs a Year Per Hen

HOW TO GET THEM

The fourth edition of the book, "200 Eggs a Year Per Hen," is now ready. Revised, enlarged, and in part rewritten. 96 pages. contains among other things the method of feeding by which Mr. S. D. Fox, of Wolfboro, N. H., won the prize of $100 in gold offered by the manufacturers of a well-known condition powder for the best egg record during the winter months. Simple as a, b, c—and yet we guarantee it to start hens to laying earlier and to induce them to lay more eggs than any other method under the sun. The book also contains recipe for egg food and tonic used by Mr. Fox, which brought him in one winter day 68 eggs from 72 hens; and for five days in succession from the same flock 64 eggs a day. Mr. E. F. Chamberlain of Wolfboro, N. H., says: "By following the methods outlined in your book I obtained 1,496 eggs from 91 R. I. Reds in the month of January, 1902." From 14 pullets picked at random out of a farmer's flock the author got 2,999 eggs in one year—an average o over 214 eggs spiece. It has been my ambition in writing "200 Eggs a Year Per Hen" to make it the standard book on egg production and profits in poultry. Tells all thehe is to know, and tells it in a plain, commonsense way.

Price 50 cents, or with a year's subscription, 60c; or given as a premium for four yearly subscriptions to the American Poultry Advocate at 25c each.

Our paper is handsomely illustrated, 40 to 75 pages, 25 cents per year. 4 months' trial, 10 cents. Samples Free. Catalogue of Poultry Books Free.

American Poultry Advocate,
No. 11 Wesleyan Block, Syracuse, New York.

$300,000,000.00 IN POULTRY

Do you know that the government census of 1900 gives the value of the poultry produced in that year at very nearly $300,000,000?

POULTRY SUCCESS
The 20th Century Poultry Magazine

is absolutely indispensible to every one interested in chickens whether they be beginners, experienced poultry raisers or only keep a few hens. It is without any question the foremost poultry monthly in this country and readers or its articles on pure bred chicks and their better care and keeping have come to realize that it is a plain truth that "there is money in a hen."

Poultry Success is 16 years old. Has from 36 to 80 pages every issue. Is beautifully illustrated and handsomely printed. Has best writers. Regular subscription price 50 cents.

Special Introduction Offers

If you keep chickens or are in any way interested in them we will send Poultry Success one year to new subscribers, and include a large illustrated practical poultry book free; or 10 cents for three months' trial. Address today. Poultry Success Co., Dept. 97, Springfield, Ohio.

Poultry & Fruit

go well together. The Poultry Topics is to the chicken industry what The Fruit-Grower is to fruit growing. We send Poultry Topics one year for 10 cents. Less than cost. This to prove its goodness. Sample free. Dime returned if you want it.

Poultry Topics, Lincoln, Neb.

"Get Next"

And keep posted on correct weekly market reports printed in The Farmers' Record, which means more money to you. Also has illustrated livestock, poultry and dairy departments, valuable to farmers, increasing their income,

10 Weeks For 10 Cents

You will never regret subscribing. We will send it 10 weeks for 10 cents and five farmers' names. To everyone subscribing we will send our SPECIAL PREMIUM OFFER. "Get next" to it.

Farmers' Record, 5 Montgomery St. Milwaukee, Wis.

Fruit Growers send 25 cents for 6 months trial subscription to THE PEACH GROWER, Savannah, Ga. It is a practical paper for growers of all kinds of fruit, of peculiar interest to peach growers. Published in the greatest peach state in the world, it publishes much matter of interest to peach growers everywhere.

Address The Peach Grower, Savannah, Ga.

GOLDEN OPPORTUNITIES

In the Pacific Northwest for farmers, fruit-growers, dairymen and stockmen. Cheap land, virgin soil, no droughts, no blizzards, no floods. To get reliable information regarding this wonderful country send 50 cents for a year's subscription to

THE RANCH, Seattle, Washington.

When writing to advertisers, always mention The Fruit-Grower. It will insure your receiving the best possible attention, and then it will help the paper in many ways.

Electric Wheel Co.

Every farmer who has had the occasion to take hogs to market knows that it is not by any means an easy job to load them into the ordinary farm wagon. When hogs are ready for market they are fat, sluggish, and not in condition to stand any amount of driving or handling. It's a mighty difficult task to handle a fat hog without injuring him. That is one of many reasons why it's a big job to load him into the hind end of a high wagon. It is not convenient or desirable to build a permanent loading chute for the reason that modern practice and efforts for the prevention of disease demand that the feeding lot shall be frequently changed.

It is not desirable or practicable to dig ditches into which to back the hind wheels of the wagon in order to get it down to the proper

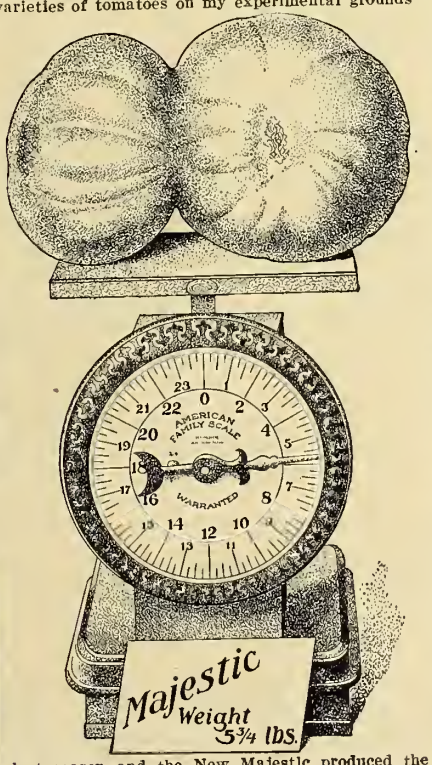
level. It is next to impossible to catch the hogs and force them up an incline plane into the wagon.

There is a better, easier, more humane way and one which does not worry the hogs in the least. The first requirement is a low-down handy wagon; a light incline plane well cleated, with stalled sides and a few light handles. See illustration. The wagon may be driven into any feed lot anywhere and after the cleated incline is placed upon the rear end of the wagon the hogs may be gently directed to it with the handles. The operation is so easy and so natural that the hogs are literally loaded and the rack closed before they know it.

The low-down wagon is so close to the ground to begin with that the incline is very graduat and easy. What has been said above as to the advantages of easy loading of the low-down handy wagon does not apply to the loading of hogs only. It is the easiest and most convenient thing in the world for loading and handling manure, corn fodder, hay, grain, stones, wood, logs, etc. The mention above was merely used as an apt illustration.

The comparison shown in the above cut is drawn by the Electric Wheel Company of Quincy, Ill., who are the manufacturers of the Electric Low Down Handy Wagon, and Electric Steel Wheels. They will send you an illustrated catalogue if you ask them for it, which will fully describe these goods and prove to you their worth and advantage. Write for the book today, mentioning The Fruit-Grower.

In regard to the great New Majestic Tomato being advertised by the Iowa Seed Company, the following, taken from a personal letter from J. R. Lawrence, the noted horticulturist and experimenter of Massachusetts, will be of interest to our readers. Mr. Lawrence says: "I grew 48 varieties of tomatoes on my experimental grounds



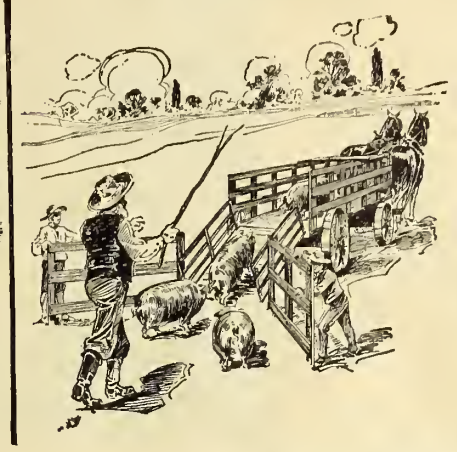
last season and the New Majestic produced the largest fruit I have ever grown. The photograph which I send shows one which weighs 5¾ pounds. It was somewhat rough and might almost be called a double fruit, but it grew on one stem, was completely joined together and was all one specimen. The plant from which it was taken produced five pecks (1¼ bushels of large, round, smooth fruit, it being the only rough one on the plant." Heretofore 2½ pounds was considered almost the extreme limit as to size of a tomato, but last season many persons reported that they grew specimens of the Majestic weighing 3 to 5 pounds each. They are so productive and of such handsome shape and fine quality that they are sure to please, and everyone who likes tomatoes should give them a trial. This new variety is being introduced by the Iowa Seed Company of Des Moines, Iowa. They are offering $100.00 in cash prizes for the largest tomatoes grown this year and we hope our readers will all compete. Better write them today for a copy of their large illustrated catalogue of garden and farm seeds which will be sent free to you if you mention this paper.

The "Minnetonka" Apple.

The Mayfield Nurseries, owned by L. L. May & Co., of St. Paul, Minnesota, are the most northern in America. They have lately achieved a remarkable triumph in the propagation of "The Minnetonka Apple," which is wonderfully prolific and hardy as an oak. "The Minnetonka" has very large fruit, tender, crisp and deliciously sub-acid, making the finest cooking apple known and a choice dessert apple as well. The "Minnetonka Apple" announcement in another column is something every lover of the toothsome and health-giving apple cannot afford to miss.

Buckbee's Big Seed Catalog.

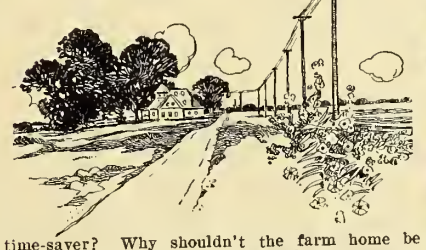
We wish that every reader of ours would send for a copy of Buckbee's Big Seed and Plant Guide for 1905. It is replete with good illustrations, showing many vegetables and flowers in their true natural colors. This book contains a vast fund of information of especial value to buyers of seeds and plants. Buckbee's seeds



are the best that money can buy. They are "full of life" simply because Buckbee tests all of his seeds by planting them in the ground. His expert tester has a cast iron rule that 98 out of every 100 seeds planted must produce healthy, vigorous plants or the seed is rejected and sent to the feed bins. "Full of life" is Buckbee's motto, and the busy bee is his trade mark. Value up to the brim is evidenced in every price quoted. It pays to plant Buckbee's seeds and plants. The Big Buckbee Seed and Plant Guide is free to all our readers who mention this paper. Address H. W. Buckbee, Dept. L. 31, Rockford, Ill.

Telephone on the Farm.

Why not? Why shouldn't the farmer and his family enjoy the conveniences of this modern



time-saver? Why shouldn't the farm home be brightened in every way possible?

The great problem of keeping boys and girls contented on the farm would be solved in short order, if farm life had more of the luxuries and conveniences the city offers; if a large share of the monotony and isolation of farm life were dispelled.

The farmer, himself, would be greatly benefited by the adoption of some of the more necessary modern improvements his city brother employs in his home and business. For instance, the telephone. Every farm should have a telephone. If any business man in the world needs a telephone the farmer is the man. With a telephone the farmer, no matter how remote his location from the great centers of business, comes into close contact with the outside world. He may get the market reports every day and can sell his products when the market is right. Thus the extra price he may realize from a single crop will often pay the entire cost of his telephone and the expense of building his line. A telephone keeps the farmer in touch with his neighbors, gets help to him without delay or loss of time when help is needed or accidents occur, calls the physician quickly when emergencies arise day or night, often saves a trip to town in busy seasons when time is money, and cements the entire neighborhood into one big, helpful family.

Farmers are awakening to the numerous advantages of owning their own telephones and lines. Hundreds of farm lines are being built all over the country. The improved telephone and appliances built especially for farm lines by the Stromberg-Carlson Telephone Co., of Rochester, N. Y., makes the building and operating of such lines a very simple and inexpensive proposition. No better instruments and apparatus are built, and the testimonials of hundreds of users prove that the success of their lines is due to the superiority of Stromberg-Carlson telephones. They are simple, do not get out of order, or require experts to operate them. They are built for durability and efficiency.

The Stromberg-Carlson Company will be glad to hear from farmers everywhere who are interested in knowing more about telephones and how to build and operate farm lines. They have a lot of valuable information which they will be glad to send free, to farmers. Write for it

Asthma

CURED TO STAY CURED.

Attacks stopped permanently. Cause removed. Breathing organs and nervous system restored. Symptoms never return. No medicine needed afterwards. 21 years of success treating Asthma and Hay fever. 58,000 patients. Book 35F Free. Very Interesting.

Write **P. Harold Hayes, Buffalo, N. Y.**

INVEST $1

or more, a month, in an old business paying 15 per cent.

We offer you an opportunity to invest as little as one dollar a month (3 1-3 cents a day) in a business established 27 years and now paying 15 per cent. in dividends. It is the most extraordinary investment opportunity offered to the public in many years.

The business is one of the best known of its kind in the world, and its continued prosperity is almost as certain as the continued success of the United States Government. Every dollar invested in it will be as safe as if it were in a bank, and will earn dividends three to five times larger.

WRITE FOR OUR **FREE PROSPECTUS**

We will not sell any very large blocks of this stock. We want small investors. Our Free Prospectus tells why. Write for it today. It tells about the business in detail and why stock in this old business of great prestige and big dividend-earning capacity is now offered to the public for the first time. Drop us a postal to-day.

WELLS & CORBIN, Investment Brokers
2230 Land Title Building, Philadelphia

JUST WHAT YOU WANT!

To quickly add 10,000 new subscribers to our list, we make this big offer. We will send you the handsome 18Kt. Gold Pl. Engraved Band Ring (send your size), one Gold Plated Watch Chain, one Leather Pocket Purse, one Wheel of Fortune and indicator, together with a whole year's subscription to our family journal, ALL FOR 10 CENTS, mailed postpaid. Three subs. and premiums for 25c. Address

"FIRESIDE & FAMILY,"
438 Pacific Street Brooklyn, N. Y.

TWO RINGS FREE

Send us your name and we will send you FREE twelve of our magnificent perfume charms. Sell them at ten cents each and then send us the $1.20 and we will send you FREE both of these SOLID GOLD laid rings. We trust you and will take back all you cannot sell

WALTERS MFG. CO., 128 Water St., Dept. B 20, New York.

The "Five for $1.00" Offer

AND THE

"Three Yrs. for $1.00" Rate

WILL BE

Withdrawn May 1, 1905

Until that date we will accept your renewal and the names of four new subscribers one year for One Dollar. Read article on page 9, "The Family Circle."

Inclosed find $1, for which renew my subscription for three years. The Fruit-Grower is the best horticultural paper I know of, and I would not be without it for double the subscription price.—J. W. Rockey, Miamisburg, Ohio.

Fruit Growers and Farmers

Thousands of the best fruit growers and farmers in all parts of the U. S. read the

SOUTHERN FRUIT-GROWER

because they find it the most helpful fruit paper published. Contains 24 to 40 pages of valuable fruit and farming information every month. 50c a year. Send 25c and 10 names of fruit growers and get it a year on trial. Sample free.

The Southern Fruit-Grower BOX 46. CHATTANOOGA, TENNESSEE

Earliest Green Onions.

The John A. Salzer Seed Co., La Crosse, Wis., always have something new, something valuable. This year they offer among their new money making vegetables, an Earliest Green Eating Onion. It is a winner, Mr. Farmer and Gardener!

JUST SEND THIS NOTICE AND 16c.

and they will send you their big plant and seed catalog, together with enough seed to grow

1,000 fine, solid Cabbages,
2,000 rich, juicy Turnips,
2,000 blanching, nutty Celery,
2,000 rich, buttery Lettuce,
1,000 splendid Onions,
1,000 rare, luscious Radishes,
1,000 gloriously brilliant Flowers.

In all over 10,000 plants—this great offer is made to get you to test their warranted vegetable seeds and

ALL FOR BUT 16c POSTAGE,

providing you will return this notice, and if you will send them 26c in postage, they will add to the above a big package of Salzer's Fourth of July Sweet Corn—the earliest on earth—10 days earlier than Cory, Peep o' Day, First of All, etc. [F.P.]

Grand Island Route

Short Line Between

St. Joseph and Kansas City

DOUBLE DAILY SERVICE, with new 80-foot Acetylene Gas-lighted Pullman Chair cars (seats free) on night trains and Pullman high-back seat coaches on day trains, between Kansas City and St. Joseph, Mo.; Hiawatha, Seneca, Marysville, Kan.; Fairbury, Fairfield, Hastings and Grand Island, Neb.

Connections made at Kansas City for all points East, South and West.

At Grand Island direct connections are made with Union Pacific fast trains for California and the Pacific Northwest.

S. M. ADSIT,
Gen'l Pass. Agt, St. Joseph, Mo.

HOMESEEKERS' EXCURSIONS

If you want to visit Oklahoma, New Mexico, Arizona, Texas or any of the other sections of the Southwest in which fruit-growing is becoming such an important industry, investigate the low rate made by the

Santa Fe Route

ON FIRST AND THIRD TUESDAYS OF EACH MONTH.

The Santa Fe reaches every part of the Southwest, and with its frequent and well equipped trains and splendid roadbed, is best prepared to serve the public. For circulars or any desired information, address

W. J. BLACK, G. P. A., Topeka, Kan.
L. O. STILES, C. P. & T. A., St. Joseph, Mo.

Missouri Pacific Railway

Best Line Between Missouri River Points and St. Louis

FIVE TRAINS

EACH WAY DAILY

The Missouri Pacific lines traverse a vast section of rich, undeveloped country, presenting varied conditions of soil and climate adapted to every character of product. Booklet on Missouri, Arkansas, Louisiana, Texas, Indian Territory, Kansas and Nebraska will be furnished free on application.

H. C. TOWNSEND

Gen. Pass. & Tkt. Agt. St. Louis, Mo.

Ruptured

Send for our RADICAL CURE TRUSS *On Free Trial*

"THE ONLY PERFECT TRUSS." Totally unlike anything made. You Pay When Satisfied. WE TAKE ALL RISK.
P. BUCHSTEIN CO., 608 R 1st Ave, S., Minneapolis.

PRIZE WINNING EXHIBIT AT NEW YORK STATE FAIR
GROWN FROM BURPEE'S SEEDS.

Burpee's Farm Annual.

The issue of 1905—the twenty-ninth edition of this favorite catalogue—is a handsomely bound book of 178 pages, with beautiful lithographed covers. It is profusely illustrated with wood engravings, photogravures and colored plates, painted from nature at their Fordhook Farms in Bucks County, Pa.

Owning, as they do, extensive farms in Pennsylvania and New Jersey, this firm tests all known varieties and every novelty before the seeds are offered for sale, thus guaranteeing their reliability.

Some of the new vegetables and flowers offered for 1905 appear particularly attractive.

At the St. Louis World's Fair they were not only awarded several gold medals, but the products of their seeds won a Grand Prize for the best collection of vegetables.

Any of the readers can obtain a copy of this book by addressing W. Atlee Burpee & Co., Philadelphia, Pa. The progressive planters will be very much interested in its contents.

St. Louis Seed Co.

Mr. Wm. F. Nichols, president and general manager of the St. Louis Seed Co., was presented with two private awards of merit by the Louisiana Purchase Exposition commission in behalf of his elaborate designs exhibited by

his house. This firm was also awarded five other medals, making a grand total of seven, a record no other seed house can equal.

This season, Mr. Nichol's wonderful new corn, "Nichol's Gold Boud," will be offered by the firm, they offering to buy back a stipulated number of ears at $1.00 each. See their ad. in another part of this paper. They anticipate distributing several thousand bushels of this wonderful corn free to readers everywhere. Send for sample packet and get in the race; it's free. Address, St. Louis Seed Company, 651-653 North Fourth street, St. Louis, Mo.

A Remarkable Tribute.

It is seldom that a firm received such striking recognition as accorded by the Minneapolis Daily Times which, in its issue of January 15th, printed the following editorial under the heading, "Factors of Prosperity."

The paper read last week at the annual meeting of the Minnesota State Agricultural Society by Jesse E. Northrup of this city, suggests the influences which are quietly but effectively at work in the development of those natural resources of the northwest upon which we most depend for our continued growth and prosperity. The agricultural colleges of Minnesota, North Dakota and South Dakota, the state farmers' institutes under the leadership of O. C. Gregg, are powerful and generally recognized factors, although their far-reaching importance is only just beginning to be suitably understood and appreciated by the public

It is safe to say, however, that comparatively few have given thought to the obligation under which the whole northwest lies to the private enterprise which has led to the introduction of varieties of seeds suited to our climate and by means of which the farming operations of the northwest have been greatly enlarged and safe guarded.

Mr. Northrup in his paper generously gives credit for this to the entire northwestern seed trade, but it is a fact well known to those acquainted with the circumstances, that the most important of these varieties have been introduced by the Minneapolis firm of which he is a member.

It is not too much to say that through the new and improved varieties of seeds introduced by that firm during the past twenty years millions of dollars have been added to the permanent value of northwestern farm lands. Through the knowledge, enterprise and well directed efforts of this firm yields have been increased, the scope of production greatly enlarged, and the raising of live stock placed upon a secure and profitable footing.

Of such firms as Northrup, King & Co., it may truly be said, "They deserve well of the state."

The above is a striking exception to the old saying that "A prophet is not without honor save in his own country," and is a tribute of which any firm may be justly proud. We are pleased to call our readers' attention to the advertisement of Northrup, King & Co., the Minneapolis Seedsmen, which appears in another column of this issue and to commend that firm as eminently worthy of the confidence of seed buyers.

Ground Green Bone, the Ideal Poultry Food.

Fresh cut green bone is the ideal egg-producer of all foods, because it contains a greater degree of all of the constituent elements the hen needs to make eggs. It is especially essential as a winter ration to take the place of the feed which nature so lavishly supplies to fowls in the summer. Every fowl in the flock will grow stronger and healthier with a regular feed of cut green bone. Poultry, like people, need a VARIETY of foods. They eat cut bone with eagerness. They become more profitable in proportion as they are better fed. Analysis, as well as practical experience, proves that green bone is extremely rich in egg-producing and muscle-making material—nothing equals it in these respects.

One authority says: "The bone cutter is as necessary to the poultryman as his feed mill. It enables him to use an excellent and cheap food, and gives him a profit where he otherwise might be compelled to suffer loss." Experience proves that a DANDY GREEN BONE CUTTER makes poultry pay—it makes hens lay in the winter when eggs are high.

The DANDY is manufactured by the Stratton Manufacturing Co., of Erie, Pa., who will be glad to send you a handsome booklet describing their full line of bone cutters, which they sell on trial and guarantee in every respect, with a broad guarantee. Write them before you buy.

If you want alfalfa seed this spring, or Maccaroni wheat, brome grass, kaffin corn, Russian speltz, sorghum; in fact any kind of tree or farm seed that is adapted to the Western plains country, there is no better firm to look to than the Kansas Seed House (Barteldes & Co.) at Lawrence, Kan. The same firm has houses and is known as the Colorado Seed House and Oklahoma Seed House at Denver and Oklahoma City, respectively. They are advertising, as usual, Western Seeds for Western Farmers. That means trees, grass and grain seeds that are indigenous to the western soil and climate. The firm has come up with the great Western farming regions. It is an old, reliable concern. An elegant catalog for 1905 will come free to any address if you write for it. Look up the advertisement and address the house nearest you.

A Big Real Estate Business.

A. P. Tone Wilson, Jr., Topeka, Kan., whose advertisement appears in our real estate department, writes that he is preparing to do a larger business for the coming season than he has ever done before. Therefore he has increased the number of papers in which he is advertising, and this more extensive advertising will of course give him a better opportunity to dispose of real estate. We recommend that Fruit-Grower readers who contemplate buying or selling property of any kind write to Mr. Wilson and investigate his plan. His extensive business puts him in touch with all kinds of propositions, and he may be in position to do you much good. Mention The Fruit-Grower when you write him.

HIGH GRADE HAIR SWITCHES

FIRST QUALITY HUMAN HAIR, none better. (ordinary colors) at the following prices:

2 oz. 20 inches, $0.90 | 3 oz. 24 inches, $2.25
2 oz. 22 inches, 1.25 | 3½ oz. 26 inches, 3.25
2¼ oz. 22 inches, 1.40 | 4 oz. 28 inches, 4.00

Grays, Blonds, etc., ¼ to ½ more. Send sample of hair, we will match perfectly. SWITCHES sent by mail on approval, to be paid for when received if satisfactory; otherwise return to us by mail. Money refunded if desired. Illustrated Catalogue of Switches, WIGS, Curls, Bangs, Pompadours, Waves, etc., FREE.

ROBERTS SPECIALTY CO., 112 & 114 Dearborn St., CHICAGO.
THE OLD RELIABLE HAIR GOODS HOUSE.
We sell more faultless fitting WIGS than all other dealers in Chicago. Our hair goods have been the standard for many years.

Are You Interested in the South?

DO YOU CARE TO KNOW OF THE MARVELOUS DEVELOPMENT NOW GOING ON IN

THE GREAT CENTRAL SOUTH?

OF INNUMERABLE OPPORTUNITIES FOR YOUNG MEN OR OLD ONES—TO GROW RICH?

Do you want to know about rich farming lands, fertile, well located, on a Trunk Line Railroad, which will produce two, three and four crops from the same field each year, and which can be purchased at very low prices and on easy terms? About stock raising where the extreme of winter feeding is but six (6) short weeks? Of places where truck growing and fruit raising yield enormous returns each year? Of land where you can live out of doors every day in the year? Of opportunities for establishing profitable manufacturing industries; of rich mineral locations, and splendid business openings?

If you want to know the details of any or all of these write me. I will gladly advise you fully and truthfully.

G. A. PARK, General Immigration and Industrial Agent

LOUISVILLE & NASHVILLE RAILROAD CO.
LOUISVILLE, KENTUCKY.

FRISCO SYSTEM

FRISCO SYSTEM
Chicago & Eastern Illinois R. R.

Double Daily Trains BETWEEN St. Louis & Chicago

MORNING AND EVENING

From LaSalle Street Station, Chicago.....9:50 a. m.—9:10 p. m.
From Union Sta. (Merchants Bridge) St. Louis, 9:30 a. m.—9:46 p. m.

Morning or evening connection at both termini with lines diverging.
Equipment entirely new and modern throughout.
A DOUBLE-TRACK RAILWAY.
Equipped with practical and approved safety appliances.
Substantially constructed.

Can You Ask For Anything Better

Than a three thousand dollar annual income on a farm investment of nine thousand dollars?

Owing to ill health, Doctor Merriman has decided to sell his widely known fruit farm near Painesville, Ohio, easily accessible to Cleveland, and will sell at a price far below its actual value.

This farm contains eighty-four acres of clay loam soil, perfectly adapted to raising all kinds of fruits, berries, vegetables, grass and grain. Price nine thousand dollars, one-half cash and balance on long time.

Aside from supporting a family of four persons, and keeping three horses and three cows, the farm will bring in from its various products over three thousand dollars per annum.

Pleasantly located; fine view of surrounding country and a sweep of about fifty miles of Lake Erie. Fine neighborhood; good 9-room house with good cellar; good barn; complete packing house; good granary, tool house, poultry house, etc.

Eighteen acres of grapes in first class condition; four hundred bearing pear trees, best varieties; three hundred young bearing peach trees; seven hundred bearing plum trees; thirty hearing cherries; young apple orchard of three hundred trees; forty quinee bushes in bearing; one-half acre red currants in hearing; twenty-five acres of timber; good pasture with living water; seven and one-half acres growing rye seeded to timothy.

Everything on this farm is strictly first-class. Money has not been spared in making it one of the best fruit farms in the Lake Erie fruit belt; trees all young and in perfect conditiou; every detail of an up-to-date fruit farm has been looked after and perfected. Farm is actually worth fifteen thousand dollars. Perfect title, immediate possession.

H. E. COOK,
18 Blackstone Bldg., Cleveland, Ohio.

Fruit FARMS CHEAP

Fruit-growers are making fortunes in North Louisiana. Improved farms can be had for from $6 to $15 per acre. Unimproved, $3 to $5 per acre. For information address A. R. Holcombe, Secretary-Manager Shreveport Progressive League. Shreveport, Louisiana.

We sell Direct to Planters at wholesale

GRAFTED PECANS

and **all** kinds of **nut trees.** New **Plum** —**MAYNARD**—the money-maker. "The best that ever happened." Send for description.

OAK LAWN NURSERY. HUNTSVILLE, ALA.

British Columbia Fruit

TOOK THE **GOLD MEDAL**
Higbest Award
at the London, England Horticultural Society's Exhibition, 1904

LAND $2.50 Per Acre

Suitable for growing PEACHES, PRUNES, GRAPES, APPLES, PEARS, Etc.

Along the lines of the
CANADIAN PACIFIC RAILWAY in
Southern British Columbia
Delightful Climate, Excellent Transportation Facilities and Markets.
For maps, descriptive pamphlets, etc., address
J. S. DENNIS, B. C. Land Commissioner, Canadian Pacific Railway. Calgary, Alberta, Canada.

The A B C of Bee Culture.

The A. I. Root Company, Medina, Ohio, have published a new edition of their book, the A B C of Bee Culture, which is brought strictly up to date, and should be in the hands of every bee-keeper. The earlier edition of this book was complete, but the new edition is in every way better. The publishers state that one hundred thousand copies of the book have been printed, which fact in itself is almost sufficient guarantee of the value of the book. This firm furnishes all sorts of bee supplies, publishes a good bee paper, and coming in actual contact with bee-keepers everywhere they naturally know the problems which confront this class, and their book is therefore better prepared to meet their needs. If you are interested in bee-keeping, write the A. I. Root Company, Medina, Ohio, about their supplies and this book.

Fruit Culture.

If you are interested in growing apples, pears, plums, grapes, strawberries, raspberries and other fruits it will pay you to send for the catalogue of Green's Nursery Co., Rochester, N. Y. This is a booklet of 72 pages, illustrating and describing fruit trees, plants and vines, also ornamental vines, plants and trees, and giving much information of interest to fruit-growers. If you request it you will also receive a sample copy of Green's Fruit Magazine.

This company has been established 25 years and has a capital of $100,000. It has a national reputation for fair dealing. Address, Green's Nursery Co., Rochester, N. Y.

Have You Real Estate You Want to Sell?

N. B. Johnson & Co., Kansas City, Mo., who have been advertising in The Fruit-Grower for some time, have sent us a copy of a pamphlet issued by the firm, which explains their plan of selling real estate. This firm, with headquarters at Kansas City, has representatives in many of the leading cities, and has unusual facilities for handling real estate. In the pamphlet we received are many testimonials from persons in various parts of the country who have sold property through this firm. Fruit-Grower readers who wish to buy or sell real estate of any kind will do well to write to N. B. Johnson & Co., Kansas City, Mo., mentioning The Fruit-Grower when they write.

Lee's Poultry Supplies.

We have received from the Geo. H. Lee Co., Omaha, Neb., several of the booklets which this firm issues by the thousands, which have proven of great value to poultry raisers everywhere. We recommend that every reader of The Fruit-Grower send for some of these. In the lot we received was a catalogue of the Mandy Lee incubators and brooders, a booklet entitled "A Thousaud Dollar Egg," and another booklet for hog raisers. The Geo. H. Lee Co. manufactures incubators and brooders, Lee's Lice Killer, Lee's Hog Remedy, and other preparations, and in addition carry a full line of poultry supplies. These booklets are sent free to those who ask for them—and they are all worth having.

Importance of Catalogs.

This is the season when manufacturers are offering their catalogs. Among nurserymen's catalogs the one issued by the Sioux City Seed and Nursery Company, of Sioux City, Iowa, is worthy of mention. It is larger and better than ever. We find in it suggestions that are all practical and can be applied by any farmer or fruit-grower. It shows how to beautify the farm with trees and shrubs. It tells about the protective value of windbreaks. Tells how to start new orchards and how to prune the bearing ones so as to get healthy and delicious fruit. It gives suggestions on spraying and other methods of fighting the numerous pests that are arrayed against the profits of farmer and fruit-grower. Every person who owns ground needs this book, whether they plant trees, raise strawberries and other small fruits, whether they desire shrubs, roses, bulbs, perennials, etc. The Sioux City Seed & Nursery Co. sends one free to all who mention this paper.

An Iowa Horticulturist.

Some time ago we called the attention of our readers to the advertisement of the M. J. Wragg Nursery Co., of 300 Good Block, Des Moines, Iowa. We hope that many have secured their catalogues and enjoyed the same pleasure we experienced in examining same. It certainly commends itself to the public, for it is "chuck full" of horticultural information. Just such things as every fruit-grower and home-maker ought to know. It is gotten up with many half tones of photographs, which give our readers a correct idea of the extent of their business. Their manager, M. J. Wragg, is well known as an up-to-date and responsible horticulturist, which is evidenced by the many offices of honor and trust which he has occupied, from the office of President of the Iowa State Horticultural Society down to Director of that body. Any one who has filled these positions must enjoy the confidence and respect of the horticulturists generally. A postal card will get you a copy of the catalogue.

I have not time to get up a club, so will make presents to some of my friends of a paper worth five times its cost.—H. A. Lee, Enid, Okla.

Let me congratulate you on having made The Fruit-Grower the best paper of the kind extant.—W. L. Murdy, Butte, Okla.

Something That Endures!

As Long as the World Stands Your Lands Are Secure

No other form of property is as safe. All wealth is traceable back to real estate. Unimproved lands are everywhere steadily advancing. Are you adding to your income thereby. WE OWN OR CONTROL many large bodies of the finest fruit, timber and mineral lands

IN SOUTH CENTRAL MISSOURI IN THE ELBERTA PEACH BELT AND "LAND OF THE BIG RED APPLE,"

lying mainly in Howell, Shannon and Douglas Counties, which we are offering at nominal prices in any sized tract to suit purchaser. An abstract showing a perfect title furnished free with every tract. Large tracts of grazing lands suitable for ranches also for sale. If you are looking for a good investment, or if you want a home where land is cheaper (considering its intrinsic value) than anywhere else, where winters are short and mild, climate unexcelled, water pure and abundant, where hot winds and blizzards are unknown, write for our booklet telling all about the country.

N. F. MURRAY & SON, OREGON, MISSOURI

We Sell Farms

RANCHES, HOMES, OR OTHER PROPERTY, NO MATTER WHERE LOCATED

TO YOU WHO WANT TO BUY
Before you buy a farm, ranch, home or property of any kind, anywhere, tell us what you want and where you want it. We can fill your requirements.

TO YOU WHO WANT TO SELL
If you own a farm ranch, home or other property, and you desire a quick sale, send us description and price at once. We quickly find cash buyers.

N. B. JOHNSON & CO., H-505 Bank of Commerce Building, KANSAS CITY, MO.

Fruit Farms and Fruit Land for Sale

This department is for the benefit of Fruit-Grower readers who wish to buy, sell or lease farm lands. All advertisements of this nature will be inserted for a charge of 2 cents per word, each initial and number to count as a word. No display type will be used in ads which are accepted at this reduced rate, and all charges must be paid in advance. The rate of 2 cents per word is for each insertion. Count the words when sending your advertisement, and the cost can be easily ascertained. THE FRUIT-GRIWER CO., St. Joseph, Mo.

Large bodies of land and ranches; timber land, fruit and truck farms in Kansas, Oklahoma, Texas, Old Mexico, Louisiana, Arkansas, Southern Missouri, Colorado, New Mexico and California. Tell me what you want and where you want it and how much money you will invest if suited and I will send you list of bargains of the kind you want in that locality. I also have small farms and ranches in all parts of said States. I am working above mentioned territory thoroughly. Write me and see how well and how promptly I will serve you. I have land at 35 cents to $35 per acre.

GEORGE W. MORRIS, LYNDON, KAN.

FOR SALE—Farm of 320 acres, one and a half miles from Winchester, Kan.; either quarter section will be sold separate if desired. On the southwest quarter is a house of 8 rooms, a cottage; a barn 24x40, corn crib 10x40, driveway between, all under shingle roof; hog pens, smoke house, 5-ton scale, 2 wells, cistern, corn crib; 500 Missouri Pippin, 250 Gano apple trees, set out nine years ago; 550 Jonathan set out two years ago; 12 acres in strawberries, blackberries, red and black raspberries, two packing sheds. On the southeast quarter are 6,000 Ben Davis, 1,800 Gano apple trees, set out ten years ago; 500 Gano, set out two years ago. Living water the year round on every 40 acres if wanted. Timber on the two quarters. For particulars write WM. BOOTH, Winchester, Kan.

Do you want a profitable home in the heart of the Rocky Mountains, elevation 5,800 feet, in a climate the most healthy and equable in America, on this parallel? I can sell it to you. A fruit farm of 25 acres, under irrigation, in Delta County, Western Colorado, celebrated for crops of apples and peaches every year by irrigation; nine acres in winter apples, ten years old, and Elberta peaches from four to seven years; eight acres in alfalfa. This orchard grew 2,000 bushels of apples and 3,500 boxes of peaches, crop of 1904, and is famous locally for regular yield of big crops. Water-right the best. House, barn, cistern, rural delivery and telephone, half mile to town and railroad depot. Orchards with water-right may be bought here at prices from $200 for two years set to $600 per acre in full bearing; income from peaches from $300 to $500 per acre; grain and vegetables a success; sugar beets net from $40 to $70 per acre. Study the foregoing facts and figures, and if you mean business, write for other important items and price of the farm. I. O. BRANHAM, Hotchkiss, Colo.

FOR SALE—A fine fruit farm of bearing fruit trees and small fruits; 80 acres, in a healthy location adacent to one of the best home markets in North Central Missouri. Three miles from court house, and a good trade all ready for the buyer; good public roads, telephone; farm well watered by springs; good buildings, three good cellars, apple house full of barrels; a general succession of large and small fruits; land in a high state of cultivation. On account of wife's injuries from team running away, want to sell. For particulars write C. B. Green, 1106 East Fifth Street, Sedalia, Mo.

FOR SALE—A 10-acre fruit farm, one mile from railroad station, ten miles from Kansas City; 5-room dwelling; good well, barn for 8 head of stock and other outhouses; 600 pear trees; 150 Keiffer and 50 Duchess in hearing; 600 peach trees hearing; 100 cherry and plum, 50 apple; 1 acre grapes; 1 acre strawberries; 300 currants and gooseberries. For terms and further particulars, address or apply to MRS. MEARRY ZINN, Barry, Clay Co., Mo.

We are the largest dealers in real estate in Grand Valley, the famous peach, apple and pear growing section of Western Colorado. Orchards here 8 years old net the growers from $500 to $700 per acre. The climate is the best in the world and is a specific for lung and throat troubles and asthma. Write us for information. The Home Loan & Investment Co., 357 Main Street, Grand Junction, Colo.

FOR SALE—40-acre fruit farm, 2 miles from Olney, Ill.; 25 acres in good bearing apple trees, besides other fruit; near school and church; good 6-room house and cellar, new barn and outbuildings, all in first-class condition; plenty of good water. Price $2,800. J. H. MITCHELL, Olney, Ill.

WANTED—Men, or families, with, or without means, desiring to move to Texas, and buy, lease, or rent lands and grow cotton, corn, fruits and vegetables. W. S. GIBBS, Huntsville, Texas.

Furnas Fruit Farm, Brownville, Neb., for Sale—Owing to physical inability to give proper care and attention, I will sell my fruit farm. All in full bearing, and prime condition. Even for the unfavorable fruit conditions of 1904, it paid a good per cent profit. For particulars, address ROBT. W. FURNAS, Brownville, Neb.

FARM FOR SALE—120 acres; 70 meadow; 20 orchard; balance timber and pasture. Frame house, barn and granary; walled cellar; frame cellar house; good well; pond and spring; none of it rocky; all can be cultivated; 2½ miles from Seymour, Mo. For particulars address Box 33, Seymour, Mo.

NURSERY FOR SALE—Grangeville Nursery and Fruit Farm, six acres, just outside the Incorporation; 15,000 young trees and other general nursery stock. One-half acre strawberries; good business established; fine house, with electric lights and city water; barn and other outbuildings; photo of house and grounds, if desired; no irrigation necessary; fine prairie country; no nursery within 75 miles; best of reason for selling. Address GRANGEVILLE NURSERY, Grangeville, Idaho.

Lifetime Chance for Farmers and Sons.

Our success depends in having experienced farmers locate on our land, 38 miles south of New Orleans, La., on the Bayou La Fourche. This land is virgin humis alluvial, six-foot thick, cleared and drained by 10 miles of canals; two crops guaranteed yearly. Special cars to ground for investors in February; $10.00 per acre, cash, as long as our 10,000 acres lasts. This is a lifetime chance for the farmers and sons. Investigate early. WM. B. JENNISON, care Junk & Nickles, Clinton, Ill.

FOR SALE—Cheap, Easy Terms, 40-acre orchard, 8 years old, well taken care of, in beautiful Payette Valley near Payette, Idaho, 28 acres in Jonathans, Arkansas Black, Peaches, etc., plenty water, fenced, small house, large barn, well, clear title to property. Owners East and cannot give personal attention. For full particulars address, L. G. Hauensteln, 628 Equitable Bldg., Denver, Colo.

JUICY FRUIT

The place to raise it is South Missouri and North Arkansas. I have sold 10,000 acres fruit land this last year, also 100 improved fruit farms.

Here's a Corker—160 acres, three-quarters mile R. R. town, Howell Co., Mo.; 6,500 Jonathan, Ben Davis, Gano and Wine Sap apples, 5 to 8 years old; 4,500 peach, mostly Elberta, 3 to 7 years; 1 acre grapes; 20 acres timothy, 5 corn; on main road; big pond and 300 barrel cistern; cold storage for 20,000 barrels; common tenant house. Price, $8,000. Cleared $1,800 from peaches 1904. Better see this.

Snap for Small Farm—40 acres, Barry Co., Mo., 1½ miles Purdy, a R. R. town; 9 grass, balance corn and fruit; 25 acres apple orchard, 10 years old; 5 Elberta peach; 4 acres strawberries; 4-room house, barn, 30x40; fine water. $1,600; only $1,100 down, balance easy.

See me for farm snaps of all kinds—Missouri, Kansas, Arkansas, Oklahoma and Texas. Big list free. Up-to-date map, either state, nicely framed; pocket size, 10c, stamps or silver.

LOTT "The Fruit Land Man,"
127 W. 8th, Kansas City, U. S. A.

FOR SALE—Fine fruit farm, 97 acres of burr oak land, mostly cleared; two thousand apple trees, all winter varieties, from 3 to 5 years set, healthy and in good condition; 80 cherry trees, all bearing; plenty of small fruit; 50 acres of farm land; rest tame pasture; buildings fair; 2 wells, 2 springs; a fine chance for dairying. Spacious front yard dotted with evergreens, surrounded by tall burr oak grove. Terms reasonable. You can't afford to miss this chance. For further information write to A. S. WORTH, owner, Mondamin, Iowa.

A GOOD PLACE TO LOCATE—On plateau of Cumberland Co., Tennessee, where fruit, corn and potatoes grow to perfection. No cyclones, no floods, no great storms of any kind; less wind than any place you ever lived in; no mosquitoes; perfect natural drainage, best freestone water; very healthy, delightful summers; can plow all winter; abundance of free range for stock. Land $3 to $10 per acre. Write A. E. Payne, Crossville, Tennessee.

Farm For Sale

360 acres prairie land, 100 acres under fence; big house, 6 rooms; 60 acres in cultivation; good water; 2½ miles to railroad town; good schools and churches. Price per acre, $15, if sold soon.

DAN McGAHHEY, Stuttgart, Ark.

Land for Fruit

TRUCK, STOCK RAISING AND GENERAL FARMING

located on both sides of M. & O. R. R. in Alabama and Mississippi. Price from $2.50 to $6 per acre. Terms—On less than 160 acres, one-fourth cash, balance 1, 2 and 3 years. Larger tracts, one-fourth cash, balance in nine equal yearly payments. LAND SEEKERS' EXCURSIONS on 1st and 3d Tuesdays of each month. Write for ILLUSTRATED FOLDER and MAP, sent free.

Alabama Land & Development Co.

HY. FONDE, President.
GEO. KILBORN, Sec'y.
59 St Francis St., Mobile, Ala.

Attention FARMERS and RANCHMEN

Are you looking for a home in a mild and beautiful climate where fruits, grains, grasses and vegetables grow and yield large returns; where the grazing season is long and the feeding season short; where the waters are pure and the soil rich? Then come to Marshfield, Webster Co., Mo., and let me show you. I have improved stock and grain farms, ranch lands and fruit farms. Write and tell me what you want and I will send you full description with prices and terms.

FRANK M HAMEL,
Marshfield, Webster County, Missouri.

I can sell your real estate or business no matter where located. Properties and business of all kinds sold quickly for cash in all parts of the United States. Don't wait. Write today, describing what you have to sell and give cash price on same.

A. P. TONE WILSON, JR.
Real Estate Specialist,
413 Kansas Avenue.
TOPEKA, - - KANSAS.

Before You Buy any real estate in any part of the United States, write for my free list. Write me what locality you are interested in and I guarantee to fulfill your requirements and save you some money besides. **WM. T. BROWN,**
218 Brown Building, Lancaster Penna.

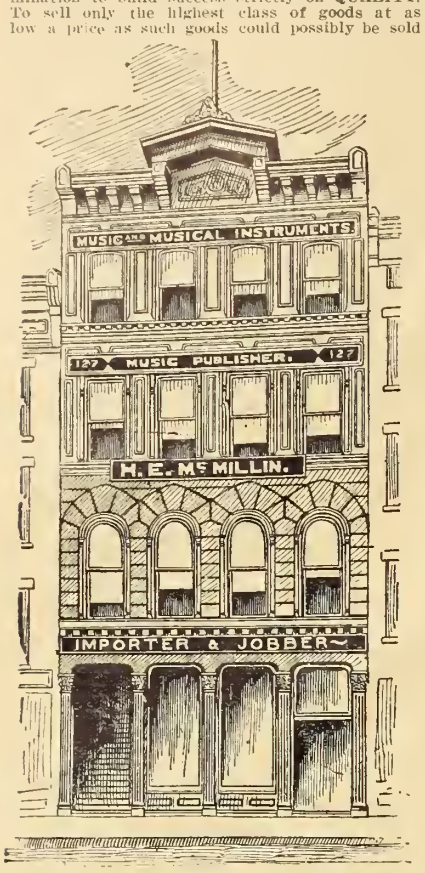
Virginia Homes

You learn all about Virginia lands, soil, water, climate, resources, products, fruits, berries, mode of cultivation, prices, etc., by reading the VIRGINIA FARMER. Send 10c for 3 months' subscription to

Box F. G., Farmer Co., Emporia, Va.

A MUSICAL NOTE.

Twenty years of successful business with a record of continuous growth and expansion certainly signifies something. It means that merit and fair dealing must have been back of every transaction. Twenty years ago there was established in Cleveland, Ohio a music house, by a practical music man with a fixed determination to build success strictly on QUALITY. To sell only the highest class of goods at as low a price as such goods could possibly be sold



for direct to the customer, with only one small profit from the maker to user.

Being a practical man he knew that Musical Instruments cannot be judged from the outside. Their merit is on the inside and unless made with care will be without quality, while they may look all right. His success and the fact that he daily receives cash orders from all over the world proves that his instruments are made with the care that is required to give them true musical quality, as well as handsome appearance.

H. E. McMillin, Cleveland, Ohio, manufactures, imports and retails "EVERYTHING MUSICAL." Therefore his customers get the goods direct from headquarters, with the guarantee that they will be just as satisfactory as if the customer came direct to the store and made his purchase in person. Mr. McMillin looks back over his twenty prosperous years with pardonable pride and forward to the future for a continuation of his business. His numerous customers always have a good word for his house. Mr. McMillin makes it a point to have every customer a pleased, satisfied customer. Write to him for catalogues of anything you may need in the music line, and you will readily understand why his business has grown to such proportions.

Remarkable Popularity of the World Famed Cornish Pianos and Organs.

The most popular instrumeuts in the world seem to be that Cornish Pianos and Organs if we are to judge hy the endorsements they have received during the last half a century from a quarter of a million satisfied patrons. We have been privileged to look over the testimonials recorded hy this substantial and successful concern and think that to reproduce some of them would not he uninteresting to those of our music loving readers; and they certainly justify the very strong announcements made in their advertiseent which appears in this magazine.

A short time ago, the United States minister to Corea, the Hon. Horace A. Allen, who is filling so creditably the difficult task of representing "Uncle Sam" in the very center of the storm whirl of the Russo-Japan war, wrote to Messrs. Cornish that his Cornish piano had stood a very severe test during nearly eigh. years' hard usage, in damp, unwholesome climate.

Recently one of the most notable firms of export merchants in New York City who have branches in India, Ceylon, China, and Japan, in sending an organ for a new customer of theirs in the interior of China, informed Messrs. Cornish that the goods were intended to be transported a thousand miles after arriving at Shanghai.

Recently Messrs. Cornish received the following letter from the Superintendent Minister of the Missionary Board in Natal, South Africa:

"I have pleasnre in stating that the organ manufactured by Messrs. Cornish for the new Wesleyan Methodist Church, at Dundee, is in every respect a most suitable instrument. The tone is rich and full and the compass all that can be desired."

The organist of the same church wrote a personal letter to the firm saying:

"I am unable satisfactorily to express my feelings with regard to this beautiful organ. The new church is a large one for this country—capable of seating 500 people, and the organ is easily capable of filling the building with a grand volume of music."

In addition to an increasing domestic trade, there is a steady demand for Cornish Pianos in Australia, New Zealand, South Africa, the East and West Indies and even in Iceland and Finland.

GOOD SPRAY PUMPS.

Everyone who is successful in the work of spraying emphasizes the importance of having a machine which will apply the spray mixture in the form of the finest mist. When applied in a coarse stream the mixture will run off the foliage and the effect will be largely lost. Care must be exercised, therefore, in the selection of a pump for spraying. In selecting such a pump Fruit Grower readers will do well to consider the line of machines made by E. C. Brown & Co., Rochester, N. Y. This company makes all styles of spray pumps, from the smallest size to the large power sprayer, operated by gasoline engine. But all of them are capable of producing the fine mist necessary for doing good work. This firm has an advertisement in this issue, which shows some of the styles manufactured. It will be seen that all growers can be supplied, from the man who wants only a small pump for garden use to the commercial grower who wants a large power sprayer. We suggest that our readers write E. C. Brown & Co., for their catalogue. Tell them the size and age of your orchard, and they will be able to advise a style of pump which will be best adapted to your needs.

One feature of the pumps manufactured by this firm should be mentioned here, and that is that while their pumps are very powerful and produce the finest mist, they are at the same time more easily operated than many pumps which do not produce any considerable power. Attend to this matter at once, so that you can get your pump before it will be needed. The firm is in every way reliable, and does a big business with fruit-growers everywhere. When writing the advertiser, mention The Fruit-Grower, if you please.

TARLATAN FOR PEACH PACKAGES.

Every fruit-grower realizes the importance of getting his fruit to market in such shape that it will present the best possible appearance. To this end attractive packages, careful packing and handling, etc., are employed. Among the helps in marketing peaches many growers have found the use of red tarlatan a very important one. This tarlatan is not used to sell poor peaches for good ones, as many of the writers in funny papers would have us believe. But after carefully packing good peaches in good baskets, the tarlatan is used to help get the fruit to market in as nearly the same condition as when it leaves the farm as possible. The tarlatan protects the fruit in many ways; it keeps the peaches clean, preventing the dust from settling thereon; it keeps the fruit firmly packed in the basket, so that it does not roll around and be bruised, and at the same time it prevents the expressmen and those who handle the fruit in transit from removing any of the fruit from the baskets. In other words, it helps the fruit to get to the consumer in just the same condition it was when it left the farm. In this issue James Thompson & Co., 16 Greene street, New York, and 113 East Kinzie street, Chicago, advertise their line of tarlatans for this purpose, and call the attention of peach growers to the same. This firm has furnished great quantities of this tarlatan to peach growers, and those who used it last season were more than pleased. The samples of tarlatan we have seen from this firm were very strong, so that packages could be turned upside down, and still the fruit would be held firmly in the baskets. Look up the advertisement and write for prices and samples, mentioning The Fruit-Grower when you write.

"FRIEND" SPRAY PUMPS.

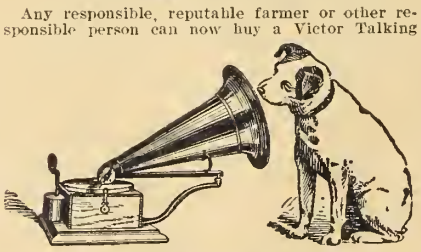
The Friend Mfg. Co., Gasport, N. Y., call attention in this issue to their line of spray pumps, and we are sure this announcement will interest Fruit-Grower readers. In the first place, this company is located in the heart of the apple section of New York state, and naturally the managers of the company know what is needed to make a satisfactory spray pump. Common spray pumps will not do the work which is demanded by New York orchardists, with their large trees and with their ideas of what constitutes good spraying. Consequently, pumps which stand the test there are well recommended to growers everywhere. In the advertisement of this firm appears a cut showing one style pump made by this firm, which is capable of great power with a minimum of effort on the part of the operator. This is a good point in a spray pump, as any one who has had experience will agree. Other styles of pumps are made, including several power outfits, which will interest commercial orchardists particularly. Look up the advertisement, and write the manufacturers, stating that you want catalogue of the pumps advertised in The Fruit-Grower.

MEDICAL ADVICE FREE ON CATARRH.

At this trying season of the year with its cold, snowy days, and penetrating winds, every sufferer from Catarrh should guard with extra care against the dangers that result from that common but treacherous ailment, for the cold, to turn at once to page 32, and read the raw days of spring will certainly bring peril of the worst sort to those who have neglected their Catarrh. We advise every reader of this paper who is troubled by Catarrh in any form interesting announcement of Catarrh Specialist Sproule of 324 Trade Building, Boston. This famous physician will give medical advice on curing Catarrh, absolutely free of charge, to all who request it, and he is known far and wide for his remarkable success in curing even the most obstinate cases. This offer is an exceedingly generous one, and we earnestly urge those who are victims of this ailment to write to him at once and obtain the medical counsel and information he so gladly gives free.

"His Master's Voice."

Any responsible, reputable farmer or other responsible person can now buy a Victor Talking



"HIS MASTER'S VOICE"

machine for $5.00 down and $2.50 a month. The instrument and one dozen records will be sent you on free trial if you write to the Talking Machine Co., Department K, 107 East Madison St., Chicago.

Forest Tree Seeds and Seedlings.

Tennessee is a great state for furnishing seeds and seedlings of many of the forest trees which are in greatest demand, and as a result a great industry has been built up in furnishing them to growers everywhere. The Forest Nursery and Seed Co., Irving College, Tenn., is one of the largest firms in this line of business, and is prepared to furnish a full line of seeds, seedlings, etc. This firm has advertised in our columns for years, and has done a big business with our readers. If you want Catalpa seeds or seedlings or anything of that kind, write the above firm, mentioning The Fruit-Grower when you do so.

Elsewhere in this issue will be found the advertisement of C. Moore & Son, Kellerton, Iowa. This firm has been breeding prize-winning seed corn for ten years, and have some extra good corn for sale. Anyone wishing to procure "Moore Seed Corn" should write at once, as the supply of good seed corn is limited.

Any one who would like to get a good piece of irrigable government land should carefully read the whole article on page 2.

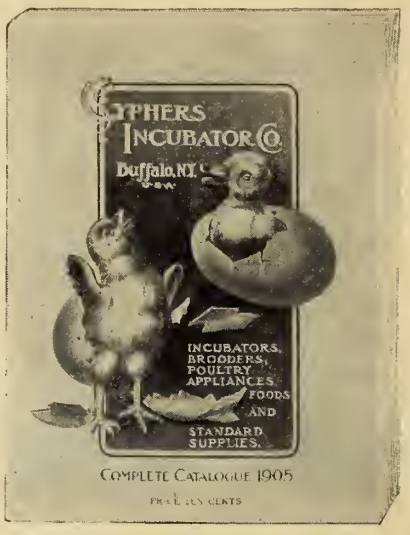
Protect your trees while you sleep with the New Ideal trap. It does the business. See advertisement on another page.

Good News for Poultry Raisers.

The Cypress Incubator Company of Buffalo, N. Y., are now sending out their new 1905 catalogue, which is the finest and most complete poultry catalog ever issued. That is because their 1905 lines of Incubators, Brooders and Poultry Specialties are better than ever before and this company's goods have always been the best on the market.

All their old patterns have been greatly improved and these most valuable features are patented so that they are found on no other machines.

Standard Cyphers Incubators pronounced them



"practically" perfect incubators. The Cypress Company have reduced the prices of their Standard Incubators, even with all these great improvements added. This was made possible by reducing the cost of production. They increased their capital in order to buy closer and added new labor-saving machinery to their factory. Having accomplished a big saving in this way, they are going to give their customers the benefit and take this saving off the prices of their machines. For the coming season they positively will share their profits with their customers.

Don't fail to send for their 1905 catalogue, a book of 228 pages, 8x11 with six special chapters in profitable poultry keeping. There are more than 450 illustrations in the book, including portraits of best known authors, judges, fanciers, and the owners and managers of some of the largest and most successful poultry plants in the world. It is a good guide to successful poultry raising.

The Cyphers people are offering the book free, to everyone sending his name and the names and addresses of two friends who are interested in poultry for profit. Kindly name this paper when writing and address your letters to the Cyphers Incubator Co., Buffalo, N. Y.

The Three W Strawberry.

This strawberry, which was originated by Mr. W. W. Wallace, Harriman, Tenn., has been well tested in the locality where it originated, and growers there prefer it to other sorts, on account of its fruitfulness, good quality and its shipping qualities; plant is vigorous and healthy. Mr. W. A. Mason, Harriman, Tenn., writes that he has secured the right to introduce this berry west of the Mississippi River, and would like to hear from strawberry growers everywhere who wish to test this variety. This berry is claimed to be desirable for those who grow berries for home use or for market, as it has the qualities which strawberry growers are now demanding in a variety. Our readers will do well to write to Mr. Mason in regard to securing plants of this variety.

Homeseekers' Excursions.

The Chicago Great Western railway will on the first and third Tuesdays of each month, January to April inclusive, sell homeseekers' tickets at one fare plus $2.00 for the round trip to points in Alabama, Arkansas, Arizona, Colorado, Florida, Georgia, Indian Territory, Iowa, Kansas, Kentucky, Louisiana, Mexico, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, Tennessee, Texas, Utah, Virginia, and Wyoming. For further information apply to M. F. Montgomery, City Passenger and Ticket Agent, 414 Felix street, St. Joseph, Mo.

Good Nursery Stock.

Marshall Bros., proprietors of the Arlington Nurseries, Arlington, Neb., write that their stock of trees and plants for the coming spring trade is unusually fine, and that they are prepared to fill orders in any quantity. These gentlemen are not only nurserymen, but are orchardists as well, and are competent to give advise to those who contemplate planting, especially in Nebraska, Iowa and adjoining states. We recommend that our readers look up the advertisement of this firm in this issue, and write for a copy of the descriptive catalogue, which will be sent free to those who mention the Fruit-Grower when writing.

I consider The Fruit-Grower one of the best helps for the successful rancher that can be found.—J. N. Dotson, Cashmere, Wash.

You publish a most excellent paper and I await its monthly visits with as much solicitude as I do the visits of a friend.—W. R. Goodman, Granda, Colo.

W. H. Scott, Brice, Mo., sends what he says is a remedy for root rot. He says he saved some trees from destruction by this plan. He says that when leaves begin to turn yellow in spring and summer, remove the soil to a depth of about six inches; then stir a heaping spoonful of common baking soda in a quart of water, and pour around the trees. Mr. Scott wants others to try the plan.

FREE!
DR. WARNER'S
LATEST SCIENTIFIC DISCOVERY FOR THE APPLICATION OF THE MARVELOUS SUBSTANCE,
RADIUM
In the certain cure of many heretofore Incurable diseases, such as RHEUMATISM, CATARRH, DYSPEPSIA, DISEASES OF THE EYE, KIDNEY, LIVER, BLADDER, BLOOD POISONING, ULCERS, ECZEMA, DISEASES PECULIAR TO WOMEN, ALL NERVOUS AND GERM DISEASES.

DR. WARNER'S RADIUM RINGS will destroy every GERM IN YOUR BODY, and you can prove it to your own satisfaction absolutely without cost. Simply send your name and address and we will send you, all charges prepaid, a trial treatment of Radium Rings, worth $2.00, ABSOLUTELY FREE.

No matter how long you have been afflicted, this wonderful new discovery, RADIUM, which you have heard so much about and which has stirred the whole scientific world one hundred times more than Electricity ever did, will cure you so you will stay cured.

By the application of DR. WARNER'S RADIUM RINGS to any part of the body, dead tissues spring to life, deadly disease germs are destroyed, and the purified blood, laden with marvelous Radium rays, sent bounding through bone and muscle, nerve and brain.

RADIUM RINGS act upon the entire system like the rays of the sun upon a half-blown rose. They make weak men strong and give pale women nerves of steel and the bloom of youth.

This is the first and only Radium remedy ever prepared which can be employed at home in the treatment of all germ diseases, such as Rheumatism, Catarrh, Diseases of the Eye, Kidney, Liver, Bladder, Blood Poisoning, Ulcers, Hemorrhoids, Eczema, Dyspepsia, Diseases Peculiar to Women, all Nervous and Germ Diseases.

FREE We will send this trial treatment of RADIUM RINGS, worth $2.00, to any sufferer, ABSOLUTELY WITHOUT COST, now or at any future time. Simply send your name and address and you will receive the Radium Rings, all charges prepaid, and if they cure you, tell your suffering friends.

Write now and tell us what you are suffering from, and you will receive by return mail a treatment which often cures many cases.

WARNER'S DRUG AND CHEMICAL CO.
356 Dearborn St. Dept. 40 Chicago, Illinois

Cuba
Florida
New Orleans
Tourist tickets now on sale to the resorts of the South and Southeast at greatly reduced rates. Liberal stopovers allowed. The
Illinois Central R. R.
with its handsomely equipped trains offers exceptional facilities for reaching the Sunny South.
For particulars and copy of illustrated booklets, giving detailed information about Cuba, Florida and New Orleans, write
W. H. BRILL
D. P. A. Ill. Cent. R. R., Omaha, Neb.

The "Five for $1.00" Offer
AND THE
"Three Yrs. for $1.00" Rate
WILL BE
Withdrawn May 1, 1905
Until that date we will accept your renewal and the names of four new subscribers one year for One Dollar. Read article on page 9, "The Family Circle."

WE WANT
5,000
AGENTS
One in every township. Position permanent. Nice income every month without interfering with your regular work. An honest proposition, and a money maker. Must send reference. No experience necessary.
R. E. LEE, Box 772, SIOUX CITY, IA.

WANTED---TWO MEN'S
names and addresses interested in Fruit-Growing. Our book, **Success and Failure in Orchard Growing, by a Practical Orchardist,** sent free to anyone sending same.
Messick T. F. Co., Quincy, Ill.

Volume Sixteen MARCH 1905 *Number Three*

WESTERN THE FRUIT-GROWER

ST. JOSEPH, MISSOURI

AN ILLUSTRATED MONTHLY MAGAZINE FOR PROGRESSIVE AMERICAN FARMERS

SUBSCRIPTION FIFTY CENTS PER YEAR THREE YEARS FOR ONE DOLLAR

Copyright, 1905, by
The Fruit-Grower Company
St. Joseph, Mo.

Gardening Number

MFD. BY Chas. A. Cyphers TRADE MARK

MODEL

Incubators and Brooders

Winning their way to more popular favor every day.

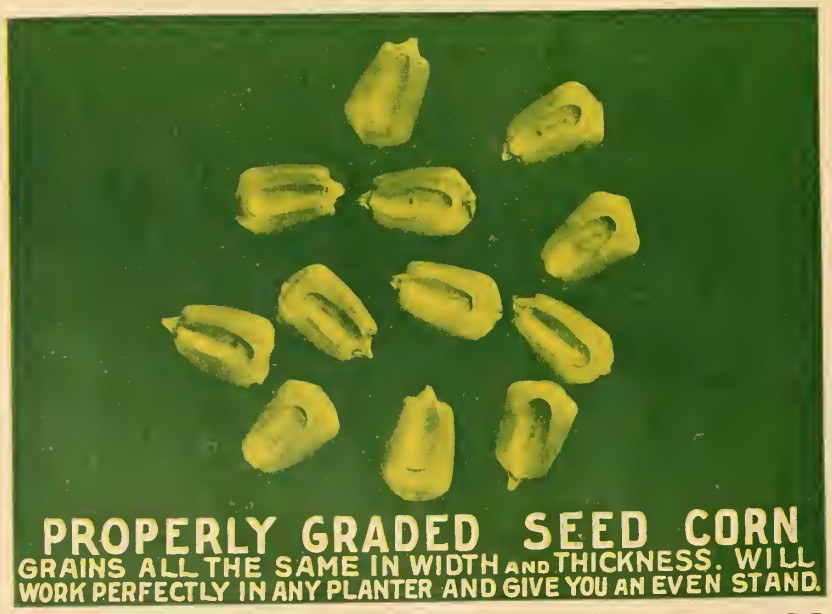
They are fast supplanting other makes with practical poultry-raisers—the men and women who make hatching a business for the profit there is in it. This shows that the Model Incubator *obtains results* sufficient to make the enormous expense of throwing out hundreds of others, and putting "Models" in their place a money-making, money-saving proposition. These level-headed business men and women would not incur such expense if it were not a demonstrated fact that it will pay them to do it. If the "Model" pays them, it certainly will pay you. If you are just contemplating buying your first incubator, let it be a "Model"—you will save experimenting and disappointments; your chance for success will be more certain; it's a machine that helps beginners.

The chief claims made for the Model Incubator are a perfect ventilating system and a regulating device more active and accurate than any other on the market. These features, with many minor ones, make the "Model" the most effective hatching machine ever devised. The thermostat is the heart of the incubator—its pulsations mean life or death to the germs in the eggs. The new Model thermostat means a greater per cent of fertile eggs brought to maturity than has ever been possible before. Don't buy an out-of-date incubator when the up-to-date "Model" costs no more, while with its improved features it saves time and labor with every hatch.

New Thermostat for 1905 Model Incubators
(Patent Applied for.)

I can furnish the names of many poultry-raisers who are installing Model incubators in their plants to replace machines that are not so good. They were the best they could get when they bought them—they are not good enough now to compete with the "Model," which takes less oil, less labor to run, and hatches more and stronger chicks—that's the test. Send for my new descriptive catalogue.

CHAS. A. CYPHERS, 3937 HENRY ST., BUFFALO, N. Y.



Free Samples OF THIS KIND OF SEED CORN

Would you like to have them?

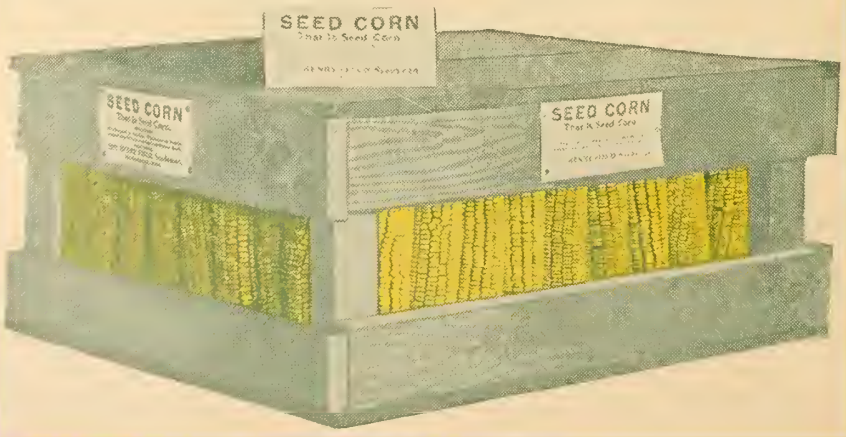
I have a number of varieties, specially bred to suit different soils, and will send you a full set of samples (10 in all), to choose from, for 5c in stamps to pay postage. Illustrated catalogue of seed corn and garden seeds FREE.

THOROUGHBRED SEED CORN $1.25 PER BUSHEL

Carefully selected and graded. Sacks free. Low freight rates.

Special prices to market gardeners on beans, peas, sweet corn, onion seed, onion sets, and cabbage seed. Send a list of your wants for me to figure on. Seed potatoes, 90c per bushel, extra fine. Seed sweet potatoes, $1.00 per bushel; $2.75 per barrel. Clover, Alsike, Alfalfa, Cowpeas and other farm seeds at special delivered prices.

HENRY FIELD, SEEDSMAN, BOX 115 **SHENANDOAH, IOWA.**



OUR NEW ILLUSTRATED FRUIT BOOK IS NOW READY

Business Established 1872

Capital Invested $60,000

"Nursery Stock," Two and Three Years Old

The New Haven Nurseries

(J. Bagby & Sons Co.)

420 ACRES DEVOTED TO THE BUSINESS

Over 2,000,000 Trees

All Budded or Grafted, by actual count, are now ready for spring shipment.

50,000 Ben Davis No. 1, 5 to 6 ft., for sale in Bargain Lots.

We want you to get our prices on Nursery Stock before you place your order. Prices cannot be published in this paper, but send us your name and address, and if convenient state about what your needs will be, and prices will be quoted low enough, considering quality of goods, to secure your trade. We pay freight and guarantee satisfaction. No nursery establishment in the west is better equipped for the careful, rapid handling of mail orders.

Our Apple, Pear, Peach, Plum, Cherry and Other Nursery Stock is good enough for some of the largest commercial orchardists, who have been buying of us for years. We please them; we can please you.

Write us and give us the opportunity to "show you." Write today for Catalogue and Price List.

The New Haven Nurseries

NEW HAVEN, MISSOURI

"The Bro. Jonathan Series" of Fruit Books

Now Ready

The five booklets of the "Bro. Jonathan Series" described below are now ready for mailing and will be sent postpaid on receipt of price, 25c each, or the set of five for one dollar. Every reader of The Fruit-Grower should have the entire set at hand for reference.

This is a series of booklets on different phases of fruit culture, which are intended to help those engaged in the pursuit of horticulture. They are not technical, in any sense, but, while writing in a popular style, are intended to be so practical that any one can understand them.

We are so confident that these books will be appreciated by the members of the Fruit-Grower family that we offer to send the set of five on approval to any paid-in-advance subscriber. If they are worth the money, send a dollar; if not return them. No less than five will be sent on these terms.

No. 1—Propagating Trees and Plants.

BOOKLET NO. 1 describes fully the process of budding, grafting, layering, etc., and as the different processes are shown by illustrations, one can readily understand how this work is done after reading this booklet. It is by Prof. W. L. Howard of the University of Missouri, with photographs by E. H. Favor, of the same institution.

No. 2—A Treatise on Spraying.

BOOKLET NO. 2 is by Prof. J. M. Stedman, entomologist of the Missouri Experiment Station. This booklet does not cover the whole field of insect life, by any means, but it does treat of some of the insects which are most destructive to fruit crops, and gives directions for their destruction. Many of the most destructive insects are shown in the illustrations, and the booklet will be very practical in its nature.

No. 3—How to Grow Strawberries.

BOOKLET NO. 3 is by Dr. J. C. Whitten, professor of horticulture of the University of Missouri. It treats of growing strawberries as a commercial crop or for home use, with illustrations which help to make everything clear even to the novice.

No. 4—The Home Garden.

BOOKLET NO. 4 is by Prof. Howard and Mr. Favor. It tells how to make hotbeds, cold frames, etc.; how to handle them to the best advantage, so that the greatest crops can be secured. The more common garden vegetables are discussed, together with some which are too often neglected. This booklet will be helpful to one who has even a small garden in the city, as well as to the farmer with a more pretentious garden spot.

No. 5—Packing and Marketing Fruits.

BOOKLET NO. 5 is by Prof. F. A. Waugh, of the horticultural department of Massachusetts Agricultural College, author of the well-known book on "Fruit Harvesting, Storing, etc." This book tells about the correct time for picking different fruits, describes different packages used in which to market them, with recommendations of best styles for different purposes. This booklet, like all the others, is fully illustrated.

These booklets will be sent postpaid for

25 cts. Each Or THE SET OF Five for $1.00

To Secure the Booklets Free

Any person who is a regular subscriber may secure one of these books free by sending one new subscriber at regular rate, 50c. Of course, the entire set may be secured on the same basis. Please remember that you must be a paid in advance subscriber in order to take advantage of this premium offer. Order at least one of these booklets at once. We are sure you will be so well pleased with it that you will want the entire series. Address,

The Fruit-Grower Co. St. Joseph, Mo.

THE BEST MARKET STRAWBERRY YET PRODUCED.

VIGOROUS GROWTH.
GREAT PLANT PRODUCER.
VERY PRODUCTIVE.
HEALTHFULNESS.

CARDINAL

LARGE SIZE OF FRUIT.
UNIFORMITY OF SHAPE.
FIRMNESS OF FRUIT.
VALUABLE FOR MARKET.

Department of Agriculture.

BUREAU OF PLANT INDUSTRY.

WASHINGTON, D. C., Nov. 19, '04.

THE TEMPLIN CO., Calla, O.:

DEAR SIRS:—"I have recently learned that you have purchased the entire stock, control and right of dissemination of the 'Cardinal' Strawberry from Mr. George J. Streator, of Garrettsville, Ohio. From what knowledge I have of this new berry I think you have obtained a valuable acquisition to the list of choice Strawberries which we now have growing. It was my privilege to examine specimens of this new Strawberry in 1903, when I found it to be a berry of excellent quality, flesh quite firm, juicy, flavor sub-acid, sprightly, aromatic. It is evidently a good shipper, and in every respect a very promising berry."

Yours truly,
G. B. BRACKETT.

THE TEMPLIN COMPANY.

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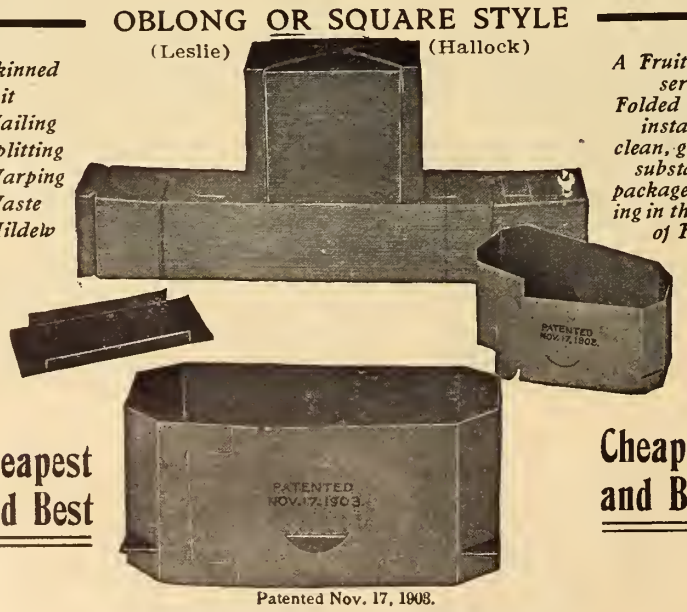

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The Western Fruit-Grower

An Illustrated Monthly Magazine For Progressive American Farmers.

Volume Sixteen ST. JOSEPH, MISSOURI, MARCH, 1905. Number Three

Mulched Apple Orchards

By F. P. Vergon, Delaware, Ohio

I have said so much on the system of grass mulch for fruit—of which I am pioneer—that it seems monotonous to me to say any more. I will take the short-cut across the field and be as brief as possible.

What may be used for mulch? Anything that grows out of the ground—if sufficiently decomposed so as not to be in the way about the orchard, will answer a good purpose. Grass mulch means not to plow or cultivate the orchard—after you once commence this system leave it continuously in grass—timothy not desirable. How the work is done: Mow the orchard once or twice a year, as the case may require; rake and drop opposite the trees, place it around the trees, out fully to the dip of the branches (a little farther is better), put on sufficient, so that grass or weeds will not grow through it—8 or 10 inches thick, evenly spread. If very dry and fluffy, put it on heavier—it will soon settle down. If the ground is impoverished, coarse manure is very much better. In this case let the grass lie where the machine drops it; it is surprising how trees will grow if not permitted to suffer for want of moisture—water is a wonderful factor.

Perhaps one of the greatest objections to this system—to the eyes of many—is that they cannot realize from crops in the early history of the orchard, but I believe there is no other way so successful to get the land back to its primitive condition—rich, porous and full of humus.

It should be remembered, if the location is a good one—good orchard land—rich—you are laying the foundation for an orchard that will last for generations, if this system is adhered to. It is true that trees can be grown quite successfully by the system of cultivation up to 10 or 12 years old. By this time the land is impoverished — the last fiber is burned out of the ground — humus entirely exhausted — something else must be done.

The mulch system is quite easily managed and not expensive until the trees are 10 or 12 years old. After this the problem — or expense — increases with the growth of the trees. (Fortunately the revenue increases as well.)

This is easily understood. As the trees grow larger the territory to mow decreases, and the territory to mulch increases; consequently a large portion of the mulch must come from some other source than the orchard. The greater part of my orchard was 16 years old last spring—planted 35 feet each way, on rolling table land; frost drainage good.

This territory was a beautiful blue grass pasture. I had grazed it with Shorthorn cattle 35 or 40 years. I am glad to say this same grass still grows in the orchard — was never plowed up, and we are out of the mud and dirt—year in and year out—in doing all the orchard work, which is a very great item in comfort and pleasure. With this system the trees have made uniform strong growth each year from the time they were planted. Some of the varieties that grow fastest, and spread most, the branches in many places are within a foot or two of coming together between the trees; this means a spread of about 35 feet on trees 16 years old last spring.

I believe this to be a remarkable growth. Of course, many of the slower growing varieties will not shake hands for many years. To supply the necessary mulch we seeded 20 acres of bottom land to mammoth clover, which yielded at least three tons per acre—was all used for mulch last summer. In addition I bought the straw of nearly 100 acres of heavy grain for the same purpose, and completed the mulch business where most needed just before winter set in.

This is somewhat expensive, but the work on the ground — except clipping, and let the grass lie where it is cut—is done for some years. After all, it is certainly cheaper than to cultivate every season—plow, cultivate, harrow all summer; in the fall seed with some catch-crop—that very often does not catch—and the orchard is washing away all winter and spring. In fact, it would be utterly impossible to carry on this system with our low-headed trees.

To keep the mice from the trees we use fine cinders that come from slack coal (no clinkers); a bushel, to one and a half per tree, according to size; leave it up in cone style at the base of the trees; it is not a fertilizer; nothing grows in it; always clean and don't wear out. A little wind or sun easily gets the snow away from the little black cones and gives the trees a safe and comfortable appearance. I have not lost a tree since we began using cinders. We tried wire screen, which perhaps looks more plausible than any of the many things that are suggested and used, but this is not satisfactory. After placing it around the tree—and pressed into the ground a little—it looked all right, but was heaved up by the frost an inch or more—just right for the mice to get in their work. I cannot emphasize too much the use of cinders. If I were not in hauling distance I would have it shipped by the carload — it costs but a trifle.

Rabbits have done us but little harm. They seem to be contented in cutting some of the tips from low branches of bearing trees.

We never pasture with any stock whatever; it cannot be done without damage to the orchard.

As to the results of the grass mulch system, it must be apparent that the ground is becoming richer all the time, with the best natural fertilizer, I will call it, for the welfare of the orchard. We have a reservoir of humus all over the orchard, but more especially under the trees, from the slow decomposition of the mulch on the under side. Especially here is where the bacteria delight most to put in their good work—where it is always moist.

Our orchard land is underlaid with shale, but quite deep; has a good depth of rich loam, by nature, with a brash red clay sub-soil (no gravel). Yet it has become so porous that practically all the rainfall is absorbed in the ground. I am very sure that the water never runs out from the mulch under the trees—not even on the side hills. How different it is with dust mulch, especially for drouths in the summer, when rain is so much needed. It frequently comes in torrents, the ground is puddled in an instant, and the water runs off almost as slick as from a goose's back; and if hilly or rolling (as usually the best orchard is), cuts out gulleys and washes much of the best soil into the valleys and streams.

In the next place the temperature, in a measure, is equalized; the ground under the mulched trees is never so hot in the summer and never freezes much in winter. It is quite possible for the roots to be injured by very hard freezing. Some time since I tested the temperature of the ground in the heat of summer, under the trees, with thermometers. Under one the ground was perfectly clean; the other was mulched. In each case the bottom of the thermometer rested on the ground, and both in the shade of the trees. I watched them for several days—at 6 o'clock a. m., 1 o'clock p. m. and 6 in the evening. The temperature did not run quite even, but the average was two and one-half to three degrees cooler under the mulched trees.

I was quite satisfied with this experiment—extreme temperatures are not best, and the escape of humidity is prevented. These conditions also hold good in spring-time—the ground warms up more slowly under the mulch and the bloom is retarded several days.

Things of less importance: Apples that drop are clean and usually not bruised. Even the leaves are caught up in the mulch in the fall and are where they will do the most good. It is quite generally conceded now that apples color better, and keep better. If this is the case, and I believe it is, they are of better quality, also, and I verily believe the trees are longer lived. I got on to this system from my pioneer days — clearing up the primitive forest. The leaves, bark, rotten branches, etc., were 8 to 12 inches deep and are added to each year, as decomposition is going on underneath. A better mulch could not be provided for the timber by any artificial means. Here nature has done her own plowing for thousands of years. I have never forgotten how hard it was to walk on this mulch in the winter time, being heaved up by the little needles of ice and fine earth—honey-comb fashion—underneath. The ground was always moist and rich under this mulch. It seemed to me this would be an ideal condition to have under my trees. Nature is certainly a wonderful teacher, and never weans her children. I think it was Shakespeare that said:

"Man exempt from public haunts finds tongues in trees, books in the running brooks, sermons in stones, and good in everything."

I am very sure with this system it is possible for the trees to ripen annual crops, and form fruit buds for the next year. Under other conditions the trees frequently suffer so severely from drouths that the crop is not well matured, and fruit buds are not formed for the following season.

Failure of crops very seldom comes

from freezing out spring-time—it is for want of bloom and vigorous trees. It has been found that well-grown apples contain over 90 per cent of water. I am glad that it is possible to retain it in the ground, otherwise we would not have so much water to haul out at harvest time. Last fall we harvested our eleventh or twelfth consecutive paying crop, annually, since 1893, or 1894. I can't recall the season, our crops were frozen in June as hard as rocks, when as large as big marbles. No human skill can overcome a calamity of this kind. This section of the orchard that is in question was 16 years old last spring, and yields 10 to 20 bushels per tree, sorted in the orchard, all handled in crates of one and one-half bushels (a tree can easily be measured), hauled in every day and stacked up in our cold storage.

Some trees in the section of the old orchard — 45 years old — of my own planting—have harvested 40 bushels and over per tree. These old friends do not bear so uniform crops any more. They can afford, in their declining years, to take a little more rest, as I am obliged to do myself. Yet they are still doing very good work. Younger trees are not always equally loaded with a crop. Trees that excessively over-bear and not thinned out, as they should be, are not likely to over-bear the following year, and some varieties are not so abundant bearers. This accounts for the variation—10 to 20 bushels—on the 16-year-old trees.

A few weeks ago, looking over the orchard, I saw plenty of fruit buds, as I thought, and cut small branches of different varieties and set them up in a jardiniere filled with water in a warm room. Now they are in bloom, and I am reminded of when the "apple trees are in blossom and the bobolinks are singing."

In conclusion, it seems to me quite possible to have the orchard in such a condition in supplying its every want, to overcome sufficiently the unfavorable elements, so as to have a crop annually. F. P. VERGON.

(Frult-Grower readers will appreciate this article from Mr. Vergon, who is one of the most successful of those who advocate the "mulch system" of orchard management. This orchard has been commented upon most favorably by the Ohio Experiment Station. We are glad to present herewith a likeness of Mr. Vergon, who is a remarkably well-preserved man. —Editor.)

The "Three Years for $1" Rate and the "Blocks of Five for $1" Offer will be withdrawn May 1st

Positively no renewals at the three years for a dollar rate will be accepted after the date above mentioned. We hope that all members of "The Family" who have not renewed up to this time will take advantage of these special rates during March or April.

If you are already paid in advance it will be a good investment for you to pay up for three years more at this rate, for it is very likely that the subscription price of The Fruit-Grower will be advanced to One Dollar a year. If you have any friends and neighbors who grow fruit make an effort to send in a block of five before May 1st.

The "Mark" in the margin of this page is merely placed there to call your attention to this notice and does not necessarily mean that your subscription has expired, for it appears on every copy of The Fruit-Grower. The date tag on the wrapper in which your paper is mailed gives the date of expiration of your subscription. If it reads "April 05" or farther back you should send renewal at once.

Quite a number of subscribers are in arrears, however, and we hope each delinquent will renew before April 1st, and thus save us the expense of sending out notices. Every reader who has not paid up by April 1st will receive a letter and statement on that date.

While the amount due from each subscriber in arrears is not a large sum, the total is considerable to us, and prompt remittances will be highly appreciated.

Do not fail to read the ad on page 3 regarding the "Brother Jonathan Series of Fruit Books."

THE FRUIT-GROWER CO., ST. JOSEPH, MO.

Top-Grafting Apple Trees

Several years ago Mr. Harry Littlefield, of Brooks, Maine, sent an article which was published in The Fruit-Grower describing his method of making a saddle-graft for top-working trees. Lately the matter of top-working is receiving more attention, and Mr. Littlefield offers some further suggestions in regard to this matter. He gives the following:

"**Scions**—Get the largest possible, even if they must be stolen, and cut then any time before buds swell; wrap air tight in paper and put in cold cellar, if not ready to use. Cut nothing but previous year's growth, and **always large** ones.

"**Wax**—No strict rule for mixing, as commercial beeswax is so adulterated, but usually three lbs. rosin, two lbs. beeswax and enough raw linseed oil, so wax will be soft and pliable any day. Don't use tallow and don't increase the rosin because it's cheap.

"**Time** — I have grafted at all times in spring, up to blooming period, with good success, but find best time is when buds begin to show the green. Grafts will grow readily then.

"**Tools** — Medium-sized sharp knife and medium-sized sharp hand-saw, a light, pointed ladder and something to protect bundle of scions from sun and air.

"**Stock** — Any hardy, good-growing tree, free from disease and not subject to sun scald, is good enough. Any seedling that has successfully reached a size large enough to top-work is usually all right. Among the apple I find the following varieties make fine stocks: Wealthy, Alexander, Haas, Walbridge, Yellow Transparent, Snow, McIntosh Red and Gano. Would judge Wolf River best of all, as it has such excellent crotches and is an all-around grand tree, but its fruit is so very satisfactory that I never graft over.

"**Method**—I employ the new saddle method and when an improved way is discovered I shall adopt that. Some say that Adam invented the split-graft, while others claim it had even an earlier origin, but it being an uncertainty Adam should not bear all the blame, and, really, the split-method is better than none. We notice in different publications, very frequently, an article on split-grafting, and in Webster's dictionary, which was compiled some time in the '50s, is a description of split-grafting and also of a 'saddle' method, but not the more recent saddle method.

"**Disadvantages of Split-Graft Method**—When a limb is split a mistake is made then and there, for moisture is quite likely to get in some times and cause decay. It takes a very long time for scion to heal over end of limb, therefore giving decay more chance to get in its work. The split graft never becomes as strong as the saddle-graft. The split-graft union is the weakest place in the limb of the mature tree, while the saddle-graft union is usually the strongest. One can saddle-graft faster and easier than he can split-graft.

"**Description of Saddle-Graft Method**—From the cut accompanying this article one should readily understand how the thing is done. Find place on limb free from side-limbs and stubs and cut at angle of 45 degrees, or less. With knife cut bark, close to wood, from one to three inches, according to size of limb, on both long and short sides of limb. That's all for the limb. Next take a good big scion and split it, not in center, but a little to one side. The length of this split will depend on size of limb, but big side of scion shorter than other, which must go across end of limb, and is necessarily longer. Place short side of scion between bark and wood on long side of limb and long part of scion across end of limb and between bark and wood on short side of limb. Then tear from a waxed cloth a strip from one to two inches wide and wind firmly about graft in such a manner as to keep air and water out. Beg'n just below end of scion and wind up, cutting off wax two or three times if necessary to a close fit. Splitting scion is most difficult part. Hold scion firmly in left hand, top end toward body. With other hand draw knife toward body, beginning at butt end of scion, and be sure to take nearly half the wood. Knife always tends to run out, making a thin place and spoiling scion. This is avoided by pressing down hard on knife. Throw away top ends of scion cuttings, as they are too small to use.

"**More About Wax**—Don't heat wax too hot, and dip strips of thin cloth (white a preferable color) in melted wax and partially wring out, so too much will not remain. Cloth can be pulled between two sticks, or between side of kettle and stick. Cloths should be 8 to 12 inches wide and 2 to 3 feet long, but smaller sizes can be used. To prevent injury by heavy winds, strip off two-thirds of lower leaves from rank-growing young grafts. A saddle graft never blows out, but will sometimes break above union the first and second years."

⚜ ⚜ ⚜

Double-Working of Fruit Trees.

In the January number of The Fruit-Grower we were much interested in your reply to Mr. G. R. Anderson on the subject of the double-working of trees, and hardy roots. In Central and Northern Iowa the subject of hardy roots and stems is a problem that must be solved by nurserymen and fruit-growers by actual demonstration. Whatever may be said upon this subject by me will have no allusion to warmer climates, soils and conditions different from that of ours.

It has been a part of my work for many years to try to get hardy roots under trees, and I believe I am making a success of it. At all events, the test was made in my orchard upon 75 trees. Six of this number were double-worked upon stock that was as hardy as a wild crab, and it rooted from the scion, as readily as a currant cutting. During the winter of 1898 and 1899 every one of the 75 trees were root killed, excepting the six that were double-worked, and they were not damaged in the least. The wholesale destruction of orchards in Central Iowa and north of here by root-killing in 1899 is conclusive evidence that not one of these trees was upon its own roots. For many of the hardiest varieties were root-killed, but were damaged in their tops.

Furthermore, I am fully convinced that not one variety in twenty generally grown, will emit roots sufficient to be self-sustaining in a test winter. I am aware that in sandy soils, along the rivers, some varieties will emit roots more readily, but upon the prairie soil this is not the case. This has been the history of fruit-growing in our state for more than thirty-five years, yet thousands of trees are being planted yearly only to be swept out of existence when the tidal wave of another hard winter comes upon us. It is useless to pettifog piece-root grafting in order to get trees upon their own roots, unless we know the variety grafted will grow roots from the scion. The work of getting hardy and suitable stock to graft upon has taken many years of time, but now we know that these trees will stand the test. More than one-half of our orchard is double-worked upon crab stock, which is self-rooting from the scion. This stock we grow by thousands in our nursery for the purpose of grafting the different varieties of apples upon.

We have several varieties of this stock. Some are more vigorous than others, and in grafting we select varieties of the same vigor as the stock, in order to have a perfect union between scion and stock. When trees for this country are grown upon hardy stock there will be no question as to growing apples here as readily as in other states. Much more could be written upon this subject. As you expressed a desire to have this subject discussed by those having had actual experience I have briefly written the above. G. A. IVINS.

Iowa Falls, Iowa.

It should be said in connection with Mr. Ivins' article that he has been helping to carry on the experimental work which the Iowa Horticultural Society has done, and is prepared to give good testimony on a subject of this kind. This subject is a very important one, not alone in Iowa, where hardy trees are desired, but in every part of the country there is an increasing interest in the subject of getting trunks and roots which are resistant to disease and insects, on which to top-work varieties which are more desirable in fruit.

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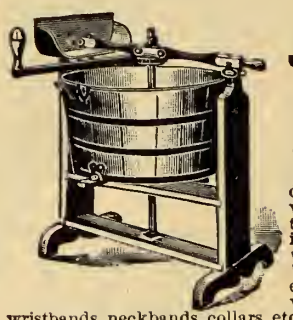

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A. L. ZIMMERMAN
WEATHERBY, MO.

Horticultural Meeting in Washington.

The third annual institute of the Yakima Horticultural Union, which held a four days' session here was a most successful meeting in many ways—from the large number of growers in attendance, the importance of the subjects discussed and the practical information given out. Twenty-five varieties of apples were on exhibition, showing wonderful advancement made in the selection and propagation of varieties most adapted to the demands of the markets, besides showing the wonderful possibilities of the Yakima valley in the production of fruits. The best samples from our state exhibited at St. Louis were grown in the Yakima valley. Here was grown the largest apple ever exhibited at any fair, by Mr. L. B. Kenyon, of North Yakima. This variety has only during the last few years come into prominence and has entirely superseded the wonderful Wolf River, that was at one time the rival of all comers. The Spokane Beauty, originated by Mr. C. L. Whiting, of Walla Walla, president of the Washington state nursery commission, is the name of the new variety. Mr. Kenyon had the silk flag on exhibition, which was received from the exposition managers of the World's Fair at St. Louis for the largest apple shown there.

Mr. F. Waldin, a large apple-grower, of Zillah, and editor of the horticultural department of the Ranch, published at Seattle, spoke on "Profits in Apple-Growing." He said profits in apple-growing depended on several conditions. First, we had to have the kinds demanded by the markets, as in the past few years the public tastes had changed somewhat and the old Ben Davis, that used to pay more, tree for tree, than any other apple in the orchard—and he had 75 varieties — was losing favor, and the markets did not want them. He would plant now, for market, only three or four varieties, such as Rome Beauty, Jonathan, Winesap and Grimes Golden. He thought the Spitzenberg the best selling apple, but in some localities were shy bearers, and in the end did not pay so well as the varieties named; but if he were growing apples for the English market he would plant Yellow Newtowns. His 75 varieties yielded good returns in former years, but had to be discarded because the market demanded a different and better class of apples. He said the early market had been so manipulated by the National Apple-Buyers' Association, of Chicago, which declared it would pay only $1 per barrel for apples, that growers would not sell, but the scheme fell through and apples went up to $2.50 per barrel. He would warn the growers of the Yakima valley against these scheming commission men. He would urge the growers to form themselves into a strong union; put up their fruit in first-class order. adopt a more vigorous system of grading, and let nothing go upon the market but the best. Then put their own salesmen in the field and sell their own fruit direct to the dealers in carload lots, thus getting the benefits of cheaper rates. He thought the reason growers did not always get good prices was the careless manner in which they put up their fruit. The market today is different from what it was years ago. He said the most attractive way to put up apples is the four-row box; and, in fact, is the only to get good prices, as the five or three-row pack is not popular and will not bring highest prices. He said many times people computed their profits from fruit growing on one tree, or a few trees, and cited a couple of cases. Dan Lish sold $52 worth of Alexander peaches from one tree and another man had 50 Spitzenburg apple trees and sold at the rate of $1,200 per acre, and thought these stories were like the Irishman, who said "The lies told about him were only half true." These stories going abroad gave a wrong impression, as the truth was good enough.

Mr. C. L. Whitney, of Walla Walla, spoke on the interest in the Lewis and Clark exposition at Portland next year, and urged fruit men to send exhibits there, as it would advertise the country and bring people to our valley. The exhibits at St. Louis brought many inquiries in regard to the Yakima valley, as the fruit exhibit gave good account of itself; bringing the highest awards for size, color and general appearance. He also referred to our excellent horticultural law and believed a vigorous enforcement of the same would materially assist in keeping our fruit up to the present standard of excellence by keeping out infected nursery stock from other states. He thought there was no immediate fear of over-production of apples, as there were enough Chinese to take them all, if each one ate an apple, besides the excellent markets being opened up in Alaska and which, at the present rate of development, would consume an enormous quantity of our fruit.

Prof. Lawrence, of Pullman Agricultural College, spoke on the insect and fungous pests that have made their appearance in different parts of the state, giving remedies for their extermination.

Prof. Jenne, of the same institution, spoke at some length on the codling moth and gave results of his investigations, had in the Yakima valley. He said there were ordinarily two broods a year, but sometimes there were three. He recommended the paris green spray, vigorously applied, as the best remedy. He said whale-oil soap is the best spray for the aerial form of woolly aphis; kerosene emulsion was also good, but not so easily applied as the soap mixture, as it was hard to mix and would be liable to injure the trees from imperfect mixture.

J. M. Brown, secretary of our union, read a paper on spraying for codling moths and covered the principal points as generally practiced by orchardists who spray with paris green. He gave some interesting experiences with the dust method; he could do more and better work with the dust alone than three men and a team with the liquid; he was satisfied, from his experience, that it was more effective than the liquid. His formula is 1 pound of paris green to 20 pounds of lime, but thought ashes or dust as good as lime as a conveyor. He thought the dust would adhere longer to the apple than the water, on account of the oily, or sticky, condition of the dust.

Just before adjournment resolutions were adopted referring to the marking of fruits grown in the Yakima valley. It seems that some of the fruits grown in this section have been sent out bearing the labels of other sections, thus giving the credit for our fancy fruits to sections which are not entitled to it. These resolutions urge growers to be very careful in their pack to the end that only good fruits are sold; smaller grades of peaches are not to be shipped at all. All packages are to be marked "Yakima Fruit," so that the fruits of the Yakima valley will become known in all markets as the best that can be grown. The resolutions also asked for legislation to prevent growers in any other section from using the brands of the Yakima valley on fruit grown elsewhere.

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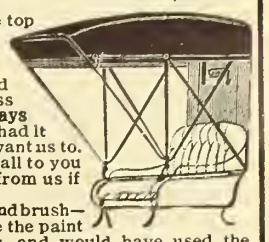
With the paint goes a first-class paint brush and full painter's instructions, together with material for removing the old paint **—also free.**

When the top and painting outfit arrives —which won't be long in coming as express travels fast—put the top on and re-finish your buggy.

How do you know you will be satisfied with the top when you get it?

That's the beauty of our plan of selling **on trial.**



We take the top back at **par**—give you every cent of your money back and prepay express charges **both ways** after you have had it **30 days** if you want us to.

We leave it all to you **—no back talk** from us if you return it.

The paint and brush—you would have the paint on your buggy and would have used the brush—wouldn't you? So we would not expect you to send that back, and it would be our **free gift** to you together with **30 days free use** of the top, just for the trouble of trying our fair proposition.

"How do we come out on such a liberal offer?" you ask.

Well, the fact is we make such **good** buggy tops that **no one** wants to send them back. The top, together with the re-finishing outfit, makes an old buggy **new** at a very small expense.

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Apple Scab and Its Work

During the past year apple scab was so prevalent throughout Missouri and the central west that the attention of the fruit-grower has been called to it perhaps more forcefully than ever before. As a very natural result, we hear the orchardists everywhere inquiring, What shall we do to control the scab? Shall we use the dust or the liquid spray? Will scab be worse the coming year, on account of having gotten such a start in the orchards the past year? How much of the premature dropping of the fruit, or how much of the failure of fruit to set in some apple orchards, was due to the presence of scab? These questions and many others are now before the apple orchard for consideration.

Apple scab is regarded by many as being the most destructive disease of the apple, if we take the country as a whole. In the northern half of Missouri it is pretty generally regarded as being the cause of greater loss in the apple orchard than is any other disease. In south Missouri some growers regard bitter rot as being more destructive and more to be feared than scab. This latter opinion is no doubt due in part to the fact that the bitter rot soon destroys every apple it attacks, causing it literally to rot, while scab may attack an apple without literally destroying it. The destructive influence of the bitter rot on an immediate crop of fruit is more apparent then than is that of scab. The scab, however, is perhaps the more subtle malady, as we shall presently see.

The actual injury done by apple scab is usually thought of by the orchardist as being confined to the number of scabby apples observed on the tree at the time of gathering, and by the fact that the scab renders these apples smaller in size, less shapely and less attractive. The grower also knows that an apple may be somewhat affected with scab without its salability being entirely destroyed. He contrasts this with bitter rot, which, once it has attacked the apples on a tree, often destroys, literally, nearly the entire crop of fruit, causing the apples to rot very rapidly before his very eyes. The bitter rot, where it occurs, looks to be the more sweepingly destructive.

It should be remembered, however, that the apple scab attacks not only the fruit, but it attacks the leaves and twigs of the tree as well. It begins its work very early in the season, as soon as the tree begins to put out its spring growth. It often attacks the opening buds and flower clusters, causing them to make imperfect development and resulting in the fall-

ure of many flowers to set fruit. Much of the fruit that does set often drops prematurely on account of being attacked by scab while it is very small. This fact is often partially lost sight of by the fruit-grower who attributes the failure to set fruit or the premature dropping of fruit to the prevalence of cold weather, spring rains or other inclement condition, which is known sometimes to unfavorably affect the orchard at this season. Scab on the newly forming leaves result in their being very small and imperfectly developed and prevents their proper assimilation of food in early spring when the tree needs all its energies to set fruit and to start its development. Fruit which does not set or which drops prematurely is of course not observed by the orchardist who, at the gathering time, looks at his apples to determine how much they have been injured by the scab. Premature dropping of the leaves in autumn, due to scab, greatly weakens the tree. This may be observed by the orchardist at the time of gathering.

Bitter rot has in recent years, also been shown to attack the twigs of the tree, where it lives over winter in the form of cankers on the limbs. It is probably less destructive to the vigor of the tree itself than is scab. It probably does not so unfavorably affect the setting of fruit, and it probably does not cause the young fruit to drop prematurely to the extent that scab does. It begins its development on the fruit later in the season, near the ripening period. While it must be admitted to be more destructive to the ripening crop, in many sections, it is probably less destructive to the tree itself than is scab. Bitter rot often causes the destruction in a few weeks of the greater part of a full crop of apples which have set on the tree and its destructiveness becomes very apparent. Scab, however, often prevents the formation of a large part of a crop by failure of the flowers to set or by the dropping of the young fruit, and by autumn this is largely lost sight of.

As has heretofore been mentioned, apple scab was very prevalent in this section during the past year. The more progressive orchardists are awake to the fact. They are determined to do what they can to prevent its recurrence in their orchards the coming season. Nearly all their inquiries are directed toward how to spray to prevent it. This indicates that spraying is properly regarded as being the one essential method of preventing scab. While spraying is essential. there are other factors that should be considered in connection with the control of scab.

Apple scab is a fungous disease. The fact that it caused by a minute parasitic organism is too well known popularly to need further discussion here. It should be born in mind, however, that it develops best under cool, moist conditions; it takes place which are dark. For this reason it is usually most prevalent in the orchard during a cool, wet season. The past season was unusually cold and wet, particularly early in the spring, and apple scab was unusually abundant. The cold, wet weather favored the development of the scab but opposed the vigorous growth of the trees, rendering more susceptible to the attack of the scab.

The illustration which is presented herewith shows an unusual development of scab and consequently poor development of leaves, flowers and fruit as a result of its attack. The owner of the orchard from which these five twigs were taken, said that the cold, wet weather was causing most of the flowers to fall and causing what fruit did set to drop off. While the cold, wet weather would have opposed the best development of his trees, even if scab had not been present, by far the most of the failure of the flowers was due to the presence of scab. All the leaves are small and mis-shapen and show dark blotches of scab. Some of the leaves are even wrinkled and twisted as a

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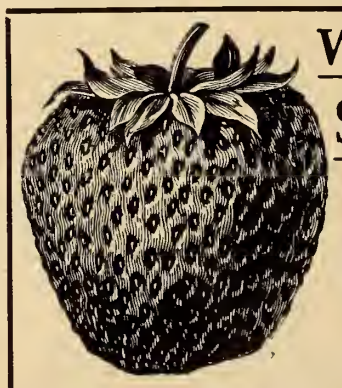

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result of the disease. The two upper right hand twigs show flowers that have died and turned black from scab. On the three remaining twigs the fruit set, but scab soon got the better of it. The small fruit on the upper left-hand twig has died and turned black down nearly to the base of the stem. The lower left-hand twig set one apple, but three dark spots show where the scab had nearly killed its stem and the fruit itself shows two large, shrunken black places, where the scab is attacking its blossom end and its side. The lower twig near the center has one live apple recently set, but a scab spot on its stem shows that the disease will soon cause it to drop. A fair crop of apples set, even though many of the flowers were killed by the scab before they had time to set fruit, but practically all the fruit that did set dropped before it had time to make much growth.

Since scab develops most abundantly in cool, moist, shady places the grower may to some extent take advantage of this hint in pruning and caring for his trees. If the trees are shaped so as to give uniform distribution of the main limbs, so as thin out rationally the dense places and admit as much sunlight and air as our climatic conditions render safe, this will, in a measure, oppose the development of scab. This should not be construed to mean that very open or very high heads are recommended. Our climatic conditions favor somewhat dense heads and low heads to avoid sunscald. Dense, dark places among the limbs should be pruned out only as much as our conditions of climate will safely allow. Weeds, or other growth, should not be allowed to grow up among the limbs, as this favors the accumulation of moisture under the trees and among the limbs. Undergrowth should be kept down to oppose the development of scab.

Some varieties of apples are much more susceptible to scab than are others. For example, Jonathan and Ben Davis are quite resistant of scab, while Arkansas Black is very susceptible to the disease. Where scab is prevalent varieties should be selected for future planting that are resistant of the disease. By consulting orchardists in the community one may usually find out what sorts among those usually grown are free from scab.

Early cultivation in spring opposes scab by drying out the surface of the soil under the trees and by rendering the growth of the trees more vigorous. This is a matter of very great importance where the orchard is in clean cultivation.

Sanitary conditions should be maintained in the orchard. The scab is disseminated by means of spores which develop in the scabby fruit and other diseased portions of the trees. All diseased fruit should be gathered from the trees in autumn and destroyed. Scabby apples should not be allowed to lie under the trees to spread the disease. Leaves and trash under the trees should be worked under the soil as early as possible in spring where the spores of the disease cannot be spread about. In cases where orchards are badly infested it may be best for a year or two to rake up and burn the diseased leaves and fruit from under the trees in late fall or very early spring.

General good care should be given the trees so as to keep them in vigorous growth. A vigorous tree is far more resistant of disease than is a weak one. Anything which contributes to the general welfare of the tree opposes scab and other diseases. This is of even greater importance than is spraying itself. How often we see a young, vigorous orchard yielding a fine crop of almost prefect fruit while it is young, even though the trees have never been sprayed. Those who do not want to spray are always ready with instances of orchards which have not been sprayed which yield just as good fruit as orchards which are sprayed. These orchards which yield good fruit without spraying are always vigorous, healthy trees which are growing under conditions where they are able to maintain good health and resist disease. Once let the trees wane in vigor from overbearing or other cause and scab is sure to get in. Cultivate, prune and manage the orchard well and the hardest of the fight against scab will have been won.

Spraying is essential wherever the orchard has become infested with scab. The best spray is the Bordeaux mixture. We have gotten the best results with four pounds of copper sulphate, four pounds of lime and fifty gallons of water. This should be thoroughly applied just as the buds begin to swell in spring, again just before the flowers open and a third time as soon as the petals fall. It is essential to spray early as the scab begins its work as soon as growth starts in the buds. If the orchard is large the spraying should begin early enough to finish the first spraying before the buds have burst. The first spraying is the most necessary one of all in this climate, as it gets ahead of the scab. Once the scab gets a start it cannot be well checked by spraying. Subsequent spraying can then only prevent further infection from scab, but it cannot stop infection that has already taken place.

For scab we advise the use of the liquid spray wherever it can be used. It has given us far better results than has any dust spray we have tried, particularly for scab. We do not want to discourage the use of the dust where it is impossible to use the liquid, but frankly stated our results in checking scab with the liquid Bordeaux have been generally very marked, but we have accomplished far less with the dust. It may be that the use of the dust may become more efficacious than it now is, after we learn more about it, but the liquid so far has proven to be preferable.

DR. J. C. WHITTEN.

Columbia. Mo.

Fruit-Growing in British Columbia.

The average American who knows anything about the agricultural possibilities of Western Canada usually thinks of wheat as being the one great crop of that region. That is largely true of the prairie country between Winnipeg and the Rocky mountains, where it is estimated 800,000,000 bushels of wheat of the finest quality will be produced as soon as the numbers of the people now going in there by the thousands will be equal to such a great undertaking. But in the warm valleys of British Columbia there are opportunities for successful fruit raising as good as those in any part of the temperate zone. In fact, it is predicted that, although British Columbia has been for years known chiefly as a mining and lumber country, it will not be long until fruit-growing is one of the most important industries of the provinces. In the Kootenay and Okanagan districts splendid apples, peaches, grapes, plums, cherries, etc., are already raised in considerable quantities. The last year the principal points in Okanagan have alone shipped 1,062,000 pounds of apples and 778,000 pounds of other fruits. The same district, in addition to the above figures, shipped 445,415 pounds of peaches, berries, cherries, currants and other soft and perishable fruits.

Nearly all of the fruit grown in the east and west Kootenay districts is sold and consumed locally, except strawberries, of which about 7,000 crates were shipped from West Kootenay during the past season to points in the territories and Manitoba. Even three carloads of prunes were sent to Manitoba from West Kootenay.

As an evidence of the rapidity with which the industry of fruit-raising is developing, it may be said that one company alone has planted over 60,000 plum and peach trees during the last two years and expects to plant as many more during the coming season.

To those who think that all of Canada is a very cold country in the winter it will be surprising to learn that the mercury rarely falls to zero in these valleys of British Columbia, and that the winters are so warm that navigation continues without interruption on the beautiful lakes which so conveniently provide natural highways up and down the valleys. The summers are warm enough to mature melons and all of the fruits that have been mentioned, and killing frosts rarely make their appearance before October 10.

The climate of the valleys is so ideal that they are attracting a very large immigration from other parts of Canada and even hundreds of settlers have begun to go in from the United States.

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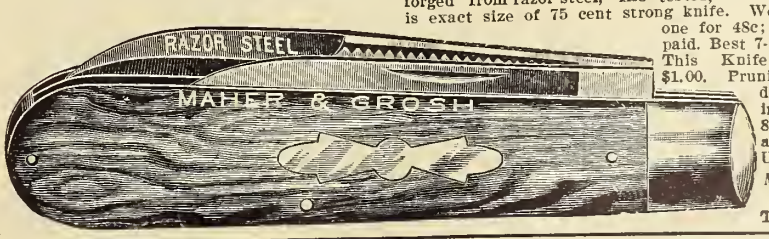


Every M. & G. blade is hand-forged from razor steel, file tested, warranted. This cut is exact size of 75 cent strong knife. We will send you one for 48c; 5 for $2, postpaid. Best 7-inch shears 60c. This Knife and Shears, $1.00. Pruning, 75c; budding, 35c; grafting 25c. Send for 80-page free list and "How to Use Razor."

Maher & Grosh Co
97 A Street,
TOLEDO, OHIO.

I can get along without The Fruit-Grower, but do not care to make so great a sacrifice.—G. H. Paden, York, Neb.

Of the many fruit papers I take, I regard The Fruit-Grower as by far the best.—G. W. Leonard, Auburn, Ill.

WESTERN
THE FRUIT-GROWER
ST. JOSEPH, MISSOURI

Address all communications and make Remittances Payable to "The Fruit-Grower Company," Seventh and Charles Streets, St. Joseph, Mo.

W. G. Campbell, Jr., General Manager James M. Irvine, Managing Editor

Advertising Rate—20c Agate Line, $2.80 per inch. Fourteen lines to the inch
No advertising in class generally termed "objectionable" accepted under any conditions. Editions mailed on 15th; Forms close on 10th; i. e., January forms close January 10th, etc.

40,000 a Month Guaranteed for the Season of 1905

Subscription—50c a year. Three years in advance, $1. Foreign Countries, $1

Remit by U. S. Coin, or Currency, Postoffice Money Order, Express Money Order, Registered Letter or Bank Draft. Send stamps only as last resort. All remittances at our risk.

Unless otherwise ordered, subscriptions will commence with month following date of remittance, and continue until ordered stopped and arrearages paid. If you desire paper to stop when time is up, notify us. The letter "S" after date on address tag signifies that paper will stop on that date. The address tag stands as a receipt for your remittance.

In compiling a list of Forty Thousand subscribers it is an easy matter to make mistakes, but we guarantee fair treatment to everyone. If you find an error in your address tag, or do not receive paper promptly, write us and we will trace matter up at once.

Entered as Second-Class Matter in the Postoffice at Saint Joseph, Missouri

Scientists have been telling us for a long time that fruit had little value as a diet, except for the acids they contained. But now comes the University of California and says that actual tests have demonstrated that fruits have a dietary value far beyond what has been accorded them heretofore, and although a chemical analysis may not show this, actual experiences prove that fruit, supplemented by certain other foods, will sustain life and maintain strength and vigor. This is good news to fruit-growers, who will welcome anything which will increase the use of all kinds of fruit.

Did any of our readers ever know of the various meetings of horticultural societies being reported so fully, and in such great numbers, as has been done in The Fruit-Grower this season. Look at the list of meetings reported: Iowa, Missouri, Kansas, Nebraska, Colorado, Ohio, Pennsylvania, New York Fruit-Growers' Association — these were all reported fully, and a number of other meetings were reported briefly. Until The Fruit-Grower was established none of these meetings were reported as fully as they are now. A number of papers report some of these meetings more or less fully now, but if you want the reports of all of them, and in the best style, you will have to read The Fruit-Grower. Have not these reports alone, within the past three months, been worth a year's subscription? We think they have. And all the other matter which will be published during the year will be so much clear gain.

The Standard Oil Company has been running amuck for many years, and no individual, corporation or commonwealth seemed to be able to cope with it. Yet when the trust attempted to dictate in Kansas it was called down pretty hard. And there are those who believe that the fight between Standard Oil and the state of Kansas is the beginning of the end of the coal oil trust. Kansas people do things, and this prophecy is not far-fetched. The trust might boss Pennsylvania, Ohio and some of the other states, but Kansas—never. The people out on the prairies have too long been their own boss. The binding twine combination found this out years ago, and the Standard Oil Company ought to have known better.

The Fruit-Grower must ask the indulgence of many of its readers who have sent in articles for publication. Our columns are very much crowded at this time with special matter, and many excellent articles have been held over. Some of them will not appear for months, perhaps, for the time is not seasonable just now. These articles, giving actual experience, are appreciated, and as many of them will be used as possible.

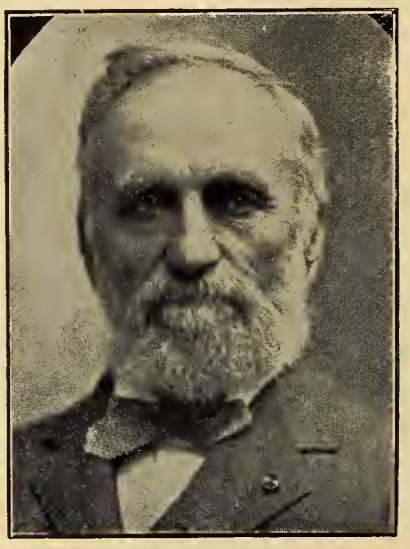
The Fruit-Grower now receives more inquiries concerning the use of commercial fertilizers than ever before. This shows an increasing interest in this matter, and it is a good sign. Our western lands are rich, but it is much easier maintain fertility than to restore it to worn-out soil. Fruit-growers, particularly, are interested in so feeding their fruits that they will have the color and firmness, added to good quality, which are so essential in fruits for commercial use. This subject ought to prove a very profitable one for discussion at horticultural meetings.

Within the past two or three years about half a dozen magazines have been started, having for their object the beautifying of home grounds, both in the city and in the country, but especially in the latter. The success which these publications have attained but proves that there is much interest in this subject. Certainly farmers should be interested. They have the land, they have the opportunity, and they should have a love for the work. The first years of a new country are devoted to subduing the land, so that it will produce a living for the owners. Most of our country has passed through that stage, and we now ought to be interested in making the country more beautiful. Every reader of The Fruit-Grower can help in this work by beginning at home. And if you have not already started this work, begin this spring. The plants, shrubs and trees necessary for the work are not expensive. The chief cost will be the time necessary to plant and care for them. But it will be time well spent, both in increasing the happiness of the family and in enhancing the value of the farm.

Andrew Carnegie has set aside $100,000 to be awarded to Luther Burbank at the rate of $10,000 a year for ten years, to support Mr. Burbank's work of plant breeding. Perhaps no money Mr. Carnegie has distributed will do more good than this, nor has it been used in a more laudable work. The originating of new plants is an unprofitable business as a commercial enterprise, and it is to be hoped that other plant-breeders will be encouraged in this way. In this issue Jacob Moore, who has produced some of our best grapes, has an article along this line. Certainly some plan should be devised which will either support these plant-breeders in their work or secure for them some reward for the sale of their productions. Mr. Carnegie's plan seems to us to be a good one. Instead of distributing free seeds, why should not the government use the money which these seeds cost, to buy the new fruits which are produced, and then disseminate them among the growers?

You know the freight rate from your station to the points where your fruits are marked, perhaps. Therefore you know what it costs you to get your fruit from your station to its destination—and the rate is likely high enough. But do you know what it costs to get your fruit from your farm to the station? How are the roads? Bad roads are an expensive proposition — worse than railroad rates, sometimes, and fruit-growers, of all persons, should be interested in their improvement. The difference between a good road and a bad one, in fruit market time, often means the difference between a profit and a loss to the grower. All right to try to get lower freight rates. But at the same time don't neglect that stretch of road between you and the railway station. It is largely in the power of farmers to regulate the latter.

The Fruit-Grower takes pride in calling attention to the fact that Major Frank Holsinger, who has for so long been a contributor to these columns, has been chosen president of the Kansas State Horticultural Society, and Gabriel Hiester, editor of our Eastern edition, has been chosen president of the Pennsylvania Society.



MAJOR FRANK HOLSINGER,
President Kansas State Horticultural Society, who writes for The Fruit-Grower.

Then, too, Dr. J. C. Whitten, who is one of our valued contributors, is president of the Missouri Society, and Hon. J. P. Logan and Hon. G. S. Christy, president of the Arkansas and Nebraska societies, respectively, are among the best friends this paper has in these states. No paper in the country, we believe, has so many good friends among the organized fruit-growers as has this publication. And on our part, we try to help these organizations by every means within our power. We hope the officers will call on us at all times. (Cut loaned by Kansas Farmer.)

A Massachusetts reader of The Fruit-Grower calls our attention to the spread of the brown-tail moth in that state, and says that fruit-growers everywhere should be on the lookout for it, for it is as dangerous to the orchards of the country as the chinch bug is to the wheat fields or the boll weevil to cotton plantations. This correspondent says this moth is ten times more dangerous to apple and pear orchards than the canker worm. Both male and female of the brown-tail moth can fly, and they spread rapidly. They have worked 200 miles in the past three years in eastern states. Inasmuch as these moths attack forest trees as well as fruit trees, it would seem that the state or national government will have to undertake plans for the extermination of the pest.

I have taken The Fruit-Grower almost from the first, and have been glad to see it get better all the time. I intend to take it as long as I need a paper of this kind.—C. D. Martindale, Scranton, Kan.

A WOMAN FLORIST
6 HARDY EVERBLOOMING ROSES On their own roots. ALL WILL BLOOM THIS SUMMER. 25c
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Did you know that the quality of our plants and low prices have built up our immense trade in small fruit plants? Catalogue free. Explains everything; tells you something new about pedigrees.
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WE PAY FREIGHT. Send for our handsome catalogue of Trees, Shrubs, Roses, Evergreens, etc. We deal direct. No agents. Our prices are lowest. Our Mr. M. J. Wragg is an expert landscape gardener and his services are available for our customers. M. J. Wragg Nursery Co., 300 Good Block, Des Moines Ia

Strawberry Plants and Seed Potatoes.
You can make more money if you plant intelligently. Write and tell us about your soil. We'll send you our Free Descriptive Book Over 100 varieties.

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LESLIE, MICH.

Fairfield Strawberry
Best early of 160 KINDS at Wooster (Ohio) Experiment Station. Send 15c and the names of five fruit-growers and we will send one dozen plants by mail. Write for prices of this splendid new variety in 1000 lots. Buy of the introducer and be certain of pure plants. Please mention this paper. WEST JERSEY NURSERY, Stanton B. Cole, Prop., Bridgeton, N. J.

20,000 Mo. Pippin
Apple Trees, No. 1, 2 and 3-year, for sale. Also other varieties, such as Jonathan, Gano, etc. If you want 1,000 or less trees at reasonable prices for No. 1 stock, grafted from selected trees that bear large chops of fine apples, write to the MORRIS CO. NURSERY, Council Grove, Kan. JAS. SHARPE, Proprietor.

MATTHEWS The new winter pear. Orders now booked from ocean to ocean for spring delivery. You must order at once to get stock this spring. Our new 36-page retail catalogue now ready. Send for it. A farmer's opinion of 1904 catalog:
"Chenoa, Ill., Mar. 6, '04.—Hopedale Nurseries—Your catalog received. Was so well pleased with it that I have to send a short letter. I never saw a catalog so appropriate. It gives description of varieties in a way that has the stamp of truth on it, and that is a good deal for a lover of truth.—C. L. Roth."
Hopedale Nurseries, Hopedale, Ill.

AUSTIN'S DEWBERRY
J. W. Austin, Pilot Point, Tex.
Original propagator and introducer. Headquarters for plants. Descriptive circular and treatise on dewberry culture, for your address on a postal card, if you please.

No More Blind Horses
For Specific Ophthalmia, Moon Blindness and other sore eyes, BARRY CO., Iowa City, Iowa, have a sure cure.

The Family Circle

The special announcement we want to make this month is in regard to the discontinuance of all our special subscription offers on May 1. All these offers will positively be withdrawn then. This includes the three-years-for-a-dollar, as well as the special offer of five names for $1.

If our readers contemplate getting clubs of new subscribers—as we hope that many of them do—the work should be pushed now, for the names must be sent us before May 1 in order to secure the special rates.

The Fruit-Grower never had such a ready response to its subscription propositions as it received in February, and as a result it was the best month we have ever had in our subscription department. Thousands of sample copies were sent out in response to requests, and many subscribers are now working on clubs. Those who are not should consider the matter, for we want everyone to feel an interest in the paper and to have a part in this campaign.

Why should not every reader try to get a club of new subscribers before this special offer is withdrawn? Have you a hesitation in asking anyone to subscribe for The Fruit-Grower on account of its not being worth the money? Not this, surely, for we have received hundreds of letters within the past two months saying that either the January or February issue was worth the year's subscription price.

No, it cannot be that the paper is not worth the money. We shall take it that everyone who does not try to get a club before this offer is withdrawn is no sufficiently interested in increasing the number of members of The Family.

We feel proud of this Gardening number. A number of the farm papers have issued gardening specials, but we believe none of them has as good a lot of articles as we publish in this number. This, we believe, is one of the best papers we have printed up to the present time. The whole paper has the air of springtime.

One member of The Family who saw an advance copy of the title page wanted to know if chrysanthemums and roses bloom at the same time in Missouri. Sure they do—some kinds of roses.

The flowers used in our illustration are not spring flowers, but the very brightness of the design catches the eye and gives the paper a spring-like air. It is a beautiful design, and the effect is good, when one considers that only two colors—green and yellow—are used.

But the title page is not the only good thing about this Gardening number—the contents are up to a high standard. The prizes for the articles will be announced next month. And of course everyone whose article was accepted will be sent a set of five of our Brother Jonathan books.

In this connection we want to thank everyone who has contributed to this issue. Many more articles—and good ones, too—were received, but we could not use all of them.

Every reader is urged to keep account of the gardening work this summer, and next March we will have another special issue. Other prizes will be awarded, and there will be prizes for gardening photographs. Prepare this summer for your article for next year. We will have some great papers next year—help us to prepare this summer for them.

Our next issue will be especially devoted to small fruits. If you have any valuable experience, send us a "boiled down" report of it. See that articles reach us by April 1.

Last month we announced a change which will be made in our subscription policy, and in connection therewith asked our readers to give their views in regard to some contemplated changes for next year. Two plans were suggested: First, to print two issues each month, about like we have been printing, and charge $1 a year for it; second, to improve the paper, using more illustrations, with more special articles, and charge $1 a year for the paper, issuing it only once a month, as at present.

Now, which do you suppose is the more popular plan with the subscribers who have responded so far?

The second one is ahead, about three to one.

We rather thought this would be the case. The letters we have received from our subscribers during the past few years have given us a good idea concerning their views on different subjects. Many of them refer to the fact that The Fruit-Grower is different from the usual run of farm papers—and they want it kept different.

The principal argument advanced by those who want two issues a month is that the paper could furnish more reliable market reports, which would be of especial benefit to those who had fruit to sell. But this would hardly be the case. A paper issued twice a month would not help anyone to market berries, peaches or any of the more perishable fruits. Nor would it be best for one who had a big crop of apples to sell to depend on semi-monthly reports. The reports of different markets should be reported at least weekly, and better still, daily, to be of the greatest benefit in cases like this.

Most of those who wrote in favor of two issues a month closed their letters something like this:

"We will be with The Fruit-Grower, no matter whether it is issued once a month or twice; we know the paper will be worth all we are asked to pay for it."

And it will, too.

Those who want The Fruit-Grower made better at $1 a year said there are so many weekly papers that they want one good monthly farm publication, so that they can have time to thoroughly study one copy before another is received. A number said they did not want The Fruit-Grower published twice a month, for they feared "two issues as good as The Fruit-Grower's standard cannot be published in a month; there is apt to be less discriminating in the selection of the matter if the paper has to be printed so often."

We shall be glad to hear from others of our readers, for no change will be made until next year, at any rate.

Our first series of "Brother Jonathan" booklets is ready. These booklets have been well received by those who have seen them and the demand for them is increasing. They sell at 25 cents each or the set of five will be sent postpaid for $1.

But the best way to get them is to secure some new subscribers and get them free. Any person whose name is on our list can secure any one of these booklets free as a premium by sending us one new subscription and 50 cents to pay for same. Note the rate must be 50 cents.

Note, too, that the subscription must be sent by one whose name is already on our list. This is so that our subscribers will receive the benefit of these premiums, and new subscribers who send their own subscriptions cannot receive the premiums.

In getting new subscribers for these premiums, don't forget that the subscriptions must be paid for at rate of 50 cents a year. No clubbing proposition goes when these premiums are claimed. If any of our readers whose subscriptions are paid in advance want to see these booklets, we will send a set on approval, to be returned if they are not satisfactory.

See our large advertisements in this issue, and if interested send for a set of the booklets.

Now it is a short time only until spring work opens in earnest. You will not have time to get new subscribers then, and we urge you to try to get a club now. Will you not do this? And look at the date on your own wrapper. If it shows your own subscription to have expired renew at once. It takes lots of money to pay paper bills, etc., now, and we need your help. Send your renewal. This is the way to help.

BROTHER JONATHAN.

It Wins in the Orchard

The test of a sprayer comes when the machine is put to actual use. Here is where the

WALLACE POWER SPRAYER

establishes its reputation. In the Hoover orchards, near Wichita, Kan., last week the Wallace machines were given a thorough trial, in connection with other machines, and they won the approval of the orchardists present. E. G. Hoover, manager of the orchard, bought a Wallace machine for his own use, as did a number of others. In driving a distance of 50 feet 190 pounds pressure was generated, and a steady pressure of 120 pounds was maintained during the contest. This is necessary for thorough spraying.

The Wallace Sprayers Are The Best

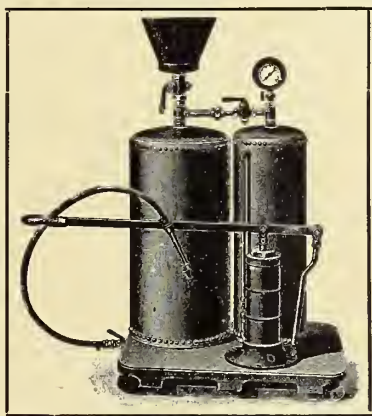
Send for our Sprayer Book, "Orchard and Garden Profit." It shows every detail and gives fruit-growers' opinions that are worth considering. Mailed free. Ask for **BOOK 31.**

WALLACE MACHINERY CO., CHAMPAIGN, ILL.

"HURST" SPRAYERS LEAD EVERYWHERE

—Above cut shows our "FITZ-ALL" Barrel Pump and its great utility. **Adjustable** to fit any size or style barrel or tank—*fits on anywhere.*

Heavy Brass Parts—*no rubber or leather to wear out.* **Three** Agitators and Automatic Strainer Cleaner. Pronounced by leading growers everywhere the most satisfactory pump yet produced because of its great adjustability, simplicity and durability,—yet sold at a low wholesale price (where no agents.) Can buy for cash or on time. All kinds Spraying Apparatus and 4-row Potato Sprayers, etc., at Wholesale (about half) If write at once. Established 12 yrs. **H. L. Hurst Mfg. Co., Dep. A, Canton, O.**



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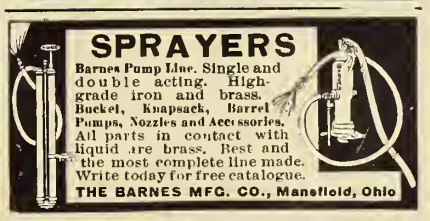
I have recently discovered a plan which prevents every kind of plow points from breaking. Have used same on both stony and stumpy land with big success. Write today for FREE particulars.

J. H. WARD, New York City, N. Y.
Bible House, R. 86.



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A new berry of great promise; has been grown six years, and today is ahead of all others for profit to growers. We have a nice lot of well-rooted plants to offer to the growers. Send for circular and price list.

C. G. VELIE & SON, Marlborough, N. Y.
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or any other purpose, until you investigate **"The Master Workman"** a two-cylinder gasoline engine superior to all one-cylinder engines; revolutionizing gas power. Costs Less to Buy and Less to Run. Quickly, easily started. No vibration. Can be mounted on any wagon at small cost—portable, stationary or traction. Mention this paper. Send for Catalogue. **THE TEMPLE PUMP CO., Mfrs., Meagher & 15th Sts., Chicago. THIS IS OUR 61st YEAR.**

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FORTY NEW AND RARE VARIETIES

Beautify your home by adding a few Dahlias to your fruit orders. A general stock of Strawberries, Raspberries, Blackberries, Grapes, Currant and Trees.

Don't fail to send postal for our new Spring Catalogue. It will interest you.

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BARGAINS IN APPLE TREES

first class, medium and light grades. Our list of varieties includes, Stayman, Nero, Lankford and others of the best late keepers. Japan Plums, Sour Cherries and Peach in medium and light grades at low prices. A full line of Fruit Trees, Small Fruits, Shade Trees, Evergreens and Shrubbery. Also a large stock of California Privet and Berberis Thunhergii, the best plants for Ornamental hedging. Send list of wants for prices.

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Choice Plants

SPRAYED STOCK

Over forty varieties of Strawberries, Raspberries and Blackberries. My Catalogue fully describes the best of the standard kind as well as many of the choicest and most promising of the new varieties. We send out only No. 1 Stock. You cannot afford to grow any but the best. Our plants are strong, well rooted, fresh dug, well graded and guaranteed to arrive by mail or express in perfect condition. Prices reasonable. Catalogue free.

C. H. GRAHAM, AFTON, NEW YORK.

WANTED

The opinion of potato growers on a new variety of promise. It seems to be superior in yield, quality, beauty and freedom from disease. Season medium. No restrictions. A medium-sized tuber mailed for ten cents. Box 118.
M. CRAWFORD, Cayahoga Falls, Ohio.

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IDEAL BORER PREVENTIVE

A rational new method. Its field is the young orchard. Five years record. Applied in paste form; 1 lb. will treat 500 young trees. Send $1 for 1-lb. can; $2.75 for 3-lb. can; $5.00 for 6-lb. can, delivered free by express or mail.
DR. H. O. BEESON, Noel, Mo.

Olives Pride Strawberry has come to stay. The plant is one of the most vigorous grower, producing plenty of large, healthy plants. Berries are large and firm; ripens all over; no green tips, excellent quality plants, free from all disease and exceedingly productive; does well everywhere. 45 varieties of highest quality plants, etc. Instructive Catalogue FREE.
J. W. HALL, Marion Station. Md.

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Trees until you see our 1905 Catalogue of 62 pages, describing in detail 528 varieties of Fruits, Ornamentals and Roses. It's FREE. Write today to

QUAKER HILL NURSERY,
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SHEBOYGAN FRUIT BOX CO.,
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had the honor of exhibiting the largest Pecans in the world at the World's Fair Exhibition at St. Louis, known as the 20th Century Pecans; had also the Paragon (both grafted), and the Port's Select Pecans (seedling). We furnish also trees of the same. The 20th Century and Paragon both grafted on 2 or 3-year-old roots, bear in four years, the Port's Select in 5. Also furnish trees of the Japan Chestnut, Japan Walnut and English Walnut. Send for booklet.
TEXAS SEED PECAN CO., Fort Worth, Texas.

Peach Seed for Sale

Write Thos. R. Haman, 1614 E. Oliver St., Baltimore, Md. References as to quality and good results.

Market Gardening in Cuba

By I. A. Barnes

The force of government clerks which was sent from Washington to Cuba upon the establishment of the provisional military government of the island had a rather hard time for a while in getting used to the Spanish cooking of the restaurants and hotels, the serving of nothing but coffee and bread for breakfast and the absence from the table of a great many of the vegetables to which they had been accustomed in the United States. Naturally there were some protests, but they soon learned that it was a case of eating what the Romans did, so to speak, or else go hungry; and, with true Yankee spirit, they tightened up their girdles and began the acquirement of a taste for alligator pear salads, banana fritters, olives, the various styles of serving tropical fruits, as well as vegetables they had never heard of before, etc. But they had to give up their pie and take in its stead guava jelly and cheese made from donkey milk. However, they soon learned to like these things, although whenever they would see before them tomatoes only an inch or so in diameter or muskmelons of the old-style, yellow, oblong variety such as were cultivated by the gardeners of our grandfathers' time, they would long "for home and mother."

CHINESE GARDENERS AT WORK.

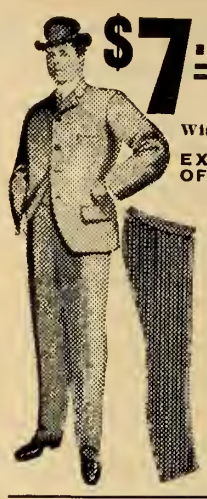
Yet these conditions were only what might have been expected. In a land where everything grows so easily and where American enterprise and desire for perfection in all things is so little prevalent, it is but natural that the natives of the island should simply take things as they found them. If their customers were satisfied with the tiny tomatoes like those that their grandfathers before them used to buy, why should they waste time and mental effort in growing the larger American varieties? They would only have to explain and answer the questions of their customers to why they were so large, etc.; and if the Spaniard were satisfied with the flat and insipid taste of the smooth-skinned yellow muskmelon such as he used to get in old Madrid, why should he want to sell him any of the choicer canteloupes? Conditions are changing, however, and, as the relations between the little republic and the United States grow closer it will not be long before the Cuban and the Chinese gardeners will find that they will have to do as the American gardener and grow the same kind of vegetables as he or else see their customers leaving them to patronize the more enterprising competitor.

One reason why the present truckers of Cuba are at a disadvantage is that they haven't the transportation facilities they should have. The Chinaman carries his two baskets of vegetables attached to the ends of a pole balanced on his shoulders and goes along the road in a kind of dog trot, while the Cuban has great panniers on each side of his horse in which to carry his vegetables and fruits, the trot of his pony just about equaling the speed of his competitor. If the combination of saddle and panniers did not weigh so much, and if the gardener would be content to walk instead of riding, his little pony could carry a larger load; but no, he sits like a king upon his throne as independent as you please, and his customers must walk around from one side of the horse to the other to make selection from his stock, although in a few instances, particularly in the larger cities, some vegetables are sold around the streets by negro boys, who carry trays upon their heads, or by men who have push-carts, which are sometimes drawn by themselves, although more frequently by a goat, donkey or any animal that can be pressed into the service. But the Cuban gardeners are happy people, after all; and, as their needs are few, they manage to make enough to keep the wolf from the door and to save up some spending money so as to have a good time during the carnival season.

PURCHASER INSPECTING PRODUCE.

ON THE WAY TO MARKET.

Of the two, the Chinese probably make more money out of the business, as they are better at keeping up a rotation of crops, and besides grow American Beauties that are the equal



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GENTS' OUTFITTING CO. Dept 20, 242 Market St., Chicago.
Ref: First National Bank, Chicago. Capital, $13,000,000.
Traveling Salesmen Wanted.

Get Baby a GO-CART

Like Cut, $5.75

Wood and reed body; highly finished cane seat and back; No. 15 gear. All steel parts are highly enameled; fitted with rubber tires; steel wheels; rubber hub caps; patent wheel fasteners and foot brake; without upholstering—PARASOL of mercerized percaline with puffed ruffle. If upholstered with removable denim pillows, seat, back and dash, $7.10. Other styles and prices are shown in our Catalog. It's FREE. Send for it. We have bargains in every department. FROM FACTORY TO YOU BUT ONE PROFIT. PARLOR SUITS, $16.25 up. Couches, $3.95 up. Library Tables, $4.65 up. WRITE US YOUR NEEDS. WE CAN SUPPLY IT.
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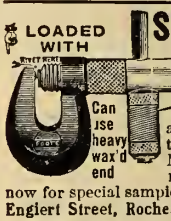

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by buying the "MEND-A RIP" and do your own repairing. Will sew anything from a buckskin glove to the heaviest tug. Will rivet tin or leather. Made of forged steel. Agents make from $3 to $15 a day. Write now for special sample price. J. E. STROYER & CO., Englert Street, Rochester, N. Y.

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Fine Delaware-Grown Peach and Plum Trees

of the best new and old varieties in assortment, for spring 1905 planting, at very low prices.

THE DELAWARE NURSERIES,
D. S. COLLINS, Manager. Milford, Del.

DO YOU WANT A BARGAIN IN

Miller Red Raspberry Plants

or Michel's Early, Crescent, Lady Thompson, Clyde, Klondyke, Brandywine, Bismarck and Gandy Strawberry Plants? If so, write for special prices.

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Washington County, Springdale, Ark.

We sell Direct to Planters at wholesale

GRAFTED PECANS

and all kinds of nut trees. New Plum —MAYNARD—the money-maker. "The best that ever happened." Send for description.

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GRAPE VINES

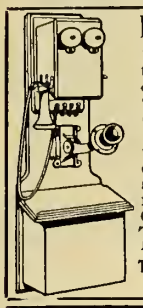
Currants, Gooseberries, Blackberries, Raspberries, Strawberries. Price List FREE.
Send 2c stamp for illustrated descriptive catalog.
T. S. HUBBARD CO. Fredonia, N. Y.

O-SAY!

I have a few more of my 1905 catalogues for parties needing plants, and who desire a special word about the money-making varieties of strawberries.
B. F. SMITH, Drawer C, Lawrence, Kan.

How to Organize
A Farmers' Telephone Co.

We have published a very instructive telephone book especially for the man who wants to know ALL about telephone matters. It tells how to organize, how to build the lines; about different types of 'phones, construction; gives by-laws, and constitutions; in fact it is a telephone encyclopedia every farmer should have. We send it free if you mention this paper. Ask for Book F- 104, "Telephone Facts for Farmers." You will get it by return mail. Address nearest office.
Stromberg-Carlson Tel. Mfg. Co.
Rochester, N. Y.—Chicago, Ill.



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Our instruments acknowledged "WORLD BEATERS." Can whisper over them. Special discount on first 'phone in a section. Before you buy write for our "New Model 1905" Catalog and introductory prices, **TELEPHONES** free; you'll not REGRET IT.
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BOOK FREE
How to put them up—what they cost—why they save you money—all information and valuable book free. *Write to*
J. ANDRAE & SONS, 869 W. Water St., Milwaukee, Wis.

Warnock's Tree Paint
Is better and more successful than any or all other devices for the protection of fruit trees. It kills the "San Jose scale," the "shot-hole borer" and the "oyster-shell bark louse." The "apple borers" and the "peach borer" will not trouble a painted tree; the moth will not deposit the egg. Canker worms will not climb a painted tree. Rabbits nor mice will not girdle a thoroughly painted tree. neither will a goat eat it.
If our directions are followed in applying the paint, we warrant one application to protect for three years, or the money refunded.
Also it is a benefit to trees; it will not injure the tenderest bud; **buds grow through the paint.**
The best time to paint trees is when you plant them. The next best time is as soon after as possible. We can refer to hundreds of orchardists, almost all over the United States, who have used our paint.
Write for circulars and price list. Agents wanted. Letters patent No. 779752; issued Jan. 10th. 1905.
R. WARNOCK & CO., Independence, Mo.

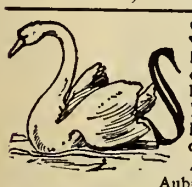
The ROGERS
in the earliest of all Dewberries; bears heavy crops of large, firm fruit, that ships well and sells at fancy prices. It's flavor is unsurpassed.
THE ROGERS has passed the experimental stage. It has been sold in nearly every state in the Union, and is fast becoming the most popular Dewberry now in cultivation. My prices are reasonable and I guarantee all my plants to be genuine. Write for descriptive circular and prices. JAS. W. HAMLETT, Alvin, Texas.

Hardy Northern Grown Trees and Shrubs
Healthy, vigorous, productive and free from insect pests. NONE BETTER or cheaper. No traveling salesman can compete with us in price, quality considered. Get Free Catalogue.
George H. Whiting Nurseries, Yankton, S. D.
Lock Box No. 1110.

THE NEW BERRY
ABINGTON
The largest and most productive, perfect blossom, matted row berry on the market. Send for circular to the introducer and grower.
LESTER BLANCHARD, Abington, Mass.

Strawberry Plants 45 VARIETIES *True to Name*

A vigorous, healthy, well-rooted plant is more certain to live, grow much faster, less liable to disease. This is the kind of plants I furnish my customers; 25 years' experience. Lucretia and Austin Dewberry Plants, Asparagus Roots, Seed Corn, Second-crop Seed Potatoes, etc. Descriptive Catalogue Free.
J. W. HALL, Marion Station, Md.



Steel Hay Rack
Lighter, stronger and cheaper than wood, Only steel hay rack manufactured.
RACK BRACKETS
Hay, hog, wood & wagon box combined. Write for prices
Auburn Steel Rack & Bracket Co.
Auburn, Neb.

Farm Canning Machinery
Complete, $10, $25, $50, $100, $125 and upwards. Make money by canning for market. Book free. Modern Canner Co., Bridgeport, Ala.

BERRY TICKETS
No bookkeeping in the berry field; no trouble in settling with pickers. Every grower should use them. SAMPLES FREE. T. M. JONES, Goreville, Ill.

of some of the hothouse product of the New York florists. But the celestial is a queer article, and his smile, so proverbially childlike and bland, is quite deceiving. He is industrious enough, but wants to have his own way in a great many matters, regardless of everything to the contrary. The United States military government of Cuba had a little affair with these people which brought out some facts as to their manner of doing some

ONE STYLE OF DELIVERY CART.

things which were not generally known.

As the majority of the people of the United States are aware, General Wood had to master, among other difficult problems, that of stamping out yellow fever in Cuba. The authorities were working hard on the mosquito theory and making great efforts to get at the root of the evil by destroying the breeding places of the insect. The water tanks on the roofs of the houses were required to have a tight fitting cover, the cess pools of the houses were kept tightly closed, and the rigid house to house inspection to see that the regulations were

ANOTHER STYLE OF CART.

carried into effect was a wonderful help, particularly after a few were fined in the Havana courts for not complying therewith. After getting things into good shape in the city limits, attention was then turned to the stagnant pools of water on the outskirts of Havana, which was where the "mosquito brigade," as the corps of sanitary employes was called, found its hardest work.

There is a splendid system of irrigation for the suburbs of Havana by means of well constructed canals which bring water from the Alemndares river, which was made originally for the purpose of supplying the

AND STILL ANOTHER.

city with drinking water. A better supply having been obtained from springs near the city, the expensive works were abandoned for that particular purpose and the water from these canals has been used by the gardeners in case of a dry season. The regulations governing the use of this water were either lax or else the municipal authorities did not see that the same were properly observed, as the gardeners would allow pools of stagnant water to form, in which the Chinese would wash their vegetables, after a fashion. They seemed to take no pains to keep these pools or ditches properly cleaned, and as a consequence the stench arising therefrom was particularly disagreeable, and they made a splendid place for the mosquitoes to thrive. The city health officer, Colonel W. C. Gorgas, soon discovered the source of the evil and proceeded to investigate, with the result that the sanitary department issued regulations to the effect that all pools of water should be filled with earth and leveled, that all irrigation ditches should be cleaned once a week, flood gates put in and channels kept as narrow as possible so as to increase the speed of the flow. It was further ordered that only clean water should be used for washing vegetables and that no grass should be allowed to grow in any ditches or pools. While this meant more work for the gardener, yet the public was assured of getting clean water cress, lettuce, radishes, etc., and the vegetable stands in the markets soon looked a great deal more attractive to the eye than formerly.

Many were the schemes devised by the Chinament to get around these regulations; but they were closely watched, and the usual fine of $10 and costs for non-compliance with the regulations soon convinced them that when General Wood considered it wise to create a law, it always meant just what the words spelled and nothing else. Furthermore, the Chinese consul was furnished with a copy of the regulations and his instructions to his countrymen were to the effect that they would have to obey the same and that all irrigation, etc., should be done by methods satisfactory to the sanitary department. The result was that the suburbs of the city were just as free from the mosquito pest as any of the cities.

I have received four copies of The Fruit-Grower, and would not take the price of a year's subscription for the January number alone.—R. E. S. Carpenter, Buzz, Pa.

Why Don't You Save Your Money
By buying your packages in the flat and making them up on the
Advance Foot Stapling Machine

Advance No. 1

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For the manufacture of Hallock and Leslie boxes, one and four-quart baskets, also other fruit packages. We guarantee our machines against faulty material and workmanship, and that they will give entire satisfaction.
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SPECIAL—$1.00 Postpaid
This Vest Pocket **Electric Searchlight**
Everyone Guaranteed.
Not a Toy

Useful in a thousand ways. It fits nicely in vest pocket. **Invaluable** for Physicians, Watchmen, Farmers, Plumbers, etc.; on trains, steamboats and strange hotels; can be taken in cellar full of gas, or placed in keg of powder without danger; no wires, smoke, oil, smell or dirt. Gives 3,000 flashes. New batteries, 30c postpaid; can be replaced in a moment. Order today; once you have one you would never be without it.
Den Clock $1— Solid brass works, run by a weight; no spring; no key winding. Richly designed front, executed in good, honest, hardwood. Utility and Art combined. A dependable time-keeper and a beautiful wall ornament in one. Double value, yet all for $1.00. Delivered anywhere in U. S..

FREE Catalog of Furniture, Clocks, Silverware, Stoves, Ranges and hundreds of articles for Home. Write today. Money back if not satisfied. "Direct from Maker to Consumer."
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Insure Your Face
The DIAMOND RAZOR GUARD attached to your favorite razor prevents accidents. You can't cut yourself. Makes shaving a pleasure. The DIAMOND RAZOR GUARD not only prevents cutting the skin but PROTECTS THE EDGE OF THE RAZOR, because it is so made that it is impossible to shave with it unless the razor is held in proper position. The DIAMOND RAZOR GUARD is worth ten times its cost simply as a protection to a razor. A razor used with the guard will hold its edge three times as long and not need honing more than once a year. Price, postpaid, 25 cents. Send for General Merchandise Catalog of Furniture, Silverware, Churns, etc., at right prices for good goods. It's FREE. Send today.
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Mark the Baby's Grave
Headstones $4 up
Monuments $11 up
Blue or White Marble nicely lettered. Instructions for setting. Save agent's commission. Send for Catalogue.
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FREE SEND FOR **BOOK** ON NEW **PROCESS**
of Canning Fruits and Vegetables.
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If you want
Strawberry Plants
Write Smallwood, Fort Scott, Kansas.

The April Fruit-Grower.

The April issue of The Fruit-Grower will be specially devoted to small fruits. It will have another attractive title page. There has been a division among those who have seen our title pages as to which is the prettier, the one used this month or the one which will be used in April. At any rate the April cover is a beauty.

We have received so many responses to our request for gardening articles that we will ask our readers for articles on small fruits for April. The best article will be awarded a cash prize of $5; the second best $3, and the third best $2. Every other article that is used will be awarded a set of five of our "Brother Jonathan" booklets. Now send your best articles on strawberry growing, or on growing any of the bush fruits. The April number will be smaller than this month's issue, so that not so many articles can be used—and it will take good articles to win the prizes. Boil the matter down and limit articles to 500 words.

And be sure to send them early—they must reach us by April 1. Some good articles were omitted this month; came too late.

Our small-fruit men will have an inning in April, and we want to hear from a lot of them. They should make the April number one of the best of the year.

Although Prof. Blair promised us sure that he would have his article on the use of power spraying outfits for our March number, it was not received, so that we go to press without it again. We will make no further promises in this regard, and regret that the article does not appear in this issue, as we had every reason to expect would be the case.

The Big Horn Basin Excursion.

J. W. Gregory left on March 7 for a trip to the Big Horn Basin, to look after the irrigable lands which he has been advertising in The Fruit-Grower. With him went a number of persons who go to select locations, and a telegram from Mr. Gregory states that when the train left Toluca, Mont., it was found there were over 200 persons on the train who are going to look after lands in the new country, and in the crowd were nine families who go to make that section their future home. Mr. Gregory feels much encouraged, and will have much to say of the country upon his return. Applications for the lands are coming in rapidly.

Peonies for Everybody.

Readers of The Fruit-Grower are familiar with the increasing popularity of the peony as a flower for the multitude. The newer sorts come in a great variety of shades and colors, and are as fragrant as the rose. They are perfectly hardy, ar not subject to disease or insects, and once planted need no care whatever, but the blooms will increase in number each spring as the plant becomes better established. Truly, everyone should have a lot of peonies. In th s issue Stumpp & Walter Co., 52 Barclay street, New York, have an advertisement of their peonies. They have a full line of herbaceous peonies, and in addition have the Japanese tree peonies, which are the newest importations. These tree peonies have even a richer coloring than the herbaceous sorts, and are delightfully fragrant. No money which is spent for peonies will ever be regretted, for anyone can raise them, and they will delight everyone who beholds their beauty. We recommend that our readers send to Stumpp & Walter Co., 52 Barclay street, New York, for their catalogue, which includes many other things which should be in every garden. Write today, and the plants can be set this spring.

Michigan Fruit-Growers at Fremont.

The final meeting of the Michigan State Horticultural Society, before spring work opens, will be held at Fremont, Tuesday and Wednesday, March 21 and 22. Growers of Newaygo, Oceana, Kent and Muskegon counties will unite in welcoming the State society and in making this meeting a rousing success.

One session will be devoted to the general subject of "Orchard Fertility;" another to the various methods and aids in "Marketing," with a full discussion of the proposed "Fruit Marks" law. This law would compel each shipper to place his name and address upon each package of fruit, with a view of raising the standard in Michigan, and so raising the reputation of Michigan fruit. Other timely subjects will be the "Farm Labor Problem," "Farm Gardens." "Better Business Methods" and "The Farmer's Fruit Supply."

Special cultural methods for the peach, apple, cherry and small fruits will be presented by experts, including varieties, diseases, grafting and spraying. The beautifying of home grounds, forestry and good roads will be discussed at the evening session.

Questions, for which answers are desired, should be mailed to Secretary C. E. Bassett, Fennville, who will send programs to any address.

Demonstration of Sprayers.

E. G. Hoover of Wichita, Kan., writes that the horticultural society of that place held a field meeting recently, at which a number of manufacturers of spray pumps gave a demonstration of their machines. The manufacturers were assured that the pump which pleased the members best would receive at least three orders for power sprayers, and Mr. Hoover writes that these orders went to the Wallace Machinery Company of Champaign, Ill., whose sprayers pleased the members very much.

If you want a cheap, durable sprayer, one that is giving the best results, write to the Hillis Dust Sprayer Co., McFall, Mo., for particulars of their dust process. Any person raising garden, fruit, melons or tobacco should not fail to invest in one of their sprayers.

The Ozark Plant Company of Marionville, Mo., has about 20,000 choice Cumberland raspberry plants for sale.

Farmers Need Pay Nothing Down On a Fine Victor Talking Machine

Write to Lyon & Healy, 17 Adams St. Chicago, for their offer. Pay for records only. Thousands of homes are availing themselves of this great opportunity to secure one of these splendid entertainers. Begin to pay for the Victor next month.

"How Money Grows"

is the title of a book which tells how to invest small sums ($10 or more per month), how to tell a good investment, how you might have converted $100 into $358.83, how to choose between real estate and stocks, how savings banks make their money, how to choose your partners, how to guard against uncertain "prospects," how to protect yourself in case you should not care to hold an investment indefinitely, etc. This book is not an advertisement of any particular investment. It is a general "talk" about investments, based upon my experience and observations. Write me a postal saying, simply, "Send 'How Money Grows.'" You will receive the book, free, by return mail.

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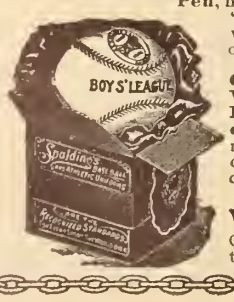
Send us your name & address and we mail you, postpaid, 34 packets FRESH SEED. Name kind desired, Vegetable, Flower, or assorted. Sell them at **Three Cents** each, and return $1.00 to us (use extra 2 cents for mailing letter) and we send you at once, postpaid, the Premium selected. **Sterling Silver** finish **Pendant**, with your monogram engraved, and 24 inch sterling silver chain; **Waist Set**, sterling silver finish, with stone setting; **Gold Ring**, assorted stone settings; **Fountain Pen**, hard rubber, guaranteed satisfactory; **Base Balls**, "Spalding," none better; **Infielder's Glove**, buck, very strong, and many other useful articles described in our Premium List sent free with seed.

We offer other Premiums—**Ladies Waists, Skirts, Curtains, Pillow Shams, Leather Hand Bags, Watches, Bracelets, Neck Chains, Boys Suits, Rifles, Base Ball Goods, Knives, Table Covers,** etc. Upon examination, if premiums are not found as represented, return them, and we will return money received for seed and present you with seeds free. We could not make such a liberal offer unless we were absolutely certain our seeds and premiums would please you.

FREE



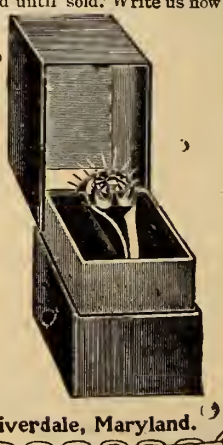
We Guarantee the Seed to be Fresh, Clean, and true to name. Put up in colored picture packets, showing contents, making them easy to sell.

SEEDSMEN and breeders of High Class POULTRY.

SEND NO MONEY. We trust you with the seed until sold. Write us now for 34 packets, you can easily sell them in an hour.

NELSON, IOWA, Dec. 28, 1904.
Risdon Seed Co., Riverdale, Md.
SIRS:—Please send me the enclosed order of seeds. Last year was the first time I ever used your seeds, and found them to be the best I ever planted, and will never plant any other if I can get the Risdon seed.
Yours very truly, WM. E. TRENT.

DANDRIDGE, TENN., R. F. D. No. 2, Jan. 9, 1905.
John R. Risdon Seed Co., Riverdale, Md.
Please send me 85 packets of seed, I want the watch for premium. You are the most reliable firm I ever dealt with. I sold seed for you last year and received the best fountain pen I ever saw. Your agent, ARTHUR GAINS.



Active AGENTS WANTED.
BIG CASH COMMISSION. We pay cash if preferred to premiums. Write today for our special offer.
Address JOHN R. RISDON SEED CO., Dept. 28, Riverdale, Maryland.

Give us a List of Trees

you want to plant this spring and see how cheap we will price them to you. We have a large surplus of

Apple, Peach, Pear, Cherry, Grapes, Pecans, and English Walnuts

Write for Catalogue

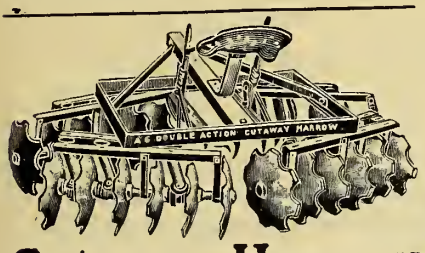
Southern Nursery Co.

WINCHESTER, TENN.

WOODVIEW NURSERIES

Until surplus is reduced will quote Special Prices. Name number wanted and size, when you write. 50,000 Apple, 50,000 Peach, 13,000 Pear (6,000 Bartlett), 25,000 Sour Cherry, largely Early Richmond, Dyehouse and Montmorency; 8,000 Japan Plums. Catalogue.

B 4, MT. HOLLY SPRINGS, PA.



Cutaway Harrows

Are the best for orchard cultivation. J. H. Hale and other successful growers use them.

CUTAWAY HARROW CO., MFGS.
Higganum. Connecticut.

Forest Tree Seeds

AND SEEDLINGS

A large lot of Catalpa Speciosa and Black Locust Seeds; also other Tree and Shrub Seeds and Seedlings. Large stock of Catalpa, Black and White Walnut, Red Bud, Sweet Gum, Sycamore; Tulip, Poplar Seedlings, 6 in. to 6 feet; also a variety of seedlings and cuttings. Send for trade list.

Forest Nursery & Seed Co.

Irving College, Tennessee.

Apple Seedlings Apple Grafts

Pear Seedlings and Grafts. Black and Honey Locust, Russian Mulberry by the million or in small lots as wanted; also large general nursery stock at favorable prices.

GAGE COUNTY NURSERIES
BEATRICE, NEB. J. A. GAGE, Prop.

APPLE ROOT GRAFTS SEEDLINGS TREES

We can make it to your interest to correspond with us concerning the above.

Jackson County Nursery Co.
Lee's Summit, Mo.

100,000 Apple Seedlings
NUMBER 3
For Lining Out—VERY CHEAP

ROOT GRAFTS

put up in any style or quantity. A complete general Nursery Stock. Write for prices.

HAWKEYE NURSERIES, Stratford, Ia.

Big 4 Nursery

We grow on our own ground, a general line of Nursery Stock. We have a fine lot of cherry and other fruit trees; also Berry plants. We deal direct with the farmers. Get our Catalogue.
THE BIG 4 NURSERY. Urbana. Ind.

Intensive Gardening in Wisconsin

When you ask "What is the most profitable garden crop you ever raised?" one is carried back to the '60s, when we got $3.00 to $4.50 per bushel for sweet potatoes and 50c to $1.00 each for muskmelons and 40c per box for strawberries, etc. Yet this is probably not what is intended by the question. Presuming a more recent experience is wanted, let us look over things still fresh in mind and see. There is the onion crop (before the advent of the onion maggot), which could be depended upon to give very good returns. We seldom got an average of less than 600 bushels per acre, and often more. The price ranged from 35c to 60c per bushel. But perhaps early cabbage, as we grow it, will be as interesting in this line as anything.

We set our strawberry beds in rows 3½ feet apart and plants 21 inches in the row, then set Charleston, Wakefield and Early Spring cabbage in the middle of the space and in line with the strawberry plants—about 6,000 per acre. The soil is rich black sandy loam, cultivation done with hand wheel hoes and common garden hoes. The cabbage comes on July 1st to 4th, and by Aug. 10th should all be harvested, the stumps pulled up and the berry plants trained and cultivated. If the season is dry it is necessary to turn the steam pump on to get results, but while we are watering the cabbage, of course the berry plants get their share; so we are not working for only the one crop. Sales start in at about 75c per dozen, then price soon drops to 60c, where it stays until cabbage is quite plenty, then the price may drop to 50c or 40c, but by that time the shipping season is on and the big heads—ten to fifteen pounds—usually go into crates, which are sold by the crate, and frequently bring 5 to 7 cents each for some days. Then lastly comes the "clean up" cut, where every head is cut for the kraut factory. This lot varies largely, but frequently runs to $100 to $125 for the lot of three or four acres. This gives a very satisfactory crop as a rule, varying from $200 to $250 per acre for the cabbage and leave a good crop of berry plants for the next season's work.

If the ground is well prepared and good plants raised and carefully sorted, discarding all poor plants at time of setting, then thorough cultivation and care given, every plant should make a good head except a very few which may meet with some accident. We have grown a good many thousand, averaging ten pounds and upward per head. But only intensive cultivation will do it.

A Profitable Novelty.

The best novelty we have grown lately is Spark's Earliana tomato. Last season we had a block of about 1⅛ acres, which brought us upwards of $400. Seed was planted in a hotbed and plants transplanted to other hotbeds, which had only cloth covers. Plants were set six inches apart, which gave fine, stocky plants with large bunches of blossom buds at time of field setting. The situation was a warm, sandy soil, well manured and plowed pretty deeply, about 10 to 12 inches. Rows marked 3½ feet by 2½ feet in the row. This gives about 5,000 plants per acre. We dug holes with a shovel and set plants in, filling the hole only about half full, then watered freely and filled in after water had soaked in. Of course the plants were soaked before being taken from the hotbeds. Treated in this way the plants hardly showed any check in growth as the result of being set in the field. Thorough cultivation was given and also spraying with Bordeaux for blight. The sales book shows the first sales July 27th.

Our neighbor, with only a wire fence to separate us, got a very poor crop of weeds with an equally poor growth of clover in an effort to "get his land fixed up so it will be good for something." The writer took occasion to call attention to the similarity of the natural conditions and the variation in results as showing what good, intensive cultivation would do as compared to intensive neglect.

Sales on this block had reached the $300 mark about the time our neighbors got to picking from common field varieties with common culture.

Labor-Saving Methods in the Garden.

In speaking of "saving labor" we should put two constructions on the words. First, to accomplish desired results with less labor; second, to spend more labor or extra effort on a crop to save or make more effective that previously bestowed. This article will have mostly to do with the latter proposition.

The subject is spraying. The work of spraying adds to the labor, but makes more effective, saves, that previously applied; consequently it saves labor by increasing the production.

Last season the blight struck our wax beans one bright warm morning and we rushed the spray pump to the rescue, much as the fire company answers a call. An application of Bordeaux saved the crop, if we may judge of previous experience with blight. In 1902 and and 1903 we lost heavily on our tomatoes by blight. Last season we sprayed several times and had a fine crop. In 1903 the blight struck us the last week of August, and went over fields like a pestilence. In five days' time every leaf on a five-acre patch of New Yorker potatoes was as dry as if baked. In a few days more the currant leaves were all dry. The celery was very badly damaged, etc. Last season we sprayed our currant bushes and the leaves were green when hard frosts came, while our neighbors,' which were not sprayed, were bare of leaves weeks before frost. Bordeaux did the work. So we must class spraying as labor saving. This coming season we mean to carry the work farther and to spray more crops, confidently looking for results in the garden line just as marked as in the fruit line.

Let no one think, however, that spraying in the garden, where things are near the ground, can be done carelessly any more than in the orchard. "Intensive" spraying is the key to success here as in cultivation. The crowd brings up the rear. Let us do intensive work and lead.

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Green Bay, Wis.

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108 Varieties.

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all desirable sorts and all different, delivered to you, **charges prepaid.** We have also large two year old dormant roses, tree roses, choice house and bedding plants, floral novelties, etc. 24 large greenhouses—20 acres in flowers. Catalogue free if you mention this paper.

Iowa Seed Co., Des Moines, Iowa.

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the great corn for cattle feeders Ears a foot long, rich in oil, easily broken or crushed. An enormous yielder. Made 119 bu. per acre on my trial grounds, outyielding all of the 84 other varieties except the White Elephant. If you want corn that will outyield everything in the neighborhood try these two. Samples free for the asking. I will also send you my new catalog of seed corn, seed potatoes, garden seeds, and in fact all kinds of seeds but the poor kinds.

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Box 15 - Shenandoah, Ia.
"The ear seed corn man."

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We make a specialty of Market Garden Seeds and can supply the highest quality of fresh, high germinating seeds from carefully selected seed stock saved from typical specimens only. We can save you money in buying as well as make you money by planting our high grade seeds. Send for our catalogue and Market Gardener's Special Price List. Address,

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Are Equally Valuable. Very large stock Oats, Corn, Barley, Speltz, Clover, Timothy, Rape, Millet, Garden Seeds, Tools Poultry Supplies, etc. Gold Medal Awarded at St. Louis. 80-Page Catalog Free.
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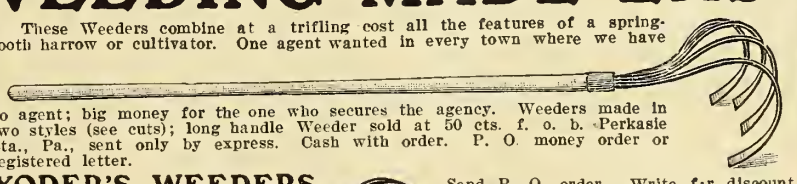
Buyers for 1,500,000 berry plants; 40 varieties S. B., 14 of B. B., 8 of Red R. B., 6 of Black R. B., 4 of D. R.; also fruit trees, etc., all cheap

WEEDING MADE EASY

These Weeders combine at a trifling cost all the features of a spring-tooth harrow or cultivator. One agent wanted in every town where we have no agent; big money for the one who secures the agency. Weeders made in two styles (see cuts); long handle Weeder sold at 50 cts. f. o. b. Perkasie Sta., Pa., sent only by express. Cash with order. P. O. money order or registered letter.



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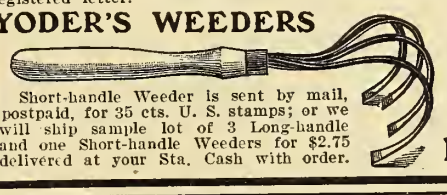

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Send P. O. order. Write for discount to agents, or ask your dealer and insist on him to get them for you. Always give your name in full and full address very plain. This ad. will only appear again in April number. Write today. Mention this paper and address,

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Order at once, sending Postal Money Order, bank draft or registered letter. If you wish to see shades first, send for color card. Barn paint guaranteed to be of best minerals, pure linseed oil and high grade Japan. Will last as long as wood to which it is applied. MONEY BACK IF NOT SATISFACTORY. We make and guarantee paints for all purposes—house, carriage, wagon, floor, etc., lower than anybody else. Send for sample shades.

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Gardening Department

This department is conducted by Henry Field, a market gardener and seedsman of Shenandoah, Iowa, in the southwest portion of that state. Besides his regular garden work, Mr. Field has extensive test grounds, the reports from which appear exclusively in The Fruit-Grower. Those of our readers who desire information concerning any garden problem are invited to write to Mr. Field and tell him their troubles. He will be glad also to receive samples of vegetables and flower seeds for testing in his trial grounds.

Every Man a Natural Born Gardener.

Of course you all know that gardening is the oldest of human occupations and the most honorable. Our forefather Adam was established in business as a gardener with land and supplies furnished, and when he sinned his punishment, the most severe that could be visited on him, was to be driven from the garden and forced to make his living at straight farming and stock raising.

It is said that every man has a streak of the "Old Adam" in him, and it is certain that every man, no matter what his position in life, has at times a longing to get back into the garden, that can doubtless be traced directly back to Adam's longing for the garden from which he had been driven forth with the fiery sword. It crops up in the most unexpected places. The millionaire president of a great wagon factory in an Illinois city has been writing me all winter about a four-acre piece of land that he expects to garden this summer—real garden, not gentleman farming. He has written and thought more about that four acres of potatoes and onions than about his whole factory, and asks for all kinds of advice as to seed, soil, cultivation and other details.

A merchant prince in Chicago, with an embossed letter head and a private secretary, wants advice about growing sweet corn and string beans.

A legal expert in New York City wants advice about growing potatoes and early peas and writes four pages about it.

An Episcopalian minister, at the head of a fashionable church in one of the large cities, wants advice about growing sweet corn in the back yard of the parsonage, and a Methodist bishop writes about pole beans.

Trifling matters? Not a bit of it. Every man of them will be better fitted for his own great work in life by reason of his contact with Mother Nature. It will make a better. broader man of him.

Now remember, next time any one speaks slightingly of gardening, that it was the first occupation that was divinely ordained, and, if I am not mistaken, it is the only one outside of the ministry that was ever so ordained, and gardening outranks the ministry in point of time.

The Effects of the Blizzard.

The February blizzard was the worst in my recollection and was very general over the whole United States. The reports of damage are slow coming in and it is hard as yet to tell just what has been done. It is certain that there will be no peaches in southwest Iowa, and I think there will be no peaches anywhere in the corn belt. Raspberries and blackberries are badly hurt and so are cherries. The fruit and plants that were close to the ground were well covered with snow, and were not seriously hurt. I never saw strawberries look better. Pansies and volunteer poppies in the trial grounds are bright and green and will soon be blooming. Many people think that pansies are hard to grow and have to have a sheltered shad place, but I think it is a mistake. In my trial grounds I had the pansies planted in the open ground right out in the clear, and tended just like onions. They bloomed constantly all summer and are alive and bright now and will be blooming again in a short time.

White-Meated Watermelon.

A customer writes in to know if I can get him seed of the old fashioned white-meated watermelon. I used to have such a melon years ago but I have lost the seed of it, and I am unable to find them listed in any catalogue. If any one has seed of it, send in a little of it and I will grow enough seed so I can supply them next season. It is too good a thing to be entirely lost.

The Onion Situation.

Onions are selling very high, from $1.00 to $1.25 per bushel in all the big markets, and the man who has onions on hand has something better than a gold mine. If we could get such prices every year we would soon be rolling in wealth. I look for lower prices the coming summer, as there will certainly be lots of onions planted. The best prices will be for the men who get in early in the season, and for that reason I would advise the planting of at least part early varieties. Also grow some from sets. The sets are high priced this spring in sympathy with the big onions, but they will make an early crop ahead of the seed and may pay big.

Hollow Celery.

A friend writes in to know why the celery sometimes goes hollow, and I find the complaint quite general. As near as I can make out the trouble is hereditary in the plant, and if these hollow stalks are allowed to go to seed the crop from that seed will show more or less hollow stalks, and there will be no help for it. The only way to do is to get the best possible seed. The better class of seed men grow celery seed or have it grown, only from the most perfect, solid stalks, and the result is a fine crop, but the more careless or so-called "cheap seed man" will take the seed crop from a whole row without any selection. It can be sold for less money, but is a mighty poor investment.

Plant Cow Peas.

I want to insist again that there is no more valuable catch crop for the gardener than cow peas or soy beans. They will make good growth planted as late as July, and are equal to clover to plow under. The tops of either one make good hay, and the seed make the best chicken feed in the world. A pile of cow pea vines with the pods left on will keep the chickens scratching all winter and give them just the food that they need to balance up other grains.

In my trial grounds last summer I had a number of varieties of cow peas and watched them closely, and I wish to emphasize the fact that we farmers in the north have been missing a great opportunity in not growing more of them. All of the varieties I had ripened plenty of seed, and some of them I believe would have made forty bushels of seed to the acre. The New Era and the Whippoorwill seemed to be the best. All the varieties made a mass of vines that would have made two or three tons of hay to the acre. The only trouble is it would be hard hay to handle. It would be as rich, though, as the best of clover hay, and we could afford to go to some trouble for it. I have heard since that the way to do is to mix in a little sorghum seed in the sowing, and the sorghum will hold the peas up so they can be cut easily. Remember that the cow peas are not peas at all, but a kind of beans, and are heat-loving plants. Don't sow until the ground is more than warm enough for sweet corn or the seed will rot in the ground. I sowed last of May. The hotter the weather the better they grow. The best of it is they renew the land like clover, and are much easier to start than clover. I expect to use a great many of them this season as a catch crop in the garden. I will use some of them for hay, and the rest to plow under. I did soy beans that way this last summer on an old strawberry bed. Sowed in first part of July, they made big growth two feet high by frost, and then I plowed them under. They are easier to handle than cow peas, but do not make quite so much growth.

Kaffir Corn for Fodder.

For fodder we always plant lots of sorghum and kaffir corn. This year it is almost impossible to get good sorghum seed, so we will use kaffir instead. The seed of it is abundant and of fine quality this year. It will make a heavy crop of the best of

ONE PLANT OF
The Almo Strawberry
One-third Natural Size.

This plant has 75 sound berries on it which made a quart when picked. I'm the originator of this grand berry.

$25.00 GIVEN AWAY

I will give to the party sending in the best name for my new berry which I will introduce this fall, twenty-five dollars. You want to get next to this grand offer, so send at once for my catalog which gives you the information wanted. A large stock of other varieties. Send today for catalog.

JAMES A. BAUER *Mention this paper* JUDSONIA, ARK.

Great Crops of Strawberries
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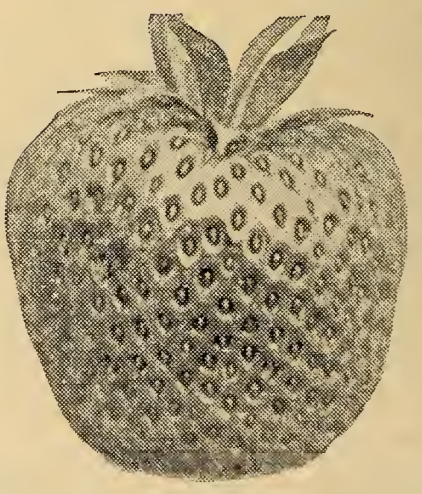
HOW to GROW THEM

The Best Book on Strawberry Growing Ever Written



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BOONE COUNTY WHITE

Specially suited for the South and Southwest.

The Tucker Plant Breeding Farm

of the Johnstone Land Co. Write for our Free Corn Booklet and Prices. **Geo. M. Tucker, Ph. D., Mgr. of this Department.**
Blodgett, Scott County, Missouri.

HIGH GRADE SEED CORN

Scientifically grown, carefully selected, kiln dried and shipped in ear. Varieties suited for the corn belt and north far as Dent corn can be grown: soil and climatic conditions here combine to make this the ideal location for growing the finest quality of Seed Corn. We grow all the Corn we offer and guarantee all sent out. We also have the most complete line of Hardy Nursery Stock in the Northwest. Write for Corn and Nursery catalogue.
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Extra Early White Spine

Cucumber Seed

I make a specialty of this one variety only. My seeds are grown under irrigation and test higher, germinate stronger than seed grown under rainfall. My seeds are absolutely pure. Delivered anywhere in U. S. or Canada, 50c per pound.

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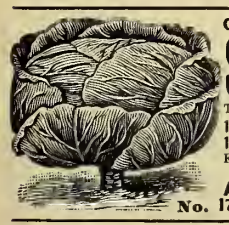

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Mersereau, Kenoyer and Early King Blackberries, Kansas, Cumberland and Cardinal Raspberries, Lucretia Dewberry, THE LOGANBERRY; well matured plants, true to name. Write for list. W. W. CLARK, R. F. D No. 1, [illegible] AN

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IOWA SEED COMPANY, DES MOINES, IOWA.

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TWO-YEAR

Grown at Lee's Summit

Where the soil produces trees of firm texture, trees that stand transplanting, trees that are now standing in the row where they grew, trees that have made Lee's Summit famous.

Grown by Butterfields

Which signifies that no expense has been spared to insure quality; which guarantees the varieties to be true and of the best strain.

Grown for Commercial Planters

In the middle west, hence varieties for the middle west. Varieties tried and true.

A Complete Assortment

Of other nursery stock that is hardy and can be grown out of doors—varieties for the middle-west.

We are mailing *Almost a Catalogue,* to our customers, and if you say the word, will mail one to you.

M. Butterfield & Son, Proprietors

The Lee's Summit Star Nurseries

Lee's Summit, Missouri

Asparagus for Home Use.

Now is the time to put out an asparagus bed. You can get the plants from any good seedsman, and they are cheap. You can get 100 for $1.00, postpaid. The 100 plants would be about what you would want for a small garden patch. Set them very early on any good soil about a foot apart in the row and with the rows any convenient width apart. Set them near the level just like any other plant. Keep well hoed the first summer, then in the fall mulch heavily with manure and keep them mulched every spring and fall after that. The mulching will keep the weeds down and keep the plants growing. You can cut off of it the next spring after setting, and the bed will keep getting better every year for several years. We have a bed that is twenty years old and as good as ever. We always set good, strong one-year plants grown from the seed. You can grow them from the seed yourself, but it is tedious work when the plants are little.

Sunflowers for Chickens.

Sunflowers make mighty good chicken feed and are easily grown, especially the big Russian variety. They will grow on any soil and will make about as much yield to the acre as corn. Plant and tend just like corn. The seed is very rich and oily and is greatly relished by chickens, especially in the winter time. The best way to harvest is to cut off the heads and pile them in a crib or some such place to dry out. In the winter throw the heads in for the chickens and let them pick the seeds out themselves. Try it in some spare corner of the garden this year.

Varieties of Sweet Corn.

I am much interested in varieties of sweet corn, and expect to make extensive trials of them this summer. If any of you have local varieties of sweet corn that you think are better than any of the regular catalogue sorts, send me a sample for trial. I will have all the regular catalogue varieties myself, and what I want to get besides are the local sorts that have never been listed. They are often better than any other. I specially want to find the earliest possible variety and the deepest grained variety. Send about two ounces of the seed and be sure to enclose your name and address and a short description of the corn in the package, or on the outside of it. The results will be published in The Fruit-Grower in the fall. A two-cent stamp will mail it.

Scarcity of Seed Beans.

There is the worst scarcity ever known on wax beans and also on Stringless Greenpod. The seed grew all right, but owing to wet weather at harvest time it all failed to make a merchantable crop. There is not half enough seed to go around on many of the sorts and some one will have to do without. No seed man now will fill orders for beans alone, but saves the small supply of beans for customers who send in general orders. Any one that has a supply of good seed of wax beans of any good variety should divide up with the less fortunate.

C. P. R., Clinton, Ill.—I will have over half an acre of strawberries to plow out this summer. Can I plant this land to late cabbage and have the cabbage mature? I can give it a heavy coating of manure. Want to put in strawberries again next spring. If planted to cabbage, what variety is best?

Cabbage will be all right if the strawberry patch can be worked down fine enough. The trouble is a strawberry patch is generally tramped over and packed down so that it will plow up lumpy and cannot be worked down fine enough to give a good crop of anything the same season. If you can get it disked and plowed and disked again till it is in good condition you will have time enough plenty to make a crop of late cabbage. Do not use the very latest varieties. Use Surehead, Allhead, All Seasons or Cornbelt.

If you want it for strawberries again next season, my plan would be to work it up good and sow it to soy beans or cow peas. Take off part of the growth for hay and plow the rest under in October. Then in the spring it will be in elegant shape for the strawberries. Cabbage is hard on land and must have the land in the best of shape for good results. It would be apt to do more damage by robbing the soil than the crop would amount to.

L. S. H., Snowden, Wash.—What kind of potatoes will succeed best in a rather droughty country?

In all the central west the Early Ohio type of potatoes are counted the best for droughty times. In western Kansas and Nebraska, where the season is apt to be dry, the Early Ohio is the only potato grown. The Pacific coast has a different set of varieties of potatoes from any we have here in the corn belt, and it may be they have something better fitted to the conditions there than any we could supply. My advice would be to plant the best varieties to be had there and to experiment with Early Ohio and Early Michigan.

★ GARDEN HUCKLEBERRY. ★

A new fruit from Washington State. Most desirable introduction of many years. Will outyield any other Berry ever grown. Grows from seed and ripens its crop same year. Berries jet black, four times the size of Huckleberries. For pies, jams, jellies, sauces, and canning, it is equal to any fruit grown. Full particulars in catalog, page 10. Packet of 100 seeds, 10 cts.

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Moore's Enreka and Reid's Yellow Dent. We make a specialty of growing the largest yielding varieties, rich in feeding value. Selected as husked and perfectly dried and stored. Practically perfect in germination. Has been winning in show room for ten years. Three firsts at Ames, 1905. $2.00 per bushel, in ear, $1.50 shelled. Samples Free.
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SEEDS Best that grow. We sell direct to gardeners and farmers at wholesale. Big beautiful catalogue free. Write today.
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are going to all parts of the United States and are becoming famous wherever known for their hardiness and vigor. Get them from the

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Our Prize Gardening Articles

In our February issue we offered some prizes for the best gardening articles, and suggested that correspondents give particular attention to "the most profitable garden crop they had ever grown"; also to recommend some of the novelties they had found valuable. Many articles were submitted and we could not use all of them. The following cover a wide range, and will prove interesting. The awards will be announced next month.

Peas and Radishes.

My money crop for five years was peas and radishes, in a former location. And right here I wish to state that said location was just right for these two vegetables. Of course, I did not confine myself to these alone, but raised a variety of different kinds for market. The land was a steep hillside, facing south; very sandy—in fact, all sand and gravel. And so steep that it could be plowed only one way—east and west. But it was just outside of the limits of a city having about 75,000 inhabitants. Only a three-mile drive, on paved streets, to market. I state this so that some one who reads this and has land as described, but is not near a good-sized town, or city, had better not go into it too heavy. This land was fit to work very early in spring — usually about March 15, or shortly after. Having my land plowed and harrowed, I went right to planting, using a good seed drill and, above all, good seed, procured from a reliable seed-grower. For the first planting I made I generally used the smooth, hardy kinds of peas, which come in the class called "first and best;" and I also liked the Alaska very much on account of its nice, dark-green color. For the latter plantings I used American Wonder and Little Gem. Also found Gregory's New Surprise to be extra early, very sweet and good bearers. But so far I have not found a variety that is better than Nott's Excelsior, in the early class of peas. The Telephones are fine; but on such soil of which I speak they are not adapted.

Having commenced drilling in the seed I run my rows in pairs, about 12 to 15 inches apart, then omit one row, leaving space of about 30 inches; then pairs again, and so on till the patch is completed. This done, I commence drilling a row of radish seed in the center of the 30-inch spaces. This must be of the earliest kind, so as to be out of the way before the peas are ready to pick. That space then can be used by the pickers to walk on.

Cultivation must be given with a hand-hoe; being a hillside, the wheel-hoe throws the soil too much on the row on lower side. If given one good hoeing and the season is favorable it will make the crop. And before that was ready I would engage pickers enough to make sure to have help enough to handle it. The price for picking is from 15 to 20 cents per bushel. Having started to pick, I would look after the pickers and take in what was picked out of the sun. The following morning, about 4 o'clock, I would be on the way to market with those peas. The first ones usually bring $2 per bushel, the price going lower as the supply gets stronger. In ordinary seasons they seldom go below 60 cents per bushel. But I have seen them as low as 40 cents, and slow sale, the market being glutted. Have had high as thirty-five bushels on the market in one day, and realized $1.20 per bushel. The radishes generally sell very good—from 15 to 20 cents per dozen bunches, which is not big money, but if you can dispose of 50 to 100 dozen daily then it gets big.

Having now disposed of the peas and radishes, the land is again turned over and planted to cucumbers for pickling, which makes another good crop, if not too hot and dry.

Peoria, Ill. ALBERT STUFF.

Tomatoes and Gem Melons.

The most profitable crops of vegetables I have ever grown are extra early tomatoes and Gem melons. I have tested most all varieties of early tomatoes, and Spark's Earliana for earliness, hardiness, productiveness and good quality heads the list. The first pickings here usually sell for $3 to $4 per bushel. I cannot estimate the number of dollars per acre, as the sales usually end in thirty days in this market after first picking. Every gardener understands now to start plants in hotbeds, transplant under canvass or glass, and force until ready to set in field. I will give my method of cultivating after setting in field to get fruit to market in time to get the big price. I will give my plan to produce early tomatoes in Central Indiana. I don't say it will be a success in all soils and climates. I aim to have my plants to commence blooming by the 20th of May and then transplant to the field. I set in soil that I am sure is very rich in nitrogen, potash and phosphoric acid. It requires plenty of all three of these plant foods in a soluble form to hasten any crop to maturity. Every sucker is pulled off below the first bunch of blooms and all are kept off during the growing season. My plants are allowed to fall on the ground when they get top heavy and remain there until the fruit ripens. I have in the past trained part of my plants to stakes four feet high and got two pickings of ripe tomatoes that trailed on the ground before any ripened on stakes. Tomatoes will not ripen on my ground when staked up as soon by ten days as they will trailing on the ground. We are admonished to be brief in this article and I cant give any idea of the philosophy of this, but long experience has taught m to drive no more stakes.

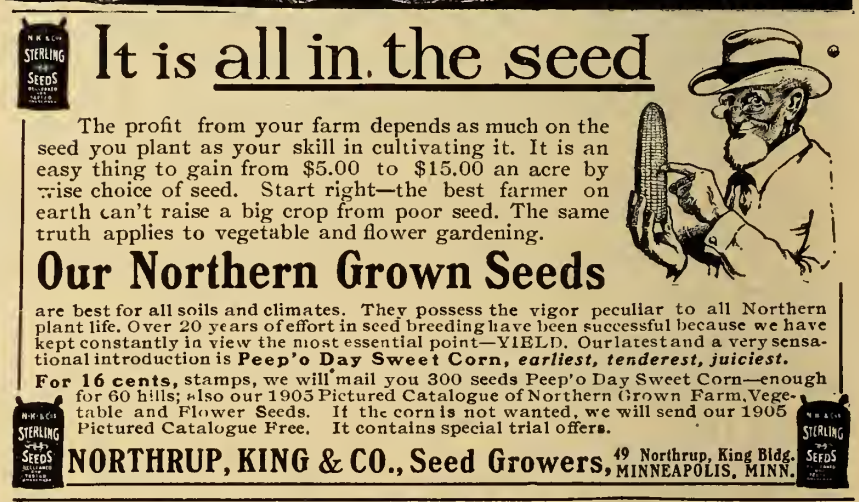
The two melons I grow for our market are the Emerald Gem and the Netted Gem, or Rocky Ford. I get these early by starting in cold frame and transplanting. I never give melons any bottom heat. The Emerald Gem is our great favorite here for table use and will ripen by the first of August in this latitude and will continue to fruit until frost, and the person who never tasted an Emerald Gem has missed a great luxury in this life. Its home is on clay loam, as it will not make a crop on sand like the Rocky Ford. The way I have made a success in transplanting melon plants is to dig them up with a trowel, shake all the soil from the roots shorten the longest roots, puddle them in soft mud, set them deep and firm the soil around them until the soil is air tight. This will leave a basin around each plant, which is to be filled with water, and when water settles pull dry soil up around plant (not pack). I have for many years set all kinds of melons and cucumber plants this way. When transplanted the last of May, and soil is freshly plowed, the work of cultivating is cut in two, and the work of the striped beetle is past, the greatest enemy of the melon and cucumber. It costs but little time and money to spray with Bordeaux mixture and this will prevent blight.

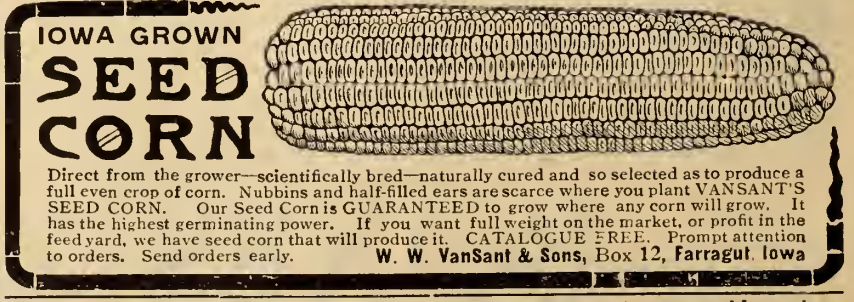
WM. H. WADE.

Danville, Ind.

The Fordhook Squash.

Last year, at the suggestion of a neighbor, we planted a few hills of Burpee's Fordhook squash, and the result was so highly satisfactory that we most cheerfully give our experience and testify to the excellent qualities of this new vegetable. We planted in a light, sandy soil, without any special preparation of the ground — and the season was extremely backaward—yet the vines grew quite thrifty and the yield was very good. This





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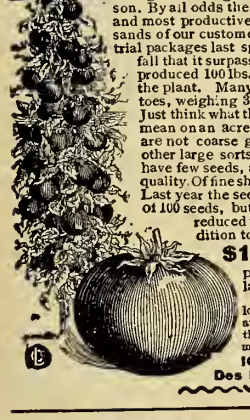

Try the New Majestic Tomato

The greatest vegetable novelty of the season. By all odds the largest, finest flavored and most productive in existence. Thousands of our customers who received small trial packages last spring wrote us in the fall that it surpassed all other sorts and produced 100 lbs. to 147 lbs. of fruit to the plant. Many reported single tomatoes, weighing 3 lbs. to 6¾ lbs. each. Just think what this kind of a crop would mean on an acre of ground. The fruits are not coarse grained and poor like other large sorts, but are smooth, solid, have few seeds, and are unsurpassed in quality. Of fine shape and beautiful color. Last year the seed sold at 40c per packet of 100 seeds, but this season, we have reduced price to 15cts, and in addition to this we are offering

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prizes this year for the largest tomato grown.

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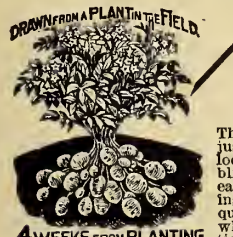

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Our New Seed Catalogue for 1905 is free and will be sent with every potato. If you enclose address of two families who buy seeds, we will include **Free Sample Great Corn Novelty** to be offered next year. Send to-day.

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new squash is remarkable for its evenness in size, shape and color, being usually about eight inches long and about three to four inches in diameter, making a convenient oblong shape; surface slightly ridged and of a beautiful light, yellow ccolor. The yield was good, being six to a dozen to a vine, and the vines begin to bear early and continue to bear all through the summer and fall. The specially good qualities of this squash are that it is ready to eat as soon as it begins to bear and if gathered and stored in a dry cellar will keep late into the winter.

To prepare for the table, spilt open lengthwise, remove the seeds, put a small piece of butter and sprinkle a teaspoonful of sugar on each piece and bake for about forty minutes, and you have a most delicious vegetable—one that must be eaten in order to be fully appreciated. Also for making pies, it is the very thing; nothing better. C. P. BOLES.

Bole's Summit, near Fayetteville, Ark.

Growing Early Tomatoes.

For years we planted our tomato seen soon after the first of February, but the best we could do the plants would grow slow, have poor color and look discouraged. This condition seemed to react on them later and lessen the yield. When set out doors they would come on well and be fairly early, but we wanted to beat the fellows who have hot-houses and sandy soil; even though our garden is heavy clay loam and does slope to the north.

So last winter we got a water-tight box, eighteen inches square and eight inches deep. In one corner of this we set up an eight-inch piece of two-inch pipe to pour the water into, so it would come to the plants from below and not cause the soil to get hard. Next we put into the box three inches of rotten stable manure, and the dirt on top of that. The dirt was sandy loam, and we put it through a sieve to get it in the best condition.

We set the box in a warm south window, planted the seed and added the water April 1. Once a week we pulled out all the weeds, worked up the soil around the plants and turned about two gallons of water into the pipe. The plants were up in less than a week. In just three weeks we transplanted them in the same box, setting them an inch or more deeper than they grew. By May 10, which is as early as we are free from frost here, these plants were all larger than lead pencils and as tall as could be handled well. To set them we dug holes in the garden the depth of the spade blade, cut the dirt in the box into squares, and transplanted without disturbing the roots.

We trained them to stakes and kept pruned to single stalks. We had succeeded in keeping them growing fast from the time the seed were planted until the tomatoes were ripe. We had the first ripe tomato in town and the yield was large.

Of several varieties, the Freedom gave us the first ripe fruit in quantity; Chalk's Early Jewel were the handsomest, and Ponderosa the best to eat. E. P. FARNSWORTH.

Cresco, Iowa.

Early Potatoes and Sweet Corn.

We have tried all kinds of garden truck, such as onions, tomatoes, radishes, lettuce, etc, and have had some good crops that paid well. But the crop that has paid us best—that is, the most money for the least work—has been Early Ohio potatoes, followed by Stowell's Evergreen corn, for roasting ears. We plow in the fall, and the last three years have planted potatoes the last of March. We cultivate the potatoes three to four times, and about June 5 we plant sweet corn between the rows. About June 17 we commence to market the potatoes and each year we sell the potatoes from the whole field by June 25. By that time the corn is up five to six inches and looks rather spindling, from the shade of the potatoes. We cultivate the corn as often as needed, usually about three times. About August 20 to September 1 we begin selling green corn and about October 1 we cut the stalks for fodder. And right here I want to tell you something that has taken us several years to find out:

Sweet corn for fodder, cut up before frost, or before October 1, is hardly worth anything, as it usually spoils and stock won't eat it, while if cut after that date it will cure fine and stock will leave timothy hay to get it.

These crops planted as I have described beat anything we have ever tried, and the only thing that hinders a man from getting rich is the short time for high-priced potatoes and the limited market for corn. Our successes with the crops have caused remarks by our friends and neighbors and wishing to know about what we were getting out of it ourselves, we kept account last season of the labor and amount received from crops on a patch by itself, containing one-half an acre.

The labor item was as follows: For plowing, fall of 1903, man and team, four hours; for harrowing, marking out and planting potatoes, spring of 1904, man and team, eight hours; for cultivating potatoes three times, each time (man and team) two hours; for planting corn, one man two hours; for cultivating three times, man and team, each time, two hours; making a total of 24 hours for man and team, and two hours for man to produce the crop.

Now, as to proceeds: We sold from June 17 to 25, 34 1-2 bushels of potatoes at prices from $1.75 down to $1 per bushel, making $51.10, and sold 252 dozen roasting ears at 8 1-3 cets per dozen, making $21.00, and the fodder we estimated at $5. This makes a total crop, per acre, worth $154.20, produceed by forty-eight hours' work for man and team, and four hours for man alone. If there is anything that beats that we want it.

MRS. JOHN L. WILSON.

Centerville, Iowa.

$1,265 Per Acre—Or At that Rate.

Last spring I fenced off a part of my orchard in which a flock of chickens had roamed for three years. In one corner of this new garden, a plot of ground six yards wide and seven yards long was set with endive plants six inches apart each way. The poultry droppings had made the soil, which was a black loam, exceedingly rich. Two large apple trees which stood near by shaded the plants during the hot hours of the day. The weeds were kept down and the moisture conserved by frequent cultivation with a common, narrow garden rake. Pretty soon the plants covered the ground completely and their standing so closely together did not give them much room for spreading out, but forced them to grow into compact and long heads. Tying was not necessary, in fact impossible. The result was a most luxuriant growth, with the most of the plants so attractive in color, so crisp, tender and juicy that one always felt like eating more. From this small patch of ground was sold to private families and hotels over eleven dollars ($11.00) worth of endive, being at the rate of $1,265.00 per acre.

H. M. WINKEL.

Port Washington, Wis.

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A Woman's Garden.

Its size will depend upon the size of the family, and their liking for its products. For an average family of four to six persons, a plot of ground 100 feet square, or, say, one-fourth of an acre, would probably be sufficient for the ordinary garden vegetables.

Location.—A sunny exposure without any trees to shade it. Then a good drainage is necessary, and as near the house as circumstances will permit.

Preparation. — First fence against poultry; then if it need it, enrich with well-rotted manure. This we do every spring and fall. We always plow our garden about eight inches deep in the fall. In the spring, when the ground is thoroughly dry, we plow from seven to eight inches, and harrow the ground so as to pulverize the soil Then we prepare straight rows for everything, so as it will be easily tended. And never hoe in the garden when the soil is wet. If the weather permits, we never fail to hoe it twice a week.

What it should contain. — A few early potatoes, onions, radishes, pepper, a row of early lettuce, peas, beans, beets, cabbage, tomatoes, cucumbers and sweet corn. These are the staples of a family garden. With the above named list of vegetables properly planted and cultivated in a favorable season we obtain from the garden over half of our food supply during the summer season.

As a novelty we have tried the oyster plant and received the best of results. The most profitable garden crop was cucumbers, in 1902; beans, in 1903, and cabbage, in 1904.

A small space of our garden was devoted to cucumbers. The ground was well manured. The hills made to rise a little above the level of the ground. The hills were six feet each way. We put ten to twelve seeds in a hill. When they come up and about two inches high, we thinned them out to four or five of the strongest plants in a hill. Then cultivate well, and when time for gathering the cucumbers comes we always cut them off with a sharp knife so as not to injure the vines. We pick them regularly ever other evening. This gives you a nice shape and size pickle for canning. We canned twenty half-gallon jars, and also sold twenty gallons in brine from this plot.

From our crops of beans, in 1903, four rows across the garden yielded five pecks. From our crop of cabbage, in 1904, three rows made enough cabbage for our summer's use; then in the fall we made enough kraut to do us until spring.

To save labor and increase yield, our method is to keep the weeds down when they are small, so as not to choke the vegetables.

I always plant some flowers in the garden to make it attractive as well as profitable, and give it thorough cultivation, and it will produce food for the body, joy for the heart and contentment for the soul.

MRS. ETTA B. STEWART.

R. F. D. No. 3, Oregon, Mo.

Asparagus Is Profitable.

One of the most profitable vegetables that I grow is asparagus. My soil is not what I would select if I had my choice, it being clay, with rather a cold, heavy nature; but I had faith to believe that I could make it produce asparagus. So I went to work to prepare a half acre. Asparagus is a gross feeder and requires a liberal amount of manure, so I first spread twenty loads of good stable manure, piled up and pretty thoroughly rotted before spreading on the ground. I plowed that down about eight inches, deep, that being as deep as I could plow without turning up the subsoil. When the ground was well prepared I made furrows three and a half feet apart. I now think that four would have been better. The furrows were made six inches deep. I set one-year-old plants in the bottom, spreading out the roots and covering about three inches deep, and finished filling in the furrow as we cultivated after the aspraragus began to grow. The plants were planted from twenty-four to thirty inches in the row.

We got a fine growth the first year, which we mowed and burned about the first of November, and again spread twenty-five loads of manure, which we cultivated in the next spring as soon as the ground would do to work, setting the cultivator to work about two inches and a half deep, so as not to disturb the crown. This we have kept up ever since the bed was planted, giving good cultvation while we are cutting, and after we quit, until the asparagus has made such a growth that we cannot get through it with a horse.

The bed was planted six years ago last spring, and has continued to get better every year since. At one year old we cut none, at two years old we cut a very little, but at three a paying crop was harvested. Last year, the sixth from the time of planting, we realized almost $250 from the crop of a half acre. At one cutting the best of the season, we cut $15 worth. SNEAD THOMAS.

Marion, Ind.

Money In Tomatoes.

The most profitable garden crop I ever raised was five cents worth of Dwarf Champion tomato seed planted in a common box from a grocery store.

Put chips in bottom, then manure, on top sandy soil, planted the seed early, kept the box wrapped up on cold nights and in the living room heated by common wood stove. When weather grew warm I set the box out in the sunshine. Plants were thick as they could stick in the box, and were rather slender. I set them out in made soil or creek bottom. I went over the patch to kill cut worms and stirred soil after every shower; the soil was well cultivated and kept perfectly free of grass and weeds.

The first tomatoes had worms in them, and when ripe I gathered them and fed to the chickens. The next were fine and large, so I began to sell. About that time a storm tore my vines up, and to look at the patch it seemed to be ruined. The vines were not staked nor pinned, but they grew, and I sold $35 worth, canned more than enough to do a large family, traded some to get my fall sewing done, and fed bushels to my chickens; in fact, fed six bushels one day when it was not possible to get them to town. When frost fell the vines were loaded with ripe and green fruit.

SALLIE CLEVELAND.

Pottsboro, Texas.

Big Crop of Cabbage.

An old strawberry bed was broken up in July and plowed again in November. The following spring it was covered with hog manure from the railroad stock yards at the rate of 180 loads to the acre, and plowed again as soon as the soil was in a suitable conditlon. And from that time on to July 1st was cultivated once each week with an Acme Pulverizer, thus destroying all weed seed and having the ground firm and fine. Plants were then set in rows, two and one-half feet apart and about three feet apart in the rows and were cultivated each week with a Planet Jr. Cultivator and hoed twice, till the plants covered the ground.

In September it was very wet and the latter part of the month the heads began to burst. We tried the plan of partly lifting the cabbage to stop its bursting, experimenting thus on six rows, but it had one of two effects, either to stop all growth, thus causing the cabbage to wilt or rot, or to cause new roots to grow, when it was sure to burst, so we gave it up and went to making kraut, for which we found a ready sale at 10c per gallon and barrels or kegs returned. We made over five hundred gallons.

The rest of the crop was sold at five cents each by peddling it from house to house in our near-by city of Freeport.

Not over fifty plants but what made choice heads and these were in the shade of a tree which has since been removed. Varieties were Holland Ballhead and Corn Belt, seed procured of Mr. Henry Field of Shenandoah, Ia.

Size of field, one-third of an acre. Money realized, $106.60, besides feeding 10 spring shoats during September and October and saving 200 of the very best heads for my poultry which laid nearly 100 dozen eggs during the winter up to this time (February 25, 1905), which were sold at unusually high prices; and further, a season's supply of our family of seven persons. And last, but not least, the piece of ground is again fall plowed and ready for a hummer crop of onlons of not less (if season is favorable), than 800 bushels to the acre. I have raised onions at the rate of 840 bushels to the acre. Z. T. TURNER.

Eleroy, Ill.

Tomatoes Under Irrigation.

This is a dry, hot climate, and we grow under irrigation. We usually make hotbeds the latter part of February or early in March for early plants and plant later for late crops out of doors.

The ground should be plowed early and deep. Then set plants after all danger of frost is past and the ground is well warmed up. The tomato likes warm weather and there is little danger of plants getting too large, as they can be safely transplanted after the fruit has set on the vine.

We take a two-horse plow and throw the ground up in high ridges about five or six feet part, with deep furrows between, and plant out tomatoes in these furrows, watching for a damp, cloudy spell to set.

But lf it does not rain in time we turn the water down these furrows, thoroughly wetting them, and about 4 o'clock in the evening begin setting. If the plants are not too large we use transplanting or nursery dibber; if plants are very large, we use a spade, shoving it into the ground as deep as possible, then pushing it forward and insert the plant behind it and firm the ground down. Some times we turn the water down the row after it is set to thoroughly settle the earth around the roots of the plants. We usually hand hoe the rows about twice and cultivate the ridges with a five-tooth cultivator.

Water often enough to keep plants growing thriftily until blossoming time, after which they never want to get dry; if they do the blossoms will fall and no fruit set. As soon as plants are large enough to shade the ground we quit cultivation and depend entirely on water.

The sides of the ditch serve to help hold plants up and makes less stooping to gather the fruit.

We have never kept any record of yields, but it is safe to say that our 1904 crop yielded 200 to 300 bushels per acre.

We generally try two or three new varieties each year; some times try a variety where highly recommended two or three years. But we always plant Livingston Beauty for main crop, and have never been disappointed in it. Sometimes Dwarf Champion does nearly as well, and if I did not have plenty of water would make it the main variety; but it does not continue to bear as late as Beauty, which bears heavily of large, smooth, solid tomatoes of just the right color until frost kills the vines.

We had about fifty bushels of fine fruit on the vines last fall when frost came. We plant entirely for local market, and usually get as good prices late as through the summer, usually about $1 per bushel.

H. H. CUMMINS.

Bernardi, Okla.

Celery Plants to Sell for Profit.

I had a little plat in our family garden that we did not need, so I decided to raise celery plants and sell them to our neighbors for their main crop planting. I sowed three different kinds—White Plume, Self-Blanching and Pink Plume. The plat was 13x30 feet. My neighbors thought I had enough celery plants to supply the whole state, and so I did. I prepared the soil and sowed the seed, and to my surprise in ten days many green celery sprouts appeared, with thousands and thousands of weeds. But the free use of the Yoder's weeders soon had the weeds destroyed and celery plants growing fine. To keep them growing, I put the hydrant at our pump and watered them every evening, and soon this plat was a sight to see, with three distinct varieties.

This was my way to advertise my celery plants: I took everybody to see the plot of celery and soon this was the talk of the town. "Did you see Yoder's celery plat? Aren't they fine?" I began taking orders at 25 cents per 100 and to my surprise when the season was over I counted my cash card and found it to contain over $18, with more plants left than I sold. To do this you must keep weeds down. A good plan is to use Yoder's weeders freely. They are death on weeds.

LEVI D. YODER.

Dublin, Pa.

Two Crops of Irish Potatoes.

The most profitable garden crop I ever raised was of Irish potatoes. I raised two crops on the same piece of ground in the same season. On Saint Patrick's day, the 17th of March, 1903, I planted one bushel and a half of Early Ohio potatoes on tilled ground that was plowed and manured heavily the fall before.

By the 15th of June this crop was marketed, there being fifteen bushels, ranging in price from $1.25 to $1.90 per bushel.

On the 15th of June the ground was thoroughly plowed and harrowed and another bushel and a half of Early Ohio potatoes were planted on the same ground. This crop was kept well ridged, so as to retain the moisture, and by October 15 they were well matured. This crop amounted to thirteen bushels. The potatoes were smooth, large potatoes, large or larger than those of the first crop. The size and enormous yield of the second crop and even the possibility of raising a second crop was considered a marvel by home gardeners.

The potatoes were cut, allowing two eyes to the piece and were planted sixteen inches apart. The first crop was planted six inches deep fearing frost, while the second crop was planted shallow.

The above was the most profitable market crop I have ever raised and I have always found early potatoes to be the most profitable garden crop.

Yours respectfully, J. H. GORE.

Carlinville, Ill.

Early Corn for Market.

Size of piece of land planted, 51 feet wide, 162 feet long, or 8,262 square feet. Soil, heavy clay, southern exposure, heavily manured with stable manure early in season; broke eight inches deep about April 10th; planted about April 15th; rows three feet apart, hills two and a half feet apart, four stalks left to each hill; variety of corn, Adams extra early.

Cost of crop:

Spreading manure	$ .30
Breaking and harrowing	.50
Marking ground and seed	.50
Cultivating four times	1.00
Hoeing and thinning	1.15
Marketing, etc.	2.00
Total	$5.45

Backward season, late maturing.

First sale, July 20th, 25 dozen, at 17½c	$ 4.35
Second sale, July 21, 30 dozen, at 17½c	5.25
Third sale, July 23, 25 dozen, at 15c	3.75
Fourth sale, July 27, 12 dozen, at 15c	1.80
Fifth sale, July 30, 10 dozen, at 10c	1.00
Total sales	$16.15
Cost	5.45
Net	$10.70

As you will see, this gives a fair price for all labor done and a net profit besides, fodder not included.

Hannibal, Mo. J. S. SMITH.

(What did you do with the land after corn was harvested?—Ed.)

Notes.

I would not be without The Fruit-Grower if I had to pay two or three times its price.—W. L. Yeates. Rich Hill, Mo.

A dull hoe is enough to convince one that it does not pay to have a garden. Keep a good file and sharpen it often.

The Minnesota Experiment Station has grown about 2,000 seedling potatoes, but has found only three which have been considered even worthy of testing. This shows the uncertainty of seedling production.

In growing seedling potatoes it is usually the case that the tubers do not attain to their normal size until the second year, although Luther Burbank says that the Burbank potato was full size from seed the first crop.

Plant some sweet corn early. If it comes, you will have early roasting ears; if it fails, you are out nothing but the seed, which is comparatively cheap, in small quantities, for garden use. Likewise, set out some tomato plants early. They can be protected from frosts very easily, and a dozen early plants will hasten the tomato season by several weeks.

I WILL SEND MY BOOK FREE

It Tells How All Eye Diseases Are Cured in Patient's Own Home Without Knife or Pain.

CATARACTS and all other eye diseases which cause blindness are caused by poor circulation of blood in the eye, the result, usually, of eye strain, some time in the near, or maybe remote past.

The eye has been overtaxed in some way at some time.

Did you ever consider the intricate mechanism of this delicate organ, with its numerous muscles, nerves and small arteries and veins?

If so, you must realize how easily its usefulness may become impaired.

You will also realize the folly of attempting to restore its usefulness by applying a knife to any of the delicate, intricate parts.

THINK of the pain, suffering, blindness, and even death, that has been caused by the use of the knife on the eye.

I discovered several years ago a method of restoring the natural circulation of blood to the eyes, which is so simple that a child can apply it.

By this simple, mild and harmless treatment I have restored sight to thousands in all parts of the world.

When this treatment is applied it immediately removes all strain on the nerves and muscles of the eye, equalizing the circulation, thereby assisting nature in restoring the eye to its normal functions.

Acting along the same lines, my treatment cures Optic Nerve Paralysis, Granulated Lids, and all other eye diseases.

By its use the eyes are strengthened, brightened and beautified.

I WANT every one who has any form of Eye Trouble to have my book. A postal card will get it free of charge.

It illustrates and describes a majority of Eye Diseases and gives valuable advice on the care of the eyes.

Tells how to diet, bathe, exercise, etc.

It tells all about the Oneal Dissolvent Method and what I have been able to do in the most serious, chronic eye troubles.

It tells how you can cure yourself in your own home easily and at small expense.

I WILL also diagnose your case, and advise you free of charge.

I am interested in every case of eye disease.

I often receive letters from people who have been cured by following my advice and instructions given in my book, which did not cost them one penny.

If I can cure you without expense I will gladly do so.

My treatment is harmless and painless; my patients treat themselves in their own homes.

ALL Eye Diseases are dangerous. No matter how slight or insignificant your eye trouble may seem.

It may result in blindness unless treated now.

Don't neglect your eyes a moment if they are bothering you in the least.

Consult a competent oculist **at once.**

Do not be like thousands of others who have failed to heed the warning till too late.

I have restored sight to thousands of people in all parts of the world who sought my aid as a last resort.

Many of them had been given up as hopelessly "incurable" by others, yet I cured them.

I can do as much for you.

The publishers of this paper will vouch for my reliability.

I HAVE RESTORED SIGHT TO THOUSANDS OF PEOPLE ALL OVER THE WORLD. HERE ARE JUST A FEW. READ WHAT THEY SAY AND THEN WRITE TO THEM. I CAN CURE YOU AS EASILY AS I DID THEM.

Dear Doctor Oneal:—I have been using your treatment for the last six months for Congestion of the Optic Nerves and Muscular Weakness. My eyes were very bad; I began to be afraid that I should lose my sight, but your course of treatment prevented that.

My eyes are well and I feel grateful to you and for your kindness. If this letter will be the means of helping any one to obtain good eyes you are at liberty to use it.

Gratefully yours,
MRS. F. D. MARTIN,
Box 44, Grasmere, N. H., Oct. 17, 1904

My eyes were so bad, everything I would look at was double and could not see to read, sew or write. Now I can see to do all of this with ease. For the last three years my eyes have been growing dark and painful with Cataract and Congestion, but now they are well and I cannot express myself highly enough in your favor. I am now **eighty-three years old** and my eyes are stronger, can bear more light than when I was younger. They were always weak and tender and I owe this change all to your Dissolvent Treatment. Very sincerely yours, MRS. L. D. SIMON,
Box 51, Bloomdale, Ohio, Oct. 13, 1904

Very fortunately for me a few months ago a friend sent me one of your books on Eye Diseases. I was suffering with Cataracts on both eyes. I could not read or sew, and I expected to lose my sight entirely. I wrote to you and after taking treatment about three months, I am cured. I can read and sew with ease. I can truly say that your treatment is certainly wonderful. I cannot speak too highly for what you have done for me. Yours very truly.
MRS. EMMA J. TOZER,
Cottonwood, Cal., Oct. 16, 1904.

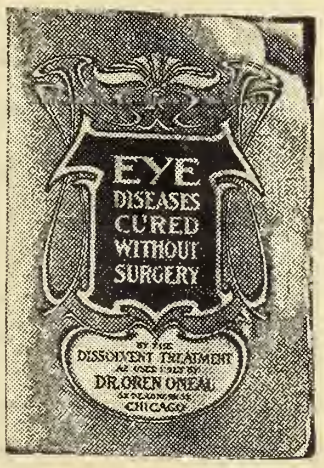
THE SYMPTOMS OF EYE DISEASES are not hard to discover when you look for them, but they are often passed unnoticed.

Some of the most serious symptoms are as follows:

Dimness of vision.
See spots or specks dance before your eyes.
The atmosphere seems smoky and foggy.
Seeing better some days than others.
Seeing sideways better than straightforward.
Seeing better in the evening and early morning than at midday.
Seeing objects double or multiplied.
Seeing a halo or circle about a lamplight.
Pain in or about the eyes.
Constant or periodical headaches.
Drooping of the eyelids.
Watering when in the wind; itching.
Rubbing the eyes to make things come clear.

If you have any of these symptoms your eyes need attention.

Do not be like thousands of others who have neglected to heed the warning until too late.



A Postal Gets This Book

TO OUR READERS

We have investigated Dr. Oneal's methods and know that he has cured many people of serious eye diseases. We believe that he is not only a most competent oculist, but an honorable man as well, and advise any of our readers who have eye troubles to send for his Free Eye Book.

It is vitally important that you write at once. Delay may cause the loss of your sight. It won't cost anything to get my book and advice; it may mean unbounded happiness to you. Address

Eyes Straightened Two Years Ago.

My eyes are straightened all right and I am very thankful to you for it. I never expected be cured so perfectly as you did it.

The reason I waited so long to write is that I wanted to see if the eyes would go back to the old shape, but they have not, so I am well satisfied and give you my testimonial.

Yours truly,
MISS EMELIA ANDERSON,
6149 Halsted St., Chicago, Ill., Dec 12, 1904.

Dear Doctor Oneal:—I wish to thank you for what you have done for my eyes. I suffered for years with Granulated Eye Lids and Pannus, and nothing seemed to do me any good until I tried your treatment.

After a short course of your home treatment I can truthfully say that my eyes are cured. I feel under lasting obligation to you. Yours truly,
MRS. M. J. McMILLAN,
Jefferson, S. C., Dec. 7, 1901.

Cataracts Cured in Three Months.

Dear Doctor Oneal:—For months I have been groping about in semi-darkness, stumbling over everything in my pathway. I suffered untold agony from headaches until life became a burden. An oculist pronounced my trouble cataracts, which would not be ready for removal for 12 months. Through the persuasion of wife and friends I concluded to try your treatment, and I thank God I did. You have certainly done for me all you claimed. After the first week I began to feel better. My improvement went steadily on, and within three months I was cured. Yours very truly, H. W. HERBERT,
Brinson, Ga., Sept. 29, 1904.

DR. OREN ONEAL, Suit 926, 52 Dearborn Street, CHICAGO

Cantaloupes, Celery and Irish Potatoes.

The above are the three best paying crops in market gardening in the Ohio valley.

Soils and manner of preparing—Deep sandy loam, limestone gravel subsoil; very rich to begin with. Broke ground in December, worked over with disc harrow in March.

Potatoes.—Laid off furrows thirty inches apart with turning plow; planted potatoes (cut in quarters lengthwise) ten inches apart in row, covered one inch with dirt; then scattered tobacco stalks thickly in furrows and covered with turning plow from each side of row. When first weeds came up, harrowed with drag harrow. This cut down ridges and made ground level. Harrowed twice more, once when potatoes were coming up and once when they were about four inches high. Plowed once with Planet Jr. five-tooth cultivator. Pulled out large weeds in rows. Variety, Six Weeks (a seedling of the Early Rose); vine, stiff and upright grower; quality, the best; yield, 400 bushels per acre.

Cantaloupes.—Broke ground same time as for potatoes; worked it several times with disc harrow and cultivator before planting; May 1st laid off rows eight feet apart, made hills six feet apart in the row; planted 15 or 20 seeds in each hill; the hills were broad and flat; cultivated every six or seven days until vines were too long to get through without tearing them loose from the ground; used tobacco dust to keep off insects, it was a good fertilizer as well; when plants were putting forth rough leaves I thinned to five in a hill; when vines were a foot long thinned to three plants to a hill. Varieties, Grand Rapids and Jenny Lind. The Grand Rapids yielded about eight to the hill, the Jenny Lind about twelve per hill. Average price per acre nearly $400. Large ones sold for as much as $3 per dozen, small ones as low at 15 cents per dozen.

Celery.—Same kind of soil as above, and worked the same until last of March, when I sowed about two bushels of oats to the acre, for green manure; the oats were about eight inches tall the first of May. I spread on the oats about fifty loads of composted stable manure per acre. After a light shower I turned oats and manure under and they soon rotted. I did not work the soil any for about fifteen days, then once a week until June 20th, when I laid off furrows four feet apart with turning plow. I scattered in these furrows commercial fertilizer at the rate of 1,000 pounds per acre, and mixed this with soil by running a cultivator through several times. This left a broad, shallow trench, and in this I set my plants by a line, plants six inches apart in the row. Each time I worked it I would fill up the trench a little. When ready to handle the soil was nearly level. I cultivated and handled in ordinary way. On October 1st I took up every other row and put in a trench just deep enough to cover about two-thirds of the stalk. By this I set up boards and covered over with plank and corn fodder. The earthed-up rows left in the ground; the celery in trench was blanched first. That in the ground was ready for Thanksgiving. Many stalks were two feet tall after they were trimmed and weighed four pounds. I lost some by red spider. Yield at the rate of 1,500 dozen stalks per acre; sold at 40 cents per dozen, or nearly $600 per acre. Variety, Winter Queen.

WESLEY GRIFFIN.

Warsaw, Ky.

Big Crops of Onions.

Clean ground is the main thing to raise a good crop of onions. The previous year I put on a good coat of well rotted manure and plant the ground in potatoes. I let no weeds go to seed. Dig potatoes early and sow the ground in rye, and let it grow till late in the fall. I get a good supply of hen manure during the summer, and mix it with equal parts barn manure, and heat it well so as to kill all weed seed and rot the manure. This I scatter on top of the rye, and then turn rye and manure under deep, so as to turn up grub worms, cut worms and wire worms, and let them freeze, which will kill them.

Then through the winter I clean out my hen house every month and put the manure in boxes or barrels, and save all of my ashes. About the 1st of March I haul out a load of barn manure, put a layer of barn manure, and one of hen manure, and so on, till I have it in one big pile; put on some water if necessary to start it to heat, turn it every week or ten days, or about three times, so it will be well rotted.

When the ground is in good condition, and ready to plant, I haul out my manure and ashes, spread them on about two inches thick and turn it under again, and then I harrow and drag and form a good seed bed.

I use a Matthew Universal drill, and drill rows fourteen inches apart, and one-half inch deep. When they get up two inches high, I put the scraper on my plow, and plow them shallow, and not too close, and repeat every seven to ten days till they get a foot high, and the plow breaks them down too much. After the second plowing I weed them out. I get right down on my hands and knees and use a Lang Weeder. The second weeding thin them out to stand two or three inches apart.

Some people say they have no luck with seed onions. They mean they don't want to get down on their hands and knees and take the weeds out. After thinning I consider the onions laid by.

O. B. WILLIAMS.

Tuscola, Ill.

How to Grow Onions.

The onion has great possibilities for the gardener. When he knows how to handle it, there is more in it than in any other crop. Everybody uses onions; they are always in demand, and generally bring remunerative prices.

Perennial or winter onions can be put out either in the spring or autumn. They grow from sets, are perfectly hardy, and never need any winter protection. When a bed is once established it will continue for years. They are very prolific, propagating themselves by dividing up at the root and growing sets on top of the stalks. Some cultivation is necessary through the season to keep the weeds down.

This is a very profitable crop to grow where there is ready sale for green onions.

Potato onions are grown entirely from sets, which can be planted either in fall or early in the spring. When planted in the autumn they should have some winter protection, like old straw or coarse manure, for they are not perfectly hardy. They are the mildest of all onions, and are not sent to market very much on account of their poor keeping qualities.

A great many onion sets are grown from seed; these are the very best. Plant medium early very thickly in drills ten inches apart, and keep free from weeds through the season. Pull them a little green, spread out in an airy loft to cure stems and all. Or they can be grown in beds if the ground is very rich, covered with sand to keep the weeds down. Pat the earth down a little with the back of a spade, sow the seed thickly broadcast, then cover with three-quarters of an inch of sand or sawdust. This method does away with weeding, which is a big expense. About Christmas, or before it gets very cold, put the sets away in thick barrels, cover good until spring, always keep dry.

How to Grow a Crop from Seed—An onion grown from seed will keep better than one grown from any kind of a set. It is only the best keepers that are grown for commerce, such as Red Wethersfield, Red Globe, Danvers, etc. Prizetaker is a fine, mild onion, but mostly grown for home market.

With Globe onions it is possible to grow a thousand bushels to the acre; but this kind of a crop is not realized by every grower. The ground must be brought up to the very highest state of fertility, and it will take two or three years to do this. If barnyard manure is to be had there is nothing better. Commercial fertilizers have the advantage that they contain no weed seed, and it is just as well to use both together.

If the ground is good, 300 bushels may be realized the first season, 500 bushels the second season, and so on. Manure is the most important part of the business, and should go on every year.

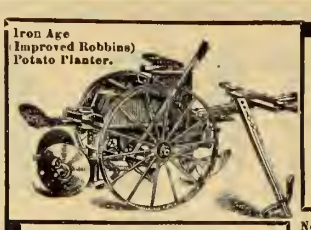
Planting the Crop.—The onion grows best in the cool, moist weather of spring, so get it out as early as the ground will do to plow. Harrow the ground first, finish off with hand rake, make it smooth and fine as possible. Plant with a seed drill, it makes a straighter and evener row than hand sowing. Such a row can be worked closer with a hoe, leaving less weeding to be done by hand. Eight to ten inches is distance enough between the rows where the land is rich. It is easier to hoe a row eight inches wide than one sixteen inches wide. Having the rows close is the way to get a crop. Three hoeings and three weedings most always lay the crop by. The first hoeing is rather monotonous and should be done with a hand hoe, after this use wheel hoe.

Pull the onions a little green, put them away in an airy shed on shelves, stems and all; stir about twice a week with the hands, so as not to bruise them. When winter comes on, store same as onion sets. Or if quantity is large, make a bin with lumber, line it with straw, cover good and leave till spring. Onions will stand some freezing, but not zero weather.

In this latitude onions come off in July, and may be followed with cabbage, celery, turnips, spinach, kale, or anything that will be out of the way of next crop of onions.

WM. GOODRICH.

Princeton, Ind.



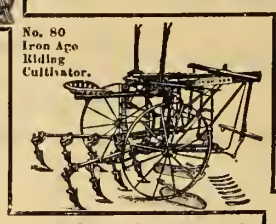
Plant, Cultivate and Spray

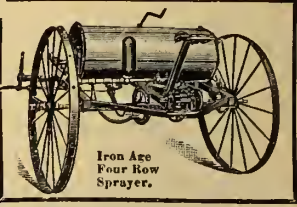
Here are three good implements, all essential to successful potato culture. The Planter drops 100 per cent. of seed correctly; no doubles, no misses, no bruised seed. The Iron Age Riding Cultivator is adapted to the best care of the growing crop at all times. The Sprayer will prevent blight and the ravages of the dread potato beetle. Sprayer also has an orchard attachment.

IRON AGE Implements

are made to stand the wear and tear of hard service, and may be used for other purposes than those here designated. Wherever these implements are used better work and more of it is possible. They save time, labor and money. "Iron Age," our new *free* book, describes in detail all Iron Age Implements, including Wheel Hoes, Beet Drills, Drill Seeders, Horse Hoes, etc. Send for the book without delay, as it contains valuable information.

BATEMAN MFG CO., Box 506, Grenloch, N. J.

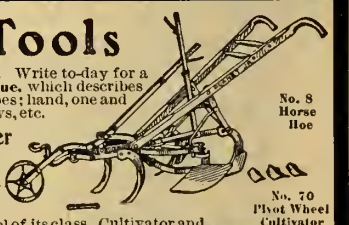




Planet Jr. Tools

will save half your time, expense and fatigue. Write to-day for a free copy of the **1905 Planet Jr. Catalogue**, which describes our entire line, including seeders; wheel hoes; hand, one and two-horse cultivators; harrows, etc.

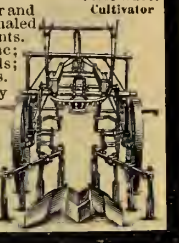
No. 4 Combined Seeder sows in hills or drills, cultivates, plows, marks and performs many other duties. Almost instantly adjusted. Easy to operate.



No. 12 Double Wheel Hoe is the most widely-chosen tool of its class. Cultivator and hoe attachments, easily and quickly adjusted. Unequaled for weeding, furrowing, ridging, etc., between or astride rows, to or from plants.

No. 8 Horse Hoe is the favorite walking horse-cultivator. Stiff steel frame; interchangeable, self-polishing hollow steel standards; reversible hoes; patent depth-regulators, etc. Opens from 9 to 25 inches.

No. 70 Pivot Wheel Cultivator stands unexcelled. Strongly and durably built, instantly adjustable at every point; can't get out of order. Almost unlimited in its variety of duties. Makes field work a pleasure.



Don't forget the Catalogue.

S. L. ALLEN & CO.,
Box 711 E, Philadelphia, Pa.

ACME Pulverizing Harrow

Clod Crusher and Leveler.

SENT ON TRIAL.

. To be returned at my expense if not satisfactory.

SIZES
3 to 13½ feet

Agents Wanted.

The best pulverizer—cheapest **Riding Harrow** on earth. The **Acme** crushes, cuts, pulverizes, turns and levels all soils for all purposes. Made entirely of cast steel and wrought iron—**indestructible.** Catalog and booklet, **"An Ideal Harrow"** by Henry Stewart sent free.

I deliver f. o. b. at New York, Chicago, Columbus, Louisville, Kansas City, Minneapolis, San Francisco, Portland, etc.

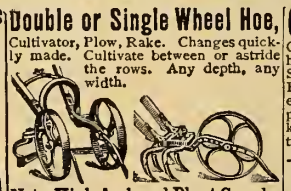
DUANE H. NASH, Sole Manufacturer, Millington, New Jersey.

BRANCH HOUSES: 110 W. Washington St., CHICAGO. 240-244 7th Ave. S., MINNEAPOLIS. 1316 W. 8th St., KANSAS CITY, MO. 216 10th St., LOUISVILLE, KY. Cor. Water and W. Gay Sts., COLUMBUS, OHIO.
PLEASE MENTION THIS PAPER.

MATTHEW'S "NEW UNIVERSAL" GARDEN TOOLS.

6 STYLES SEEDERS Models of Accuracy. Opens furrow, drops in plain sight, covers, marks.

Double or Single Wheel Hoe, Cultivator, Plow, Rake. Changes quickly made. Cultivate between or astride the rows. Any depth, any width.



Note High Arch and Plant Guards Bent Oak Handles on all Tools.

6 Tools in 1. Combined seeder, marker, hoe, rake, plow, cultivator. Single or double wheel. Every adjustment easily made. For planting and all kinds of cultivation.

Send for FREE BOOKLET of valuable information for planting and cultivating the garden and full description of these implements.

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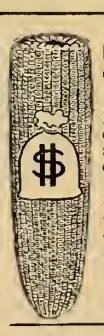

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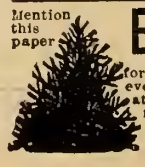

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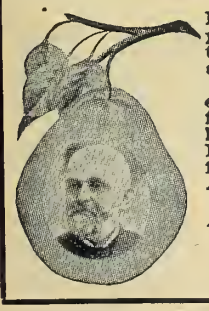

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Mulching Tomatoes.

A Fruit-Grower reader wants to know if it is not better to mulch tomato plants than to give them clean cultivation. He thinks the mulch will not only conserve moisture, but will keep the fruit clean. The tomato was one of the vegetables under test in the experiments conducted by Prof. R. A. Emerson of the Nebraska Experiment Station several years ago. And the results were in favor of mulching the tomato plants, but the mulch should not be applied until the plants have become well established.

In the test Dwarf Champion was grown in three seasons—1900-02—and Stone in 1901 and 1902. The plants were set May 24 and the mulch spread June 11, after the plants had been cultivated three times. This was the program in 1900 and 1902, and in 1901 the mulch was applied a few days after the plants were set.

In 1900 mulched plants of Dwarf Champion yielded 5 pounds of fruit per plant, against 4 pounds for the cultivated plants. In 1901 some of the plants under each system were irrigated and some not; the irrigated plants which were mulched bore 4.7 pounds per plant, against 3.8 pounds for the cultivated plants; the mulched plants which were not irrigated bore 3.2 pounds per plant, against the same quantity for the cultivated. In 1902 plants under each system were set on high land and on low land, the results in each case being in favor of the mulched plants.

In 1901 plants of Stone tomato were irrigated and some were not, both under the mulch plan and that of clean cultivation. The irrigated plants which were mulched bore 8.7 pounds of fruit per plant, against 8.5 pounds per plant for the cultivated. The plants which were not irrigated bore 3.3 pounds per plant under mulch, against 6.1 pounds per plant under cultivation. In 1902 the mulched plants on high ground bore 3.6 pounds per plant, against 1.6 pounds for the cultivated; on low ground the mulched plants bore 2.0 pounds per plant, against .9 for the cultivated plants.

In regard to this test, the experiment station reports: "In our rich soils tomato plants, particularly the large-growing sorts, when provided with an abundant supply of moisture, are apt to make vigorous vine growth at the expense of fruit production. Probably by keeping the soil too cool and wet and by preventing proper aeration in seasons of heavy rainfall, mulches decrease vigor of vine growth and thereby increase fruitfulness. In 1902 the cultivated plants were decidedly ahead of the mulched ones in vigor of growth, the mulched plants being smaller and their foliage much lighter in color than the cultivated ones.

"In 1901 the mulched tomatoes on irrigated land yielded more than the cultivated ones, the difference being considerable in the case of the Dwarf Champion and slight in case of Stone. On unirrigated land, the Dwarf Champion yielded the same on both plats, while the Stone yielded almost twice as much per plant by cultivation as by mulching. This season, unlike the year preceding and the one following it, was very dry. The results, however, do not necessarily mean that mulching is unsatisfactory in a dry season. They are rather to be explained by the fact that the mulch was spread too soon after the plants were set out. Tomato plants are especially sensitive to cold. Frosts are more apt to occur on mulched than on cultivated ground, and are more severe by from three to five degrees. While in this case the mulched tomatoes were not actually frosted, they must nevertheless have been subjected to considerably lower temperatures at night than the cultivated ones. The early growth of tomatoes was plainly retarded by the mulch. Some of the plants afterward recovered, though some of them died. The mulched plants of the early and hardy variety, Dwarf Champion, suffered comparatively little at first and finally overtook the cultivated plants. With the later and possibly more tender variety, Stone, only a few plants survived and they were never able to overcome their early handicap. In fact, the plants in all plats got such a late start in 1991 that few fruits ripened, the figures for 1901 in the table representing largely the yield of green fruit.

"Mulched tomatoes are usually less subject to rot than cultivated ones owing, probably to their being free from dirt in rainy weather. The mulched tomatoes are also, as a rule, larger and more regular in shape. On the other hand, tomatoes, like all very tender plants, are injured worse by early fall frosts when mulched than when cultivated.

"In general, then, mulching has given good results with tomatoes, both in yield and quality of fruit. Care must be exercised not to mulch such tender vegetables as tomatoes until they have become well established."

Pithiness in Celery.

Everyone who grows or eats celery has noticed the increasing pithiness of the stalks. This is true to such an extent that the writers in the funny papers now claim it is like buying a lottery ticket to buy either celery or canteloupes, for the one is likely to be pithy and the other of poor quality.

The Maryland Experiment Station has conducted some experiments which have demonstrated that the pithiness is due to the seed used. In a test of American-grown and French-grown seed, it was found that 40 per cent of the plants produced from the American-grown seed were pithy, while scarcely a single stalk from the French seed was in this condition. The conclusions of the station, after this test, relative to this matter are, in part, as follows:

"Taking the various points into consideration, the experiments plainly show the superiority of French-grown seed over American-grown. That the difference is not due to the character of the soil or to climatic conditions is apparent from the fact that the celery stalks from the French seed were entirely different, though they were grown under the same conditions of soil and climate, and were given the same kind of care. The difference must have come from the seed. We can not accept as an accomplished fact that the highest quality of celery seed cannot be grown in America. But we can believe that the seed is not carefully selected and grown. Pithy stalks should never be used for seed, and seed plantations should be carefully watched and rogued whenever a strange plant appears. That much of the European-grown seed is superior to the American-grown seed cannot be disputed. The superiority is due altogether to their careful selection of seed stock and the subsequent attention paid to the plant to keep it up to the set standard. There can be no doubt that if the American celery seed growers were as careful in their work as the French growers are their seed would in all probability be as good. Cheap seed is dear at any price. This is especially true when the profit of a whole season's work is dependent upon it."

To Preserve Seeds.

J. P. Dickson, Franklin, Iowa, sends the following directions for preserving seeds until planting time. We presume that such seeds as apple, berry seeds, etc., are meant, or any of the seeds which must not be allowed to dry out:

"Put each variety in an envelope, end open; label across the end, and pack in a small tin bucket, with label sticking out above the top, with sand damp enough to dampen well the paper beneath the sand. Let the bucket stand in a very cold spot until it freezes; then remove to cave, ice house, or north shed, where it will thaw only when a spring thaw comes. If seed look mouldy, well and good. Plant with stick one and a half inches deep in crumbly mud in March, or even January and February, if there is a thaw."

To Combat Striped Melon Beetles.

For striped beetles on melons and green worms on cabbage, I have found nothing better than land plaster and coal oil. Take a peck of plaster and a pint of oil; mix well, pass through a sieve, and apply to the plants with the hands.

A. T. GOLDSBOROUGH.

Washington, D. C.

I congratulate you upon the appearance of your February number.—R. H. Jesse, President University of Missouri.

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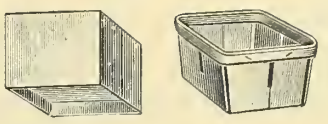

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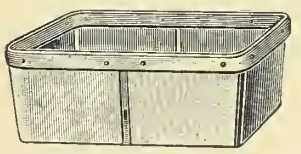

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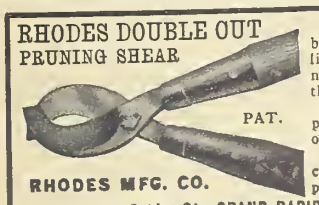

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Growing Nutmeg Melons

In a journal of so wide a circulation as The Frult-Grower it is necessary to define what we mean by nutmeg culture. In some sections they are called cantaloupes, muskmelons, etc. When we say "nutmeg" we do not mean the commercial spice nutmeg, as a certain reporter once came to the conclusion. It appears that formerly muskmelons was the famlly name. The large oval-shaped, yellow-fleshed were called cantaloupes, and the smaller ones, of greenish color, were called nutmegs. At present no attention, however, is paid to this divlsion. In our markets all are called nutmegs. This fruit, or vegetable (which is it?) is now very extensively cultivated. It is a profitable crop for a home market. Some varieties, as the Rocky Ford, endure shippling a considerable distance. Tip Top and Hackensack sometimes arrive in our markets in a very poor condition. Do not launch out heavily before you are sure of a good market.

Soil.—The nutmeg prefers a deep, warm, well-drained, sandy loam, resting on a porous sub-soil. The soil need not necessarily be very rich, but it must be in a good mechanical condition, so that the long roots can freely penetrate. Bear in mind that the roots may be longer than the vines.

Rotation.—What crop is best to precede the nutmeg? Some gardeners have a choice location and raise nutmegs annually on this favorite spot. Some, who are thus located. sow rye in the fall and plow it under in the spring. If this is properly done it maintains the life of the soil. Plowing under rye is a trade. The furrow slice must be completely .inverted. Immediately after plowing the top must be thoroughly pulverized. We have plowed under rye five feet tall for nutmegs, with good results. If crimson clover would be a sure crop we would sow our intended nutmeg patch to it in August. Only once did we have a good stand of crimson clover. The land next year produced a fine and heavy crop of nutmegs. A few years' growth of the common red clover is an ideal preparation of the soil for nutmegs. We must have a soil in which a good seed bed can be prepared.

Planting.—The nutmeg seed requires a high temperature to germinate. Hence plantlng should be delayed untll the soil is moderately warm. If seed comes up in five days plants are vigorous. If delayed more than ten days plants are weakly.

Plant five feet by five feet, if cultivation both ways can be given; if not, six feet by six feet. Thoroughly prepare the soil, then open a good-sized furrow. Have some good, well rotted stable manure, and place about half a bushel in the furrow where the intended hill is to be. Take a cultivator of the smallest size shovel and narrow to fit the furrow. Make two trips in each furrow the same day the manure is deposited. Continue this at intervals of a few days until planting time.

Prepare a small hill about nine inches in diameter from the manure and soil mixed in the furrow. Pat the hill a little, on which plant the seed. Ten to twenty-five seeds in a hill are none too many in a district where the striped beetle exists. Do not scatter the seeds all over the hill. Cover them with soil and manure mixture which is in the furrow. This soil-manure mixture does not bake readily after a heavy rain. Frequently the soil bakes so hard that the nutmegs cannot break the crust. As soon as the plants are up commence cultivation and carefully hoe the hills.

The striped beetles generally make their appearance about this time of the year. They are especially numerous during warm, sultry weather. In twenty-four hours they completely riddle the plants. What can we do to protect our plants? Various devices of boxes are often recommended to place over the plants in order to exclude the beetle. It is questionable whether we can place any insecticide on the plants that will destroy the beetle. Hence the only remedy we have is a repellant. Dust the plants daily during beetle time with road dust. If this material cannot be secured air-slaked lime and land plaster will answer. We cannot use these latter materials as freely as road dust on account of burning the plants.

After the plants have strong, rough leaves thinning should commence. If we were morally sure that nothing would happen to our vines, two strong plants in a hill would be sufficient. Thin out to four plants. Moderately level cultivation should be given once a week. Keep on cultivating as long as there is space for horse and cultivator without disturbing the vines too much. Some prefer to lay the vines around, when four or five fee' long, and give a thorough cultivation both ways. This is not necessary unless the ground is getting weedy or beaten too hard by a heavy rain. A dry season brings the best nutmegs, provided the cultivation is such as to conserve moisture.

Starting Plants Under Glass.

The method described above has at least four drawbacks—cold, drouth, beetles and later nutmegs. Startlng plants under glass overcomes these obstacles, but the total yield generally is less than from those planted in the open ground. There are several methods adopted for starting plants under glass. Some use a four-inch pot. Others various boxes and old berry baskets. Perhaps the surest, especially for the novice, is to plant in sod. Make an ordinary hotbed—not too much manure—about four weeks before time for transplanting. Cut sod—blue grass sod preferable—about four inches square and three inches thick. Place them in the hotbed, with the sod part down. Excavate a small hole in the center of the block in which drop six seeds. Press the seed down. Carefully water, then cover the whole surface with about one inch of fine soil. As soon as the plants break the surface of the ground give plenty of ventilation. During warm days remove the sash altogether. This careful ventilation is absolutely necessary to prevent the plants from damping off. Water as occasion requires. Keep a lookout for the striped beetles; they sometimes make a raid on the plants in the hotbed. Commence heavy watering at least a day before transplanting. Avoid a windy day to remove the plants into the open field. Carefully handle the sod now containing the plants and plant them in the well prepared furrow previously mentioned. Watch the striped beetles; they sometimes cripple the transplanted nutmegs, especially if they wilt a little. Do not transplant earlier than you would sweet potatoes. Commence cultivating and hoeing as soon as possible. By starting plants as described we may get nutmegs two weeks earlier than by planting the seed in the open ground. Perhaps we may think the battle is won when we have thrifty vines three or four feet long, but we still have to encounter several enemies. The striped beetle has already been mentioned. Cutworms sometimes do considerable damage. Sometimes we can induce the cutworm to eat a mixture of bran

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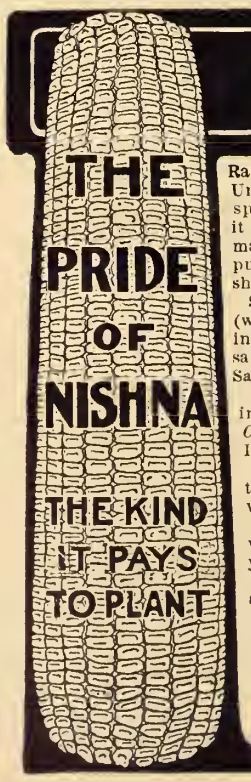

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Seed Corn. (Shelled or in the Ear.) Ratekin's Pride of Nishna (yellow) and Iowa Silver Mine (white) are two of the earliest, largest eared corns in existenee. They have been successfully grown in every state in the Union, and were planted by thousands of farmers in 1904. They will mature safely and soundly in 95 to 100 days. Every bushel guaranteed to be satisfaetory upon reeeipt of same. Samples free. Priees, $1.35 per bu; 10 bu. or over, $1.25. Bags free.

SEED OATS. Ratekin's New Sensation, the earliest of all oats, ripens before killed or injured by rust or blight; yields 60 to 90 bushels per aere. Next to our New Sensation are our *Early Champion*, whieh have been grown so sueeessfully, and are so highly recommended by the Iowa Experimental Station. 90e per bu; 10 bu. or over, 75e. Samples free.

SPELTZ OR EMMER. The greatest cereal food on earth; has yielded four tons of straw bay to the aere and eighty bushels of grain; is as rich as eorn, oats, wheat ground together; does well everywhere. 80e per bu; 10 bu. or over, 70c.

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and paris green, if placed around the plants. Frequently vines five or six feet long, with almost matured nutmegs, will suddenly die. A worm in the main root, close to the crown of the plant, is often the cause. There seem to be several species of worms that infest the roots. If we would know when and by what moth or butterfly the eggs are deposited we might intelligently fight these root-worms.

The most destructive insects, however, are aphids, or plant lice. They are on the under side of the leaves sucking the plant juice. These lice multiply with such wonderful rapidity that if a few females—and they are all of this sex in the spring—are on an acre there soon will be a sufficient number to ruin the whole crop. Since this louse is a sucking insect it has either to be killed by fumigation or direct contact. It is questionable whether we have any practical economical method of destruction for the commercial nutmeg grower.

Then there are several fungus diseases that frequently play havoc with our fine prospect for nutmegs. Perhaps just about when the first setting of nutmegs are about ripe this blight in a few days dries up all the leaves. The vine may remain green, but the breathing apparatus is destroyed and hence the nutmegs cannot ripen into good-flavored fruit. In our county we can often grow a real early crop before this blight appears. Spraying with Bordeaux mixture about once in ten days from the time they begin to vine is sometimes a preventive.

As to varieties we must plant what the consumers demand—green or yellow-flesh, large or small nutmegs. If we wish to ship by the barrel or car load the small nutmegs — Little Gems—are not profitable. The Tip-Top is a fine nutmeg for a close-by market; it is large size, yellow flesh. The Hackensack is a fine green-flesh nutmeg, but it is apt to crack at the blossom end. Rocky Ford, or Little Gems, are very popular.

Some may inquire about the probable yield per acre. We said they should be planted five by six feet. This gives us 1,700 hills per acre. Each hill should give us at least five good nutmegs. A good crop of nutmegs is profitable if we have a good home market. But, as stated before, sometimes the lice and blight take the whole crop. A. SHIRER.

Ohio, Lat. 39 1-2 degrees.

Cold Frames.

Generally speaking, cold frames are not used as much as they should be. They are very desirable and an almost necessary adjunct to the florist and market gardener, while the amateur will find these simple structures of great value. Coldframes are usually made from one or two-inch lumber, and the simplest forms are six feet wide and three feet and over in length.

They are always made with a slope to the south. By having the north side from 12 to 18 inches high and the south side from six to nine inches, a good slope can be had. The frames can be covered with either cloth or glass, the glass being the best and most common material used. The standard size of the sashes used for covering the frames is three by six feet.

The coldframes are useful for starting plants for early transplanting for hardening plants grown in hotbeds and for wintering over many of the hardy plants. Where the winters are as mild as they are in Southern New Mexico, they can be used very successfully for some of the hardy vegetables and flowers. At the Experiment Station, the results of growing lettuce, radishes and violets in coldframes during the winter have been very satisfactory. Two crops of the Grand Rapids lettuce can be raised during the winter without much trouble, while the violets do equally as well. As soon as freezing starts in the fall, the violet coldframe is covered with glass sash. From about the 20th of December to the 1st of March, the violets are in bloom. The management of the frames consists simply in keeping the plants well watered and ventilating them during the warmer days.

A modification of the common coldframe is the field coldframe, or forcing hill. They are simply small boxes with no bottom and with a glass cover, which are used for forcing vegetables in the field for the early market. This is a better method of getting early vegetables than to force the plants in the greenhouse or hotbed and then transplant them to the field. The style of coldframe used at the station the past season was 8x12x10 inches, made out of inch lumber. These were used in forcing tomatoes, cantaloupes and cucumbers, and the results were encouraging.

On March 5, 60 hills of tomatoes, four feet apart, were started in these coldframes. On March 25 forty hills of Rocky Ford cantaloupes and twenty of cucumbers were planted. The plants grew splendidly. The frames were raised as the tomato plants grew and dirt was filled in around them. By doing this, the plants were kept covered until May 18. On May 16 a number of the plants had blossoms and on the 30th a number of tomatoes slightly larger than a pea were found on the plants. The first ripe tomatoes were picked on the 30th of June, fully five weeks earlier than those from plants grown out in the field, not forced. The first cucumbers were gathered on June 16th, and on July 10 the first cantaloupes ripened. Juding from the results obtained, the planting might have been done earlier than it was. FABIAN GARCIA.

New Mexico Station.

He Saves $99.50.

It would cost me at least $100 to attend the meetings of our western horticultural societies, and yet I get the benefit of all their best papers and discussions, sitting here by a warm fire at home, reading the reports in The Fruit-Grower, which costs me only 50 cents a year. The net profit of The Fruit-Grower to me, therefore, is $99.50.

O. D. HOWE.

Table Rock, Neb.

The Fruit-Grower is the best fruit paper I ever read.—A. B. Cunningham, Tahlequah, Ind. Ter.

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BUILT "ON HONOR"

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Long Distance Collinge collar axles, quick shifters, Padded Patent Leather Dash, Rubber Padded Steps, Roller Rub Irons, Full Length Storm Apron, No 1 Best Quality Leather Quarter Top, all Wool Headlining, 16 ounce Green Broad cloth Cushion and Back, Spring Cushion and Panel Spring Back, Boot, Full Length Velvet Carpet, Arched or Dropped Axles, Choice of any width of Body, Either Three or Four Bow Top. Reinforced Shafts with Heel and Corner Braces.

We also manufacture a full line of Buggies of all styles, Driving Wagons, Runabouts, Phaetons, Stanhopes, Surreys, Carriages, Spring Wagons, Carts and Harness. **Our Split Hickory Catalogue for 1905** has 192 pages and is by far the handsomest we have ever issued. It explains fully our liberal terms of sale, quotes absolutely lowest wholesale prices and is elaborately illustrated. Sent free on request. Write us at once.

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MARVIN SMITH CO. CHICAGO. ILL.

An Irrigated Garden in Kansas.

For the gardening number: I thought it might interest some of your readers to hear how we manage a small irrigation plant in order have good, fresh vegetables and small fruit. Sometimes it gets too dry here for small frult or vegetables to do their best, so a few years ago I built a pond in my garden. The pond is in the middle of the garden and is twenty-five feet wide and 100 feet long, four feet deep—two feet above and two feet below the surface of the ground. The soil was taken from the inside of the pond to build the banks. The water is supplied by a windmill, which pumps the water into a tank, and when the tank is three-fourths full through a two-inch pipe laid under the ground and up over the bank of the pond, thus keeping fresh, cool water for the stock and filling the pond at the same time. I put a water grass, called "cat tail," around the pond to protect the banks from the waves washing the banks away; it grows out in the edge of the water, making a good retreat for the small fish against the attacks of the large ones. The government furnished me with a start of rock bass. I also have black bass and cat fish and can catch a mess of fish any time in ten to twenty minutes.

But my main idea in constructing them was to enable me to raise good strawberry plants. I find that if I have strong plants it is much easier to raise big red berries. I have the ground graded on both sides of the pond so I can run the water both ways from it. I have a plot of ground prepared and fertilized with bone-meal and sulphate of potash. I don't use nitrogen, except that contained in the straw or barnyard manure applied to the ground to keep up the supply of humus. Too much nitrogen makes too much plant growth and less fruit. I set the plants in rows four feet apart and when they need moisture I make a small ditch on both sides of the rows with a small plow and siphon the water over the bank of the pond through two-inch pipes and run the water in ditches until the ground is thoroughly soaked, then I take the siphon and move it along to the next row, until all is watered. Then as soon as the ground is dry enough to pulverize nicely, I cultivate thoroughly with a small-tooth cultivator to conserve the moisture as long as possible. I have never failed to get good strong plants in this way. I also water a small patch of fruiting plants and always have been repaid with larger crops of good-sized berries. And I also raise blackberries, raspberries and dewberries and it makes all vegetables very much better to have all the moisture they require at all times. It does not take much ground to raise all the vegetables a family can use. The vegetables are planted in long rows and the water is applied the same as to the berries. A pond of this size will furnish water enough to irrigate one-half to one acre, according to the rainfall. Here I have no trouble to keep up the supply of water with an eight-foot Sampson windmill and pump, with cylinder three by twelve inches. The well is fifty-three feet to the water. I also put up ice from the pond. The pond cost nothing but a little work. I will give the names of the varieties of berries that succeed best here for me: Warfield, August Luther and Excelsior for early; Aroma, Dornan and Marshal for main crop. I want to try the Senator Dunlap and Gandy this spring. I have had the Gandy and know it is good and the Dunlap is highly recommended. I want it to pollenize the Warfield and if it is as good as the Warfield it will be all right.

JUSTUS A. DAVIS.

Rome, Kan.

Potato Scab and How to Prevent It.

Scab of potatoes is caused by a fungous plant working in the surface of the potato, says a bulletin from the Minnesota station. The germs of it are very abundant and live for many years in the soil and also over winter on the potatoes. If these germs are fed to stock they undoubtedly grow in the manure, and the use of such manure may often be the cause of infection. Also they may be spread in the soil by natural drainage and land receiving the dralnage from infested fields may become infested with the disease without ever having had potatoes on it. Scabby seed potatoes when planted on new or old potato land will generally produce a scabby crop, but the amount of the disease will generally be much more on the old land than on the new.

Perfectly clean seed potatoes planted on land which is free from the scab fungus will always and in any season produce a crop of smooth, clean potatoes, no matter what may be the character of the soil; but apparently clean seed potatoes may have the germs of the scab fungus on their surface. This is often the case where they have been sorted out from a lot that is somewhat infected with scab. In this latter case, the tubers should at least be thoroughly washed in running water, to remove any germs that may be present, or, what is better yet, be treated with corrosive sublimate (mercuric bichloride) as recommended below.

Land infected by the germs of potato scab will produce a more or less scabby crop, no matter how clean and smooth the seed used.

Scabby potatoes should be dug as soon as mature, since the scab fungus continues to grow on the potatoes as long as they are in the ground.

Scabby potatoes may be safely used for seed, provided they are first treated in such a way as to destroy the germs of the scab that adhere to them. There are many methods of doing this, but the most practical now used are as follows:

Corrosive Sublimate Treatment.—Procure from a druggist two ounces of powdered corrosive sublimate (mercuris bichloride); put this into two gallons of hot water in a wooden or earthenware vessel and allow it to stand until dissolved. Place thirteen gallons of water in a clean barrel, pour in the solution of corrosive sublimate and allow it to stand two or three hours, with frequent stirrings, in order to have the solution uniform. Select potatoes as nearly free from scab as can be obtained; put the seed potatoes into bags, either before or after cutting them, and then dip them into the corrosive sublimate solution and allow them to stay in for an hour and a half. If seed potatoes are treated in this way and then planted on land free from scab, the resultant crop will seldom be seriously injured by scab. The expense of this treatment, including labor, should not exceed one dollar per acre, as the material may be used repeatedly. But the treated potatoes should never be fed to animals, as corrosive sublimate is a deadly poison.

Formaline Treatment.—This material should be mixed with water at the rate of eight ounces (one-half pint) of commercial formaline to fifteen gallons of water. The potatoes should be soaked two hours in it. If this method is used the seed should be planted within two or three days after treatment. This material gives equally as good results as corrosive sublimate. It is slightly more expensive, but the expense is light in any case. It has, however, great advantages over the latter in that it is not so dangerous, and being a liquid is easily diluted for use and may be placed in any kind of a receptacle. This material does not in any way injure the tubers or make them dangerously poisonous. One pound of formaline, costing not more than fifty cents, will make thirty gallons of the disinfecting solution, and is enough to treat fifty bushels of potatoes. If the solution stands a long time it will probably lose strength.

Exposing to Light.—If the tubers are exposed to the full sunlight for several weeks before planting the scab germs will be largely destroyed. It would be a good plan to turn such potatoes occasionally in order to expose them fully to the light.

I mulch my raspberries with one foot of straw and leave this on until the fruit is all picked. This mulch keeps grass and weeds down, and by the time the crop is picked the straw is rotten, and I work it into the soil with a plow. If there is a better way to handle a raspberry field than this, let us have it. Last season, from one-fourth of an acre, I picked and sold 200 gallons of Cumberland raspberries. How does that compare with the yields of those who cultivated the raspberry fields before picking time? I. N. STANFORD.

Shelbyville, Tenn.

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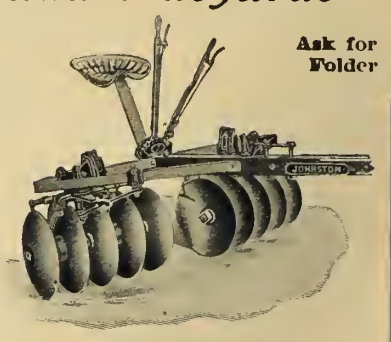

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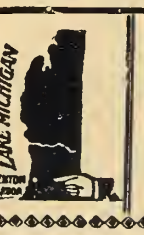

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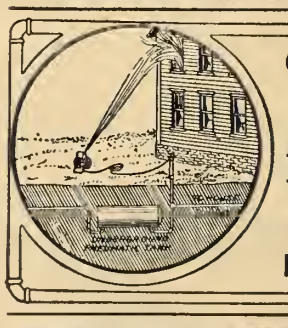

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Right Quality and Right Prices are the two most essential features with the buyer. **We have both,** and we will gladly demonstrate the fact upon reuqest. Every tree guaranteed as represented, and true to name. Reference: First National Bank of Bolivar.

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A large assortment of the finest quality of Fruit, Shade and Ornamental Trees, at very Low Prices. We make a Specialty of dealing direct with the farmers. Write for Price List.

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Best Nursery Stock

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Established 1869. Packing and Shipping facilities unexcelled. Agents wanted.

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WANTED---TWO MEN'S

names and addresses interested in Fruit-Growing. Our book, **Success and Failure in Orchard Growing, by a Practical Orchardist,** sent free to anyone sending same.

Messick T. F. Co., Quincy, Ill.

18,000 Apple Trees

The best and hardiest for the planter; also a complete line of nursery stock. All Northern-grown. Prices the lowest. Send for list and see that we can give you good trees and save you money.

AURORA NURSERIES, Aurora, Ill.

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Contains many bargains in fruit trees and garden seed and just the information that fruit-growers would appreciate. The title, "Chickasaw Trees Bear" carries with it much truth as well as success to the grower who plants our trees and seed. Terms to agents on application.

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Free from disease and in the most thrifty growing condition. Guaranteed true to name and variety. No grower can produce anything better. 40 different kinds. Also a few thousand Peach Trees, Elberta and other leaders. Positively no scale or other disease. 20 page catalogue free. Write today. It's sure to save you money.

J. W. JONES & SON, Allen, Md.

Apples in Colorado in 1904.

We, of the Grand Valley, Mesa Co., Colo., had a very large and an average clean crop of apples, that was mostly sold and shipped right after harvesting. The prices obtained were very much lower than the year before. There were plenty buyers around early in the season, but they were here apparently for no other purpose than to tell us that the crop in the East was so tremendously large and surprisingly fine that they did not want to buy any Colorado apples; didn't need them in fact.

They had it all arranged finely among themselves and when the growers were much alarmed and became anxious to sell, they suddenly bought and the whole crop went all over the United States in a hurry. I don't dare to say how many hundred of carloads went out of this neighborhood alone. The growers were failing over each other to sell and when the great bulk was sold the price went up.

In 1903 The Fruit-Grower kept us well posted about the crop situation and the doings of the fruit buyers association. In 1904 I did not find much about it. I might have overlooked it, but it seemed to me as if you had thrown us over and left us to our own resources.

We need your paper in so large a country as the United States, being a growers, and not a buyers organ, to help us protect ourselves against a fruit buyers' trust. We love to raise good fruit, but then we do not like to work mainly for the benefit of buyers and the railroads.

We had good success in fighting the codling moth. Spraying is done here so generally and persistently that the worm pest is pretty well kept down. What we commence to find out now is that some of our orchards are too large for one party to look after in order to have the best results. The large growers are considering the desirability of selling half or more of their places. It seems rather hard to sell half of one's fine orchard jus when they commence to be profitable, but I fear that we will have to do it all the same. The apple orchards of 40 to 60 acres and smaller give better average results than the larger ones. This is not only on account of the greater probability of good care at the right time, but also of being better able to harvest the apple crop. The season of harvesting is rather short here and comes at the same time with the third crop of alfalfa and the harvesting of sugar beets, which makes good hands a rather scarce article and often somebody gets caught. The apples in our mountain regions color rather late, not before we have a few good frosty nights, which generally happens after the 15th of September, sometimes not before October. We therefore commence picking winter apples in the first week of October. It is then cool in the night and clear and warm in the day time. In that time of the year it is always dry and nice, so that we can pack right in the orchards, which saves lots of handling. We pack in bushel boxes only. For fancy apples the boxes are lined with paper, for seconds they are not. Colorado apples, especially those around here, are always highly colored, even so that new comers don't recognize the apples and many buyers want us not to mark our Ben Davis apples. They say they have their own stamps. They will probably put the mark on the box according to the variety their customers are looking for.

Fancy apples are absolutely without worm holes, smooth, well shaped and not smaller than 2 1-2 inches in diameter for the large apples and 2 1-4 inches for the smaller varieties.

Seconds or choice are still very fine looking apples, but may have one or two worm holes and if perfectly sound run smaller than the first or fancy.

Culls are invariably fed to the hogs and make splendid feed without any grain whatever.

We have had a good winter, more snow than we ever knew could fall here. It will leave the soil in tip top condition, but we ourselves not being used to so much moisture feel about as much at home as a cat in a wet cellar.

The temperature has not been lower than 10 degrees below In average and that only for two or three nights. We have now cool nights, 20 to 30 degrees, and warm days. It is just right to keep the buds backward, which will not come out before about the middle of April.

Well, Mr. Editor, from an article I read some time ago in your paper entitled, "How to Dispose of Our Apple Crops," written by one of your eastern growers, I concluded that the trouble with him was that he did not have the crop. You see the apple buyers must have had the best of us Colorado growers all right.

While I am writing this I received a letter from a large California concern, who did buy quantities of apples last fall, asking for quotations on 5 to 10 carloads of fancy apples. I am now in the same fix as your correspondent, referred to above, and so are my neighbors whom I called up up by phone. We have not got the apples. We sold in the fall. We have almost always good crops here, if we prune the trees right so that they never overbear. This secures good sized fruit also, and we beg of you, Mr. Editor, not to forget that and to keep us posted on the true condition on the other side of the Rockies, as you used to do before.

FRED HALVERHOUT.

Frulta, Colo.

Information Concerning Blueberries.

Please tell H. M. W., Port Washington, Wis., that if he wants blueberry plants, or information concerning soil, planting, culture, etc., he can obtain any or all by addressing the undersigned. The question was asked by the above gentleman in January issue. I have been conducting some experiments with the best blueberries and hope to be able to propagate them in large quantities. We put up great quantities of blueberries for winter use, and prefer them to any other berry. H. O. LANE.

Mena, Ark.

Blueberry Culture.

In grazing sections throughout the West an old and well known custom is that of burning the dry grass to improve the next year's pasture. Formerly the fires were allowed to spread and burn themselves out at will, and the practice resulted in great forest destruction. Happily for the forests, the burning is now more carefully done when it is done at all, and on the whole the custom is falling into disuse. In Maine a practice of burning exists which is local to that state, is novel in character, and has nothing to do with grazing. The burning is to assist blueberry culture by causing the bushes to sprout vigorously and clearing the ground of other growth.

About 1870 a factory for canning blueberries was located in Maine, and as it prospered it was folowed by others. In 1885 and again in 1899 similar factories and canning companies were established, until today blueberry raising and canning is an important industry in that state. To supply the increasing demand blueberry bush areas have been constantly enlarged, until now "blueberry barrens" were, for the most part, covered by a dense forest, chiefly of white pine and spruce. The forest was thinned by lumbering the pine, and the increased amount of light permitted new kinds of undergrowth to get a foothold. Fire, as almost invariably happens, followed the lumbering, the rest of the original stand was destroyed, and the undergrowth was still further altered, a great variety of valueless underbrush and weeds taking possession of the ground, together with a stand of birch, popple, red maple, and other hardwood seedlings. As the fires continued to occur this hardwood growth became scrubby and was finally entirely eliminated, and the ground became a true barren, covered with a growth of blueberry bushes, sweet fern, brake, bunchberry, goldenrod, and sheep laurel. With the ground in such condition its best use is for blueberry culture.

The blueberry owner divides his land into three portions; each year he picks the berries from one portion, burns another portion, and allows the third to rest. The first year after the land is burned over the blueberry bushes sprout and grow a few inches The second year they yield a full crop of berries. The third season the crop is small and of little value, and the bushes reach a condition in which they can be burned most effectively.

Under this system of blueberry culture the land does not "run out" with constant use for the same crop. Where the burning has been properly done the same tracts have grown blueberries continuously for fifty years without showing any decrease in the yield. But if the land is burned over at the wrong time of the year, or the roots of the bushes are badly injured by fire, many years are required to restore the productive capacity of the tract. The best time for burning is when the melting snow leaves the ground wet and the tops of the bushes dry. After May 10 burning is very injurious, unless the spring is exceptionally late.

The canning companies own most of the blueberry lands in Maine, except some small 25 or 50 acre private holdings. Pickers from company lands get 3 cents a quart, while private owners receive about 6 to 8 cents a quart for their berries. The picking season lasts six weeks. A rapid picker makes from $4 to $8 a day; if he has a large family to help him it is not unusual for him to make $600 of $800 in the six weeks.

I do not think there is a fruit-grower in the country who would be without The Fruit-Grower after seeing one copy of it.—T. A. Sharp, Mammoth Springs, Ark.

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Nitrate of Soda for Early Garden Crops

Some months ago The Frult-Grower published an article on the use of nitrate of soda to secure quick-maturing crops of spinach, lettuce, etc. Much interest was aroused at that time, and we received many inquiries as to how the fertilizer should be used. In thls gardening number, therefore, we feel that our readers will be interested in a report of some experiments with nitrate of soda as a fertilizer for garden vegetables. This will be particularly interesting to those who grow vegetables for market and who find their best profit in the early produce.

The experiments referred to were conducted by the New Jersey Experiment Station, and included the application of the fertilizer to field crops, as well as to garden crops. The latter only will be discussed. Attention should be called to the fact that nitrogen is the most expensive of the fertilizing elements. As used in chemical fertilizers, it is readily soluble, and must be taken up by plants or else it will be largely lost. Care is needed, therefore, to use the fertilizer economically. The New Jersey station calls attention to the fact that nitrogen is not a complete fertilizer; it is only an element of plant food, and its value as an element is measured largely by the content of mineral in the soil, with which it must associate and combine, in order to fully meet the food needs of the plant. The best use of nitrogen is attained when it is applied to soils in good condition, rather than to poor or worn-out soils. The soils to which high-grade fertilizers are applied should possess good absorptive and retentive properties, in order that the materials applied may be retained for the use of the crop, and the physical character of the soil also should be such as to permit of a ready penetration of heat and an easy circulation of water—conditions which are essential in order that the activities within the soil may be unimpeded, thus making it possible for the plants to easily obtain their needed food. In too many cases good plant food is wasted because applied to mixtures of sand, clay and other materials, rather than to soils in the true sense, or to soils that have not been thoroughly prepared, the clods and lumps preventing a proper distribution of the material, as well as a ready absorption of moisture and free circulation of the plant food.

The fear that the use of nitrogen alone on good, rich soils will result in an undue exhaustion of phosphoric acid and potash, which is sometimes expressed, is not well founded, since where an increase in crop is caused by the use of nitrogen only, the amounts of phosphoric acid and potash removed in the crop would not be relatively greater than the amounts removed were some other condition responsible for the increased yield.

The New Jersey station did not find a profit in applying nitrate of soda to crops of low value, such as corn, hay, etc. In the culture of early market garden crops, or such as are improved in quality, and thus increased in value, by quickness of growth, the nitrate is of the greatest service. Such crops as tomatoes, cabbage, turnips, beets and others, in order to be highly profitable, must be grown and harvested early, as any one can grow them in their regular season; their growth must be promoted or forced as much as possible in a season when the natural agencies are not active in the change of soil nitrogen into available forms, and the plants must, therefore, be supplied artificially with the active forms of nitrogen, if a rapid and continuous growth is maintained. Their edible quality is dependent, to a marked degree, upon this rapidity of development; hence a supply of plant food in reasonable excess of ordinary demands is essential, in order that unfavorable conditions of season may, in part, at least, he overcome.

Nitrate of Soda as a Top Dressing.

Owing to the fact that nitrate of soda is frequently used after the seed has germinated and the crop made a partial growth, this method of use is referred to as "top-dressing" — that is, broadcasting over the entire surface, or, in the case of hoed crops, alongside the row. This form of nitrogen is peculiarly adapted for this method of application, since it is so completely soluble that but a slight amount of moisture is necessary in order to distribute it throughout the soil, and, because of its ready availability, it is used by the plant as soon as it comes in contact with its roots. It is the only form that possesses both these characteristics, and is therefore to be particularly recommended for those crops which need an early and abundant supply of nitrogen.

It is well understood by market gardeners that, in their business, liberal manuring must be practiced, and that the manures used must contain an abundance of nitrogen, that may be quickly used by the plants, if rapidity of growth and early maturity are to be attained. The experiments with nitrate of soda were, therefore, planned to show in which directions the benefits from its use were observed—whether, for example, in the larger yield of a crop of the same general character, or whether, together with the larger yield, there was an earlier maturity of those crops in which early maturity is an important factor, or whether the marketable quality was improved, thus returning a larger profit for the same yield, or whether all of these factors were involved, and the results showed, as a whole, benefits were obtained in all these directions.

Early Tomatoes.

A careful study of the special needs of plants shows that there is no other one crop that responds more favorably to the use of immediately available nitrogen than early tomatoes. The influence of the use of nitrate is not only shown in the increase in the yield—in some cases practically doubling it—but in the improved quality of the crop, and because of the larger crop an increased maturity is virtually secured. These are all points of extreme practical importance. The results of all the experiments conducted in different parts of the country and in different seasons show an average gain in yield of about 50 per cent, with an average increased value of crop of about $100 per acre.

In the growth of this crop two methods are used, depending largely upon the character of the soil and its previous treatment in reference to commercial fertilizers or manures. In the first, where the barnyard manure and commercial fertilizers, rich in minerals, have been used on previous crops, then nitrogen in the form of nitrate only is used, and the application ranges from 150 to 250 pounds per acre. By this method the yields are not so large, but the crop is usually earlier, and the net profit is quite as great as if larger applications of manure or fertilizer were made at the time of setting the plants. The object is early tomatoes, and, under average conditions of season and markets, any application of fertilizer or any practice which would tend to encourage a later growth or longer season would reduce proportionately the net profits.

In the other method, barnyard manures are usually spread upon the soil in the fall or winter, thoroughly worked into the soil in the spring. A fertilizer containing chiefly phosphoric acid and potash is applied broadcast previous to setting the plants, and at the time of setting an application of 100 to 150 pounds per acre of nitrate of soda is applied around the hill or over the row. After two or three weeks, depending upon the season and the relative growth of the plants, another application of nitrate of soda at the same rate is applied. This, because it minimizes the interruption in the feeding of the plant by furnishing immediately available nitrogen, causes not only an increase in the yield and marketable quality of the entire crop, but it materially increases the quantity of early fruit. The results of four years' experiments show that, by this method, the value of the increased yield of what may be regarded as extra early fruit averaged about $45 per acre.

As in other cases, care should be used in the application of nitrate; it should not come in too close contact with the plants, and, if broadcasted after the plants are set, it should be done when they are dry, so that all of the nitrate may reach the soil. Where a larger quantity is used, as, for example, 300 pounds or more, it is very desirable that fractional dressings should be made, though care should be used not to make the second application too late, as it encourages a later growth of plants and retards maturity.

Early Cabbage.

The cabbage is a gross feeder, and the crop can utilize large quantities of plant food to good advantage. The experiments with this crop show that even where the land has been fertilized with what would be regarded as reasonable amounts of fertilizers adapted to the purpose, extra dressings of nitrate have given very profitable return. The yield has been increased from 40 to 80 per cent, and the net value of crop from $53 to $80 per acre. The experiments also show that what may be regarded as a large quantity of nitrate, namely 400 pounds per acre, is superior to any smaller quantity, and further, that this would be better applied in two rather than in a greater number of fractional dressings, as the later applications have a tendency to disproportionately increase leaf growth and retard heading. The most remarkable effect of the nitrate is shown in the influence it exerts upon the marketable quality of the crop. In the experiments conducted the addition of nitrate resulted in more than doubling the value of those heads which were marketable —that is, where no nitrate was applied $1 per hundred was received, and where 400 pounds of nitrate was used the price was $2.50 per hundred.

On soils well adapted for cabbage —medium sandy soils—the land should be plowed early and well cultivated. If manures are readily attainable, a dressing of ten tons per acre may be applied and well worked into the soil; previous to setting the plants a fertilizer rich in nitrogen, one containing 6 to 7 ammonia, 6 to 8 potash and 6 to 8 phosphoric acid, should be applied, preferably broadcast, at the rate of 800 to 1,000 pounds per acre. At the time of setting, or very shortly after, nitrate of soda, at the rate of 200 pounds per acre, should be applied, preferably along the row, and cultivated in; this followed two or three weeks later with a second dressing of 200 pounds. The effect of these applications—that is, the presence of an abundance of available nitrogen—will be to stimulate and strengthen the plant, so that it will make use of all of the other food in the soil, and be able to overcome, in a great degree, any unfavorable conditions that may prevail later in the season. The natural tendency of the plant to absorb food is gratified, and a maximum crop is the result.

Celery.

Celery is a crop that responds most profitably to an application of an abundance of available nitrogen. This fertilizer not only increases the yield, but very materially improves the quality of the crop. In the experiments that were conducted it was shown that where ordinary treatment was given, and a small and unprofitable crop was obtained, the addition of a few dollars' worth of nitrate changed the crop into a very profitable one; and in the case of a soil that was regarded as good enough to produce a fair crop, the addition caused a large increase in the total crop, and a very marked improvement in the quality. The selling price of roots grown with nitrate was 150 per cent greater than where none was applied, and 100 per cent greater than where an insufficient amount was used. The increased value per acre of the crop from the best use of the nitrate was over $250.

The celery crop is expensive, both in plants and in labor, and since the cost of these items is the same, whether the crop is large or small, intensive systems of feeding the crop usually give excellent returns. The crop is also very much improved in quality if the conditions are made favorable for continuous and rapid growth, hence an abundance of moisture and of immediately available food are prime essentials. The former can be controlled to a large extent by good methods of culture, but the best culture of the best soils is not capable of providing the necessary food, and, of the essential elements of food, nitrogen seems to be the one that contributes especially to rapidity of growth and to the formation of stalk which possesses that peculiar crispness which in so marked a degree measures marketable quality. Soils that are deep, moist and rich in organic matter are best suited for the crop; these should be heavily manured, say, at the rate of ten to fifteen tons per acre, and should receive liberal amounts of high-grade commercial fertilizer, at the rate of 600 to 800 pounds per acre, all applied broadcast previous to setting the plants. After the plants are well started, apply 200 pounds per acre of dry nitrate of soda along the row, and, if the weather is dry, cultivate it in, though ordinarily the moisture in the soil is sufficient to cause an immediate distribution of the salt; and in three or four weeks make a second application of nitrate of the same amount and in the same manner. The two applications of nitrate, of 200 pounds each, will, it is believed, give, on the average, better returns than smaller amounts or a greater number of applications, though the conditions of season may warrant such changes from this method as the judgment of the grower may dictate.

Sweet Corn.

Very great progress has been made in the growth of sweet corn for the early market, due to the development of hardier varieties and to greater care in the selection and use of fertilizing materials. These hardy varieties of sweet corn are now frequently planted as early as March as far north as New Jersey, and when planted so early, the soil supplies of nitrogen are yet unfavorable for the change of organic or other forms of nitrogen into the nitrate form. Hence nitrate should constitute a large part of the nitrogenous food of the plant if early maturity is to be accomplished.

A good practice is to manure the soil either during the fall or winter, with from ten to twelve tons per acre, and apply previous to planting or setting the plants (in many cases the plants are started in the plant-house), a fertilizer rich in phosphoric acid and potash, also containing organic forms of nitrogen. At time of planting use a compost in the hill, and use nitrate as a side dressing after the corn is well rooted. The advantage of the compost and organic forms of nitrogen is that they supply the soil with an abundance of readily fermentable material, which, to some extent, warms the soil, besides containing substances useful in later stages of growth. Nitrate may be applied in three dressings, at the rate of 100 pounds per acre in each dressing, and the dressings should be so distributed as to cover the season of growth—that is, as soon as plants begin to form ears the last application of nitrogen may be made, which encourages a quick growth of the ears and also makes them much larger. The increased gains per acre when the nitrate has been used in this way have ranged from $18 to $40 per acre—a very profitable use of nitrogen, as the gain is really in excess of that which would be obtained by average methods of manuring.

The experiments also included beets, muskmelons, early potatoes, etc., and in each case there was a profit from the use of the nitrate. In the case of table beets, it was found that the roots were brought to marketable size in much greater quantities by the use of the nitrate. The reports here given are from Bulletin 172 of the New Jersey Experiment Station.

This Is the Way We Grow.

Last year my attention was called to The Fruit-Grower by a friend, and I subscribed. Now I think it is the greatest fruit paper in the world; I do not see how I could do without it. Last night, while at the home of one of my friends, where several neighbors were visiting, I made this statement, and my friend and the five visiting neighbors all wanted the paper. So I send a block of seven subscribers, instead of a block of five.

LEE HARREL.

Platte County, Mo.

(See how it is? A friend sent this man's subscription, and within a year he secured six other subscriptions. Have you done any missionary work like this? If not, will you not do this before our special subscription offers are withdrawn, on May 1? Do it now.—Brother Jonathan.)

Cream Separator Awards

ST. LOUIS EXPOSITION

After the most careful, complete and thorough investigation and consideration of every fact bearing on the subject ever undertaken by the award authorities of any exposition, the St. Louis Exposition conferred every highest honor possible upon the

De Laval Cream Separators

THEIR INVENTORS, AND THE BUTTER EXHIBITS MADE FROM THEM

The international examining jury of awards consisted of Major Henry E. Alvord, Chief of the Dairy Division, Department of Agriculture, Washington, D. C.; Prof. C. F. Doane, of Maryland State Agricultural College; Monsieur Dupont, of France, and Mr. Neilson, of Argentine, S. A., the recommendations of this jury being confirmed and approved by the Superior Jury consisting of President Francis; Judge W. F. Boyle, representing the National Commission; Dr. Theodore Lewald, Imperial German Commissioner; F. J. V. Skiff, Director of Exhibits; Monsieur Gerrard, French Commissioner-General, and sixty other high international representatives.

The De Laval Separator Company was granted the GRAND PRIZE (very highest award) for CENTRIFUGAL CREAM SEPARATORS, covering all sizes, for Farm and Factory use.

In addition, in recognition of the original invention and the development of every important stage of advance in cream separator construction, a second Grand Prize (very highest award) was granted to Dr. Gustaf de Laval, of Sweden, for the invention and later improvement of the first practical cream separator; a Gold Medal (next highest award) to Baron Clemens von Bechtolsheim, of Germany, for the invention of the "Alpha-Disc" system embodied in the modern De Laval machines, and another Gold Medal to John Joseph Berrigan, of America, for his invention of the "Split-Wing" distributing shaft, the latest and perfecting feature of the De Laval machines of today—these three awards marking the essential steps of development of the Centrifugal Cream Separator.

HIGHEST BUTTER AWARDS

In the butter exhibits the Grand Prize (very highest award) was granted to J. C. Joslin, Winsted, Minn., on De Laval made butter, while the five Gold Medal awards were granted to L. S. Edwards, Lamont, Iowa; W. B. Johnson, Arlington, Iowa; M. Sondergaard, Hutchinson, Minn.; L. S. Taylor, Glenville, Minn., and S. W. Laird, Walker, Iowa, each and every one of them De Lavel users.

Aside from these Exposition awards proper the National Buttermakers Association held its Annual Convention and International Butter Contest in the Agricultural Building in October, in connection with the Exposition, the Championship Cup being awarded to H. C. Hansen, Smiths Mill, Minn.; the Gold Medal to L. S. Taylor, Glenville, Minn., and the Silver Medal to F. L. Odell, Greenfield, Iowa. All of these as well as the winner of every State Silver Cup, being De Laval made exhibits, as were 473 out of a total of 493 butter entries in this great Contest. Every single entry scoring higher than 95 was De Lavel made.

FALSE COMPETITIVE CLAIMS

The advertised representations of a certain separator concern that the butter exhibits of two women users of its machines won the "World's Championship" and the "Sweepstakes" at St. Louis are wholly and unqualifiedly false. There were no such prizes or awards, and the only awards these exhibitors did receive were Silver and Bronze or third and fourth class medals, respectively.

Equally false is the continually repeated claim of this concern of having made a "World's Skimming Record" at the Buffalo Exposition, where its work was inferior in every way to that of the De Laval machines, the Gold Medal (highest award at Buffalo) for Cream Separators having been granted to the De Laval Company, while the concern in question received a medal only on its combined exhibit of dairy apparatus. Its course, along with other unscrupulous exhibitors, in afterward circulating a fake "duplication" of this medal, was doubtless one of the reasons which led the U. S. Government to prescribe that any attempt to duplicate or pretend to duplicate a St. Louis medal would constitute counterfeiting and be punishable accordingly.

Highest Awards for Twenty-five Years

While the De Laval machines have invariably received the highest awards to Cream Saparators at every International Exposition since their invention twenty-five years ago, it is noteworthy that their triumph at St. Louis was even more complete and sweeping than ever before.

The DeLaval Separator Co.

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Government Lands For Settlement

To be Irrigated and Disposed of Under The "Carey Act" —Making Gardens of the Desert.

Copyright, 1905, by J. W. Gregory.

As set forth in the February Fruit-Grower, I have arranged to locate people on some thousands of acres of irrigable public lands in Big Horn Basin, Wyoming.

This is government land, segregated and turned over to the state of Wyoming for reclamation under the "Carey act." The state has caused thorough examination of these lands by its engineers, having especial regard as to the sufficiency of water-supply available for the land, and they have set apart so much land as the water will irrigate in perpetuity. The state then contracts with a responsible company, which is put under heavy bonds, to construct the necessary irrigation works and secure the settlement of the land, the state fixing the price of both land and water-rights and keeping control and supervision throughout.

What and Where 'Tis.

Big Horn Basin is, as its name implies, a basin, or broad valley surrounded by great ranges of mountains, situated in the southwestern corner of the state of Wyoming. The elevation of the floor of the basin ranges from 4,000 to 6,000 feet. The climate is arid, there being comparatively little rain or snow in the basin the year round—but vast quantities of moisture in the form of both rain and snow are wrung out of the air by the cold tops of the surrounding mountains, thus constantly storing never-failing and abundant supplies to irrigate the dry and sunny lands below. Thus, there is formed a broad, dry basin, surrounded by its cordon of beautifully majestic mountain servitors to collect and hold its priceless stores of life-supporting, wealth-producing water. The basin has an average of 312 days of sunshine per year. Its atmosphere, wrung dry by the surrounding mountains, is clear and pure. Its summer heat is alleviated by the near-by snow-caps of the mountains and its winter cold is modified by the Chinook winds from the Pacific, producing but little snow and no blizzards. Even its extremes of heat and cold are felt less by man and beast than would be the same temperatures in a damp climate. Such a climate as that of the Basin is not only pleasant to live in, but is exceedingly healthful, and the absence of rain, hailstorms and frosts, combined with the advantages of an abundant, reliable water supply, render farming, fruit-growing and gardening, stock-raising and poultry-raising safe, scientific and highly profitable.

Fuel and Building Materials.

The Big Horn Basin contains immense coal deposits—some of the finest in Wyoming, noted as a state which has coal mines in every county. In parts of the Basin, the settler can buy coal at the mines within easy hauling distance, at $1.50 a ton. Settlers have the right also, under the United States laws, to cut such timber as they need for domestic purposes, off government lands, under proper restrictions; hence fuel, fencing and building materials may be secured for the cutting and hauling. The people, at present, however, build very largely of adobe, which is made right where the structure is built, at small expenditure, other than the labor of erecting the walls, which can be done very rapidly and by the cheapest labor.

Soil and Surface.

The soil of the irrigable tracts is deep; is of a very mellow, marly nature, slightly gravelly in places, but not rocky; is delightfully easy to work and, when supplied with abundant water, surpassingly productive. There is no hard pan. The native surface growth consists of the sparse grasses and sage-bush, characteristic of all the western regions of scanty rainfall. There is no timber on the irrigable lands, neither is there "sod" on the ground; therefore ordinary stirring plows are used even for first plowing, breaking plows not being needed; hence, without any preliminaries, the settler simply proceeds to break out his new ground, practically the same as if it had been already in cultivation, there being no "clearing" necessary, other than gathering and burning the bunches of sage brush, after plowing them out. The surface of the irrigable tracts is so smooth, as a rule, that little or no leveling is required to prepare for irrigation, and the laterals for leading the water to the land are readily and rapidly made by plow and an A-shaped, home-made tool. Some persons, hasty and slovenly, simply disk in the first crop on ground where there is but little sage brush. Thus the whole cost of putting a tract under cultivation and irrigation will be from $1 to $5 per acre, exclusive of cost of seed.

Crops and Stock.

Not more than a tenth of the area of the Basin is irrigable. The rest is grazing land, supporting immense herds of cattle, horses and sheep. Wyoming soil, water and climate produce the finest horses in the world. The best grades of cattle and sheep thrive in all parts of the Basin. It is an ideal country for swine and poultry, hog and chicken cholera being unknown among alfalfa-grown stock. As alfalfa is the greatest honey-producer known, and as alfalfa is the chief crop grown there, these facts, along with the magnificent sunny climate of the Basin, proclaim it a bee-man's land. In every irrigated country every land-holder may produce an abundant supply of fish. After alfalfa, come wheat, oats, barley, corn—in fact all the corns, small grains, forage and root crops and garden crops. Of the fruits, winter apples take the lead; but all sorts of fruits and berries suitable to the latitude can be grown successfully.

Industries and Markets.

Not more than a tenth of the area of the Basin can ever be irrigable. The rest is grazing land, supporting immense herds of stock. The great coal deposits throughout the Basin insure the profitable employment of much labor and capital. The mountains around the great rim contain immense deposits of iron and copper, also lodes and placers of gold and silver, only a small portion of which are under development, and there are very large national timber reserves, which insure both activity in lumbering and abundance of the finest lumber at reasonable cost to the fortunate Basin dwellers. All these avenues of business activity, combined with the expenditure of millions of dollars on irrigation works, both under state and government management (the government has a two and a half million dollar project in hand there now) mean steady employment, henceforth, for men and teams at good pay. These facts, in turn, combined with the demand for feed to fatten the range-grown stock, the haste with which other railroads are building toward and into the Basin, and the proximity to these lands of the Great Yellowstone Park, which will bring, year by year, its increasing thousands of sight-seers from all parts of the world, insure a ready and steady market at remunerative prices for all the products of range, field, orchard, garden, fish-pond, apiary and poultry-yard throughout this most exceptionally fortunate region, and a quick sale at a big price for any piece of irrigable land which any holder may be willing to let go.

For Beauty, Health and Comfort.

Fine wells of good water are readily obtainable anywhere in the Basin—and the canal water is clean, mountain water.

The mildness of the climate, the dry, pure air, the wealth of sunshine, the ideal elevation, all combine to produce conditions which may be said to constitute almost a specific remedy for all catarrhal and pulmonary ailments. How the people do eat and sleep under such conditions! The weather is never so hot but that one finds it comfortable in any sort of shade that protects from the direct rays of the sun. Sultry weather is unknown and one needs some covering every night in the year. On the hottest days, a delicious coolness begins to be felt before the sun has wholly disappeared in the west. In winter the temperature rarely falls below zero and even the worst of such weather is not so uncomfortable, in that still, sunny air, as is a damp, cloudy day, at freezing point, in the humid regions.

One need not possess great deductive ability to readily perceive that the man who manages to secure even a forty-acre tract of irrigable land, with an adequate and perpetual water-right, in such a region, will have something that he can always sell at a good price; and better still, something that insures him the basis of permanent industrial independence—a home where he can support his family in comfort, whether "trusts" are "fattening" or "busting."

Demonstration.

It is a fact, established by official statistics, that irrigated land produces in value, year by year, an average of from four to sixteen times the product of non-irrigated land, the ratio varying with different crops.

Everyone knows that soil, sunshine and water are the three factors which enter into the problem of agricultural production. The man, his heirs and assigns, to whom Uncle Sam gave a piece of good land in Central Illinois, for example, or Central Indiana, got a good thing. I know, for I was reared in that grand country myself. The sun shines there—when it isn't too cloudy—and the farmer annually "makes his game" with old probs as to how the water is to be applied to his crops. How often it occurs that the hay and small grain are utterly ruined in the fields by excessive rain after the crop has been laboriously made, and then, more than likely, the corn crop will be cut short, later in the same season, because there isn't rain enough. It is a rare thing, indeed, to harvest a really full crop of bright, clean, first-class quality under such conditions.

Now contrast the irrigation man. The necessity of irrigation indicates that he is located in an arid region. The rainless skies are sunny and the air is dry, hence he can put in all of each long, clear day in productive labor, with the least tax upon hi vitality by heat. In the spring he can go to a dealer and say: "I have twenty acres of alfalfa. This fall, on such a date, I'll deliver you a hundred tons of first-class hay at the stated price. I shall sow twenty acres of oats and, on such a date, I will deliver you a thousand bushels," and so on; and both he and the dealer know that he will be able to "deliver the goods;" because, having the soil, being assured the sunshine and controlling the water, he knows what he can do. He is handling his business upon a basis of scientific certainty, not chance. He plants his seed and when he knows the coming crop needs water he "turns her on." When it has had enough—a good plenty—he "shuts her off." He may, if he chooses, sit on a camp-stool, under a broad umbrella, in the midst of a dry, sunny shower. He may superintend a soaking rain—without thunder and lightning accompaniments—on the one hand, while on the other, the sweet odors of his curing alfalfa ascend like incense through the sunny air. If he simply attends to business, he will grow a full crop of best quality on his land every year. Isn't it easy to see how one such acre may readily equal four of those where that most important factor, the water, is always an unknown factor? The man who has one of the best 160-acre farms, all in cultivation, in Central Indiana, or Illinois, is pretty well off. The man who has an irrigated 40-acre tract in the Big Horn Basin is equally as well off—both from the standpoint of the selling value of the land and its productive capacity. Then, in fact, he is as **rocky** as any other **feller**, isn't he? Q. E. D.!

Costs and Value.

The state of Wyoming has fixed the price of all its lands, reclaimed under the Carey Act, at the nominal figure of 50 cents per acre. The price of a water-right is fixed at such figure as will cover the cost of the dams, headgates, canals, reservoirs, and other works to provide reliable, substantial and adequate means of irrigating **all** the lands embraced in the system and the cost of settling and disposing of same—**and no more.**. In the case of the lands under consideration, the price of the water-right is $30 per acre, payable in cash; or may divided into five annual intallments, at 6 per cent on deferred payments, if desired. Persons accustomed to the idea of getting a government homestead for the filing fees and a term of continuous residence may at first think of this as a high price; but a brief analysis will show the other side. Think how many hard-working men have subjected themselves and families to the slavery, humiliation and heart-breaking loss of a term of years on such a homestead as has been obtainable in the last fifteen year, on the losing wager of "$14 against nothing that he could maintain himself five years on the land." The possession of such land, consuming a man's time and energy, makes him poor. On the other hand, the minimum value of an irrigated acre of good, well-located land, with an adequate and perpetual water-right, is $100; and it runs above $1,000 in favored localities. The average value is above $300 per acre—and increasing as land grows scarce and the advantages of irrigation are demonstrated. Therefore, a man who gets a tract of this land has at least thrice the value of his money from the start.

What You Can Get.

Every man, or woman, above the age of 21 (except married women, who are not heads of families), who is a citizen of the United States, or has declared intention to become such, has a right to take 40, 80, 120 or 160 acres of these lands—while the supply lasts. No one can file upon more than 160 acres and no contract will be made for less than 40, nor for any other tract not a multiple of 40 acres.

The companies reclaiming such lands are not allowed to own nor traffic in them, nor can any one secure more than 160 acres at any price. The state keeps full control of land and water and fixes the price of land and water-rights and when the settlers have paid for these they own both land and water, in perpetuity, without further cost than a few cents per acre annually for maintenance.

The contracting company cannot even accept any money in advance of getting the water to the land; but, no one can file on the land without a contract with the company and it can allow an applicant to choose a tract and give him a binding contract to hold that land for him and notify him when the water is ready for delivery.

Selecting a piece of this land and securing such a contract for it is called locating it. Myself and associates have arranged to locate settlers upon some thousands of acres of such land. A portion of this is already accessible to water and could be filed upon and put under cultivation and irrigation this season. The rest will not be ready for entry until later in the summer, or fall. Anyone desiring to choose such a tract can do so by paying a location fee of 50 cents per acre. This is not an extra charge, because it will be credited on the first payment on the water-right. It is simply an agency fee for showing the applicants the lands, locating his choice of them and securing him a contract that will hold the land for him to file upon when the water is ready.

How to Get It.

Should you desire to take a piece of this land you can forward 50 cents per acre and we will select for you, and send contract for, the best land still open to location. If you prefer to see the land before locating, you can take advantage of the cheap home-seekers' railroad rates on the 1st and 3rd Tuesday of each month, to go out to the Basin and you will be met at the R. R. station nearest the land and taken over the whole tract and shown same, without cost for conveyance. After paying the location fee of 50 cents per acre no further payment will be received on the property until you receive notice from the company that it is ready to deliver the water to your land. Within 30 days after receipt of such notice you proceed

to the office of the district clerk of the county in which the land is located and file upon the land. This costs a fee of $2, and at the same time you pay 25 cents per acre, being half the state price of the land, and also at least one-fifth of the cost of the water-right, to the company. It is on this payment that you get credit for the 50 cents per acre location fee.

Within one year from filing you must put at least one-sixteenth of the land under cultivation and irrigation, and in the second year another sixteenth; and within the third year you must make final proof, showing not less than 20 acres under cultivation and irrigation, pay the final 25 cents per acre due the state and receive your patent. Meanwhile at least one-fifth the cost of the water-right, with 6 per cent interest on deferred payments, is payable annually on same; or this may all be paid in cash, or in less than five payments. Final proof can also be made at any time inside the three years, whenever not less than 20 acres has been put under cultivation.

Requirements Not Burdensome.

Having taken a government homestead, or other piece of land under the United States land laws, or owning any quantity of land anywhere, is no bar to taking a piece of this land. And while it is the evident intention to discourage speculative interest in these lands and to get them into the hands of actual settlers, the requirements as to residence and improvement are not so onerous as in case of homesteads. The applicant, on making final proof, must be prepared to testify that he is a settler upon the land and that he has not less than 20 acres under cultivation and irrigation; no testimony is required as to the length of his residence, nor as to any other improvements. In this particular, the requirements resemble those of the desert land act, under which many claimants hire all their work done and settle upon the land only when ready to make final proof.

Prompt and Eager Demand.

It is easily apparent that there will not be nearly enough of this land for all those who will want it. In response to the page in last month's Fruit-Grower applications came from all directions and from as far away as Virginia and Alabama. One gentleman called up by telephone and took 160 acres, sending his draft for the fees next day. Nearly every one who wrote spoke for two, to as high as ten others. Under such demand, which will strengthen every day, any person who has been prompt enough to get a good piece of this land will find a dozen eager to take it off his hands, if he should decide not to file upon it when filing time comes. While there are considerable areas of this land that is all alike, smooth and first-class, and on which a party of relatives or friends could be located on adjoining tracts, there are pieces on which a part of the land is somewhat too rolling or too high to get the water on all of it. These are not so valuable as the rest and will naturally be left to the last. The demand will be such that even these will eventually be eagerly taken. Meanwhile, the first applicants will get the best lands. The latest ones will get only a lasting pang of regret. A man can't make a mistake by engaging a piece of this land, if he has the 50 cents per acre. He will only be sorry once if he passes up the chance to get such a property; but that sorrow will begin soon and last a good while.

So You Can't Lose.

Any one who sends on his location fee will be located upon the best land open to settlement at the time his money is received. This will set apart the best land for him and hold it for him. When he comes to see it, if his tastes and preferences have not been met by the locator's selection, he can take instead any other land in the tract not then located. This insures the best land for those who act first. The man who waits to locate until he can get out to see the land may have to put up with a sorry piece, when he might have had of the best and, in fact, there will be many who will either get none at all or be compelled to pay some one else a good bonus to let go.

The Railroad Rates.

The next excursion to the Basin takes place Tuesday, March 21st; $15 for the round trip, from St. Joseph, Kansas City, Omaha or St. Louis, to Cody, Wyoming, which is the objective point, and return, tickets good for 21 days. Rate from Chicago, $20.00. These are very low rates. Rates very near these can be secured by people living north the Missouri river in Missouri, all of Iowa, Wisconsin and Illinois. Inquiry should be made early of your local agent, and if you can not secure satisfactory attention, I will take up the matter for you, on request. Have not been able to secure any reduction, west or south of the Missouri river. Parties in Nebraska and Kansas, Oklahoma, Arkansas and south, will have to come to the most convenient Missouri river point. The excursion train leaves Kansas City at 6:10 p. m., on the date mentioned; leaving St. Joseph at 8:25. Pullman accommodations should be engaged well in advance by those desiring same. Parties in the territory east of Illinois should consult their local agents about homeseekers' rates to connect with trains on the 1st and 3rd Tuesdays of each month in this territory.

After this month the rates on these excursions will be one fare plus $2 for the round trip. This will make the fare from St. Joseph $30.10; from Kansas City, $32, etc.

At time of writing this article, Feb. 28, it is my intention to go to the Basin March 7 and to be back home by the time this issue comes from the press. There will be so little time for arranging to go on the trip to the Basin on the 21st, which is the last date of the cheapest rates, that any who wish to go would better wire me to that effect than risk waiting to write. Note carefully what is said under this head, as it contains all the information I have on the matter and from it you can readily figure out, by consulting with your local station agent about steps to take to join the excursion.

Me an' Lawson, Same Trouble.

The exigencies of modern magazine publishing, which require some "forms" of an issue to go to press long before the date of issue, require the preparation of the matter for these pages more than two weeks before the date of this number. Hence, while I have endeavored to answer herein fully, such questions as seemed not to have been clearly answered in the February number, other points may need more specific clearing up. If each inquirer, however, will **carefully read the whole of this article a second time,** he will probably find his questions answered with reasonable clearness as to details. Where so many details must be handled, it unavoidably makes the article inconveniently long and the reader is apt to miss some points in a single perusal. Any and all further desired information will be promptly furnished, however, and all who may be interested are requested to write at once concerning any matter not entirely clear.

Buffalo Bill's Choice.

Buffalo Bill, whose truly name is William F. Cody, is the one for whom the town of Cody in the Big Horn Basin, is named. He has his home there and not less than a million dollars invested in ranches and other property thereabouts. To be the most famous scout of his time, he must have had a most intimate knowledge of the great inter-mountain country, and if there had been any region possessing greater advantages than the Big Horn Basin, for home and investment, a man of Cody's proven business ability would have selected such place to "set his stake." The facts of his choosing the Big Horn and of his investing over a million dollars there show most strikingly what is his expert judgment in regard to that region. There he makes his home and breeds all the horses used in his Wild West Show, selling abroad each season those used and broken by the season's work and taking out a fresh supply from his ranches each spring.

How They Like It.

Among those going out to the Big Horn Basin last month were A. C. Lemser and N. E. Tucker, of this city. Starting on the 7th of the month the party were plunged into storm and extreme cold from the first night on the train. All will remember the period of ten days following Feb. 7th as being one of the most severe experienced in a long time. When the train reached Toluca, Montana, where the railroad branches off to enter the Basin, the temperature stood at 15 below, and, of course, expert firing up was required to keep the passenger coaches habitable. After passing through the tunnel through which the railroad enters the Basin and proceeding southward, the fires were allowed to go out and by the time Cody was reached doors and windows of the coaches were open.

Inhabitants of the Basin were unanimous in pronouncing it the severest weather they have ever experienced in that locality, yet at 11 o'clock at night when starting on the return home, Mr. Lemser says he spent some time walking up and down the depot platform, hatless, in perfect comfort. It is not to be understood by this that it was not really cold in the Basin, for it was some degrees below zero several mornings, but this incident is related to show how much briefer and less severe are the visits of their coldest weather, compared with that outside.

The gentlemen named were turned loose among the German farmers who have been farming on the irrigated lands therefor the past four years with uniform success. Mr. Tucker is quoted as saying that it was the only region he ever visited which showed up better than a land agent could describe it. The principal points gleaned from a very interesting interview with Mr. Lemser are interspersed through this article. He was especially clear on the matter of the value of the home market in the Basin, and himself and several friends will locate there.

Say Which You Want.

Remember that you have a full year after filing upon your land in which to put the first one-sixteenth under cultivation and that a man with a team and plow can put ten acres of new ground into some crop other than alfalfa, and make the ditches and water the ground in less than two weeks, in case of need for haste, and at an expense of less than $5 per acre all told. Hence, if you think you might like to get some of your land into cultivation within the first year, and can make your first payment, it would be well to locate on land already accessible to irrigation, because you have plenty of time for doing the work and can make your successive crops support you and and make the succeeding payments on the land. With so much outside work obtainable close by and at good wages, a hearty, industrious man need not wait to make sure of means for more than his first payment and early expenses.

The reason I except alfalfa in mentioning a possibly hurried job, is because the experienced irrigator will take more pains in putting in an alfalfa field than in planting an orchard. It will last longer. Once planted, there is no further plowing, planting or cultivating—just irrigate, harvest and utilize. The crop does not "run out." There are alfalfa fields among the Mexicans in the south over 100 years old.

This does not necessarily imply that all alfalfa land requires expensive labor. The bulk of our irrigable lands are so smooth that they can be put into alfalfa as readily as into any other crop—only it is well to actually irrigate the land and note results before sowing alfalfa, which is expected to stay for keeps.

In sending location fees to cover locating a tract of land, we will put you on land that will be later about getting the water, unless you specify that you want that upon which you will file within thirty days from locating.

Odds and Ends.

Covering, briefly, some points not covered above:

There is little or no alkali in the water.

The irrigation supply for the land in question is obtained from the South Fork of the Shoshone River.

The irrigated lands of the Basin are sure to have a dense population, which means ample transportation facilities, rapid transit, free mail delivery, telephones, schools, churches, amusements, social privileges—the comforts of the city with the independence of the farm.

Every school district in Wyoming containing as many as five children of school age, has a school provided. Arrangements are already under way to build a denominational college on a portion of this tract of land on which we propose to locate you.

Every one of our excursions will be personally conducted from St. Joseph by some competent person or persons from our office here.

From Senator Warren.

I have had the honor of personal acquaintance with Senator Francis E. Warren for nearly fifteen years. As Governor and Senator he has long served Wyoming and is intimately familiar with the resources and characteristics of all parts of the state. He is one of those men of the Roosevelt type who are the pride of American citizenship—big physically, mentally and dynamically. I am glad to quote the following letter:

UNITED STATES SENATE COMMITTEE ON CLAIMS.
Francis E. Warren, Wyo., Chairman,
Washington, D. C., Feb. 28, 1905.

J. W. Gregory, St. Joseph, Mo.:

Dear Mr. Gregory:—I am in receipt of yours of the 18th, enclosing me a page from the February number of the Western Fruit-Grower, published at St. Joseph, and containing our article by you on irrigable public lands in the Big Horn Basin, Wyoming.

Your article does not exaggerate the opportunities presented by irrigation enterprises in the Big Horn Basin for those who desire to make homes in that part of the West.

I trust that you will continue your efforts to obtain settlers on the lands in question and thus help build up that portion of our state.

Thanking you for your very kind words in reference to Wyoming matters, I am very truly yours,

F. E. WARREN.

Statement of Mr. Irvine.

Reprinted from February number.

Judge Gregory has had his office with The Fruit-Grower for nearly three years past and has been known to the manager of this paper for some fifteen years. He resided for many years in Southwest Kansas, an irrigation region, and thus became schooled in its practical workings. In that time he took so active and prominent a part in national irrigation affairs as to become well known to and associated with all those most prominent in that interest. He helped organize the National Irrigation Congress, serving on its executive committee six years. He certainly has had the experience and has the ability to qualify him to make and superintend selections of suitable land for those who may wish to avail themselves of his services. I have already arranged to take a location of the land, having long heard the Big Horn Basin highly spoken of, and good irrigable land at the price fixed by the State Land Board in this case cannot but be a prize that is worth winning. Parties who may choose to remit location fees to Judge Gregory and have him select land for them can rely upon their interests being carefully and conscientiously looked after.

JAMES M. IRVINE,
Editor The Fruit-Grower.

An Important Part—Locating.

In locating settlers upon these lands, I am associated with Messrs. H. W. Frieling and C. H. Laiblin, representatives of the Company which has the contract to build the irrigation works and settle the lands referred to. They have their St. Joseph office at No. 619 Edmond street. They are gentlemen of highest standing and many years' experience in all details of reclaiming, farming and locating irrigable lands in various parts of the West. They are men of judgment and fairness as well as the special experience which makes them expert and competent to select the best land, and those who entrust us with the responsibility of making their locations may rest assured that the rule of "First man gets best land" will be strictly and impartially and ably adhered to, according to the best of our judgment. One or more of us will accompany, from St. Joseph, every excursion to the Basin, and attend to making the locations—as carefully and conscientiously for those who forward their fees as for those who go in person to examine for themselves; no deviation from the rule of giving each locator—whether present or absent—the best land then available, in our judgment, having due regard, of course, for any expressed preference that can be observed.. I have a desk at the Edmond street office, where large wall maps and plats of the lands may be seen, and where all personal inquiries must be made, and where mail matter may be addressed, as well as to my long time address at Seventh and Charles streets.

J. W. GREGORY.

Some Common Orchard Insects

By Prof. J. M. Stedman, Missouri Experiment Station

PART II.

Last month we took up the different insecticides and discussed the relative merits of each; also gave directions for the preparation of the same. This month we take up a discussion of those insects which are apt to be most common in our apple orchards, and which must be reckoned with sooner or later. The canker worm has been discussed in these columns many times; it was not numerous in the Middle West last year, and the growers who spray for codling moth every year will likely never be bothered with canker worms. This month we discuss three insects, one attacking the apple tree itself, the other two attacking the fruit. The first is the

Fruit-Tree Bark-Beetle.

This little beetle, the work of which everyone knows by the "pin-holes" or "shot-holes" eaten through the bark of infested trees, is so well known as to need no special description. Unfortunately, this insect is increasing to an alarming extent in many of our orchards, especially the apple orchard. Normally, this insect attacks the diseased trees or portions of trees, in preference to healthy ones; and during the drought a few years ago, multiplied with remarkable rapidity, because of the devitalized condition of our orchard trees at that time. Fully half of the deaths of apple trees attributed to the drought was directly caused by these beetles. In an indirect way the drought had its share to do with it, since the devitalizing of the trees gave these insects the best opportunity for multiplication.

The beetles emerge from the infested trees early in the spring, and, after pairing, the females eat their way through the bark into the cambium layer, and then tunnel down the cambium layer for about an inch and a half, depositing in the meantime about fifty eggs to the right and to the left. These eggs hatch into grubs, which work in the cambium layer, mining tunnels at right angles to the main chamber, and then turn in a downward direction. When the larvae are full grown they make a little hole deeper into the wood, and there transform to the pupa stage. When the adult beetles hatch they eat their way through the bark to the exterior, and hence the presence of the great number of holes in the bark of infested trees. The winter is always passed as hibernating larvae in the little pupa chambers.

The best method of fighting these insects is to go through the orchard occasionally and cut out and burn all of the dead or dying portions of trees, or portions badly infested with these insects. If this is neglected during the summer, one should not fail to cut out all the infested limbs during the winter, and burn them before the beetles have a chance to escape. If this is done thoroughly, there will be no beetles to come out in the spring.

The Plum Curculio in the Apple.

The common and well known plum curculio is the creature responsible for the so-called "stings" in the apple; and since its work in the plum is so well known, we will confine our remarks to its depredations in the apple, where its life history is not so well known to the general horticulturist, although every apple grower is well acquainted with the "stings" in the apples.

The adult beetles hibernate during the winter under rubbish of all kinds, or in the ground a short distance below the surface. In the spring the adults come out from their hibernating places, fly to the orchard and feed to a slight extent upon the developing leaves. Later on, when the bloom appears, they will feed upon the petals of the flowers, and still later, when the apples are about the size of cherries, they begin to feed upon them. These beetles make two kinds of "stings," one a small round hole eaten through the skin of the apple and into the pulp, made for purposes of feeding; and the other made for purposes of depositing eggs, consists of a small hole through the skin in which the egg is pushed, and a crescent shaped cut through the skin partly surrounding and partly undermining this egg. When the apples are small the feeding punctures and also the egg punctures (provided the eggs do not hatch and provided fungous and other diseases do not enter at these points) may heal over and the apple recover from these "stings," and no especial injurious results follow; but as these beetles continue this method of eating and of depositing eggs, or in other words of "stinging" the apples, for a month or more, there comes a time when the apple cannot readily outgrow these, or diseases of one nature or another attack the apple in these places, and the apple is either greatly injured or entirely ruined. If the eggs hatch, which, fortunately, very few of them do, the larvae eat their way in a zigzag direction through the pulp towards the core. If the apple now fails to fall by the time the larvae are about one-half grown, the larvae appear to all perish; and the place where the larvae ate through the pulp becomes hard, dense and bitter to the taste, the tissues fail to grow in the proper manner, and a depression is therefore formed at this point in the apple. Depressions are also liable to occur at the points of "stings" where the apple is trying to overcome the injury, but more especially where the larva has succeeded in hatching and working for a short distance through the pulp. In this way the great bulk of our knotty, gnarly or ill-formed apples are produced. I have seen apples that were scarcely fit for the hogs as a result of these insects attacking them in undue numbers.

If the apple falls to the ground before the larvae are much over half-grown, the larvae will go on feeding until they are full grown larvae, and will then eat their way out and enter the ground an inch and a half or two inches below the surface, pack the dirt away from their bodies so as to make earthen cells, and then transform to pupae. Later the beetles will develop and remain in the ground for a few days, then emerge and fly to the trees and begin to feed by making "stings" or punctures in the apples. The adult beetles emerge for the most part during August, and can be found on the fruit in connection with the old beetles. Later in the summer the old beetles perish, and the young beetles seek hibernating quarters. Hence you see there is only one brood of these insects each year, but the old beetles continue their work of "stinging" the apples late enough in the summer to overlap the appearance of the young beetles, which likewise begin the work of "stinging."

Remedies.—It is possible to kill fifty per cent of the hibernating beetles that come out in the spring and feed upon the developing leaves by spraying the trees twice before the blossoms open, but after the leaves have opened to a slight extent, and also by spraying the trees soon after the blossoms fall. Where one is going to spray the trees before the blossoms open for fungous diseases, it would be well to add some paris green or Scheele's green to the Bordeaux mixture in order to kill the plum curculio, but as most orchardists spray their trees with some arsenical poison after the blossoms fall for the codling moth, such sprayings also kill the plum curculio. However, the best method of fighting the plum curculio in the apple orchard is to take advantage of the fact that the larvae will not develop unless the apples fall to the ground. Hence, by picking up and destroying the apples once a week, or by turning cattle or hogs into the orchard and allow them to pick up the apples as fast as they fall, the development of the plum curculio can be entirely checked. It must be understood, however, that this method does not prevent the "sting" that particular season. It simply prevents these beetles from hatching out in the fall to reinfest the orchard the next season.

We can also take advantage of the fact that these beetles are extremely delicate when in the ground as pupae or as young beetles, and by plowing shallow and then harrowing the orchard in the middle of July and again the first and fifteenth of Aug-

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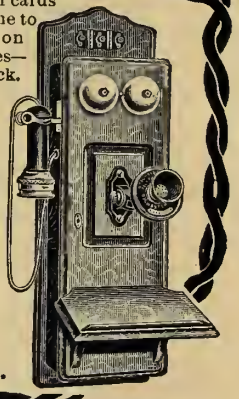

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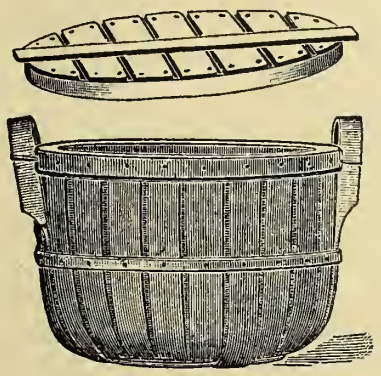

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ust, one can kill the greater per cent of the insects in the ground before they emerge. If a single method is to be followed, the picking up once a week of the fallen apples should be the one resorted to; but the cultivating of the orchard should also be done if possible, and especially in badly infested orchards.

Codling Moth.

The codling moth is one of the best known insects attacking the apple, and although this insect has been worked upon for so many years, we still have the creature to fight; and we probably always will have this insect wherever the apple is grown. Like all other injurious insects, these insects appear to be especially numerous and, therefore, injurious in certain years, and in other years to be so scarce as to attract little attention. The adult moth, which is the insect responsible for the depositing of the eggs resulting in the wormy apples, is a small ash gray and brown colored moth about two-thirds of an inch across its expanded wings. The front wings are marked with alternate, irregular, transverse, wavy streaks of ash gray and brown, giving a general gray chocolate color; while the lower angle at the tip of the front wings has a large tawny-brown spot, with glossy streaks of light brown or copper gold, arranged nearly in the form of a horseshoe. The hind wings are a light yellowish brown with the luster of satin.

These moths appear in the spring of the year and fly about in search of the apple trees; and when the blossoms fall the insects deposit their eggs in the blossom end of the developing apples. While this is not invariable, yet it is the rule. In some rare cases the eggs are deposited on the leaves, but this may be entirely overlooked in our methods of fighting the insects; it is decidedly an exceptional case. Later in the season the moths will deposit their eggs almost any place on the apple itself, and at this time perhaps more often on the leaves than earlier in the season.

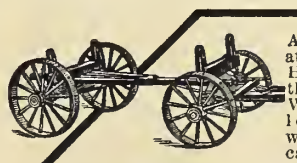
The moths deposit their eggs at night, and are quite slow in doing this. Each moth lays, as a rule, but one egg on an apple, and the egg laying process lasts about two weeks. As these moths are very slow and very irregular in coming out in the spring, it naturally follows that the insects are upwards of six weeks in depositing all of the eggs. When the eggs hatch, which they do in a few days after being deposited, the young larvae feed for a day or two upon the blossom end of the apple, or upon the leaves, if the eggs were deposited there. They then eat their way through the skin into the pulp of the apple and down to the core, where they continue to feed upon the pulp around the core or in the core itself. This usually causes the apples to prematurely ripen an fall to the ground. But whether the apples fall or not as soon as the larvae are full grown, they eat their way out of the apples and crawl down the tree in order to find some sheltered place, such as under the loose bark, or under stones, leaves or matted grass, and there spin cocoons about their bodies, inside of which they transform to pupae and later to the adult moths. As soon as the adult moths appear, they pair and deposit eggs for another brood. There are probably only two broods of codling moths each year; but the moths that come out in the spring vary so in the time of appearing, and are so long in depositing their aggs, that the first moths of the second brood have emerged and commenced to deposit their eggs by the time the last of the first breed have ceased to do so. Hence it is that we find these moths depositing eggs all summer long, from the time the blossoms fall until the apples are full grown, thus causing a series of wormy apples throughout the entire season. One can, then, find the codling moth in practically any stage at any time during the summer. The larvae that are late in hatching very frequently pass the winter inside the apples in cold storage, coming out in the spring and making their pupae about the barrels or about that warehouses.

Remedies—It is not necessary to make any statements about the damage caused by the codling moth, since this is only too well known, not only by the commercial orchardist, but by everyone owning an apple tree or purchasing apples. In practically all the regions in the United States east of the Rocky Mountains, the codling moth can be controlled by spraying with the arsenites. This has been done repeatedly in many orchards, and we are now familiar with the many conditions which render it a success or a failure. No one can appreciate any more than I do the fact that this insect is hard to fight; much more difficult and unsatisfactory than many other insects, yet not so difficult as many others. The reasons why the codling moth is so hard to combat are, that the larvae eat very little before they enter the apple and are out of reach, and the adult moths are continually depositing fresh eggs from spring until fall.

While poultry will do good in devouring some codling moth larvae, and clean cultivation also help to a large extent, and the scraping off of the loose bark and the placing of bands of burlap about the trunks in order to catch the descending larvae and allow you to destroy them every week, and also while stock roaming in the orchard and devouring the wormy apples as soon as they fall and before the worms crawl out, will likewise add considerable to the lessening of the codling moth, yet, after all, spraying with the arsenites is the great remedy and preventive. Taking the country at large, the commercial orchardist, the man who is in the orchard business for a living and expects to get it from that source, will probably rely upon spraying, while the general farmer with but a few acres of apples will not spray as a rule, but will rely upon the other methods that I have mentioned. This is the state of things existing at present, and the reasons are so obvious and so sensible that I doubt if we can change them. The average orchardist will not be troubled with poultry and stock, and the general farmer will not stop to spray, since it comes at his busiest time.

Spraying is more effective than all the other methods I have mentioned, and it is to be hoped that the day will come when every farmer with a single tree, as well as every orchardist, will spray for the codling moth. Where one man controls a large orchard, or where all the farmers in a neighborhood spray for the codling moth as they should do, the results are extremely gratifying and profitable, and wormy apples are not numerous, usually not more than one in three hundred. But where one farmer tries to spray for codling moth while his neighbor's orchard near by is neglected, the results will not be satisfactory. To be sure he can, by repeated spraying all summer long, prevent his apples from being wormy; but this would be too expensive, and would not pay financially, and hence from a financial standpoint, I could not conscientiously advise that farmer to spray all summer long for this particular insect under those conditions. What we want is to get every one in a neighborhood to spray his apples properly for the codling moth, and thereby reap a decided benefit.

In spraying for the codling moth, we try to kill the first brood only, and if this be done well, there will not be enough escape to cause destructive numbers of the second brood. But if our neighbor's neglected orchard be near, the moths from that orchard will lay eggs in your orchard after you are through spraying, and your apples will become wormy as the result of his neglect, and you cannot afford to keep up your spraying all summer in order to prevent it. Hence the advantage of having a large orchard or of having your neighbors spray likewise. I think I have now made this matter clear so that I will not be misunderstood. I advise the use of all methods and means I have



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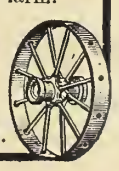

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mentioned, but if you can not use but one method, then let it be spraying properly done.

For financial reasons we are compelled to try to kill the first brood of larvae only, and our object must be to give that young worm, as soon as it hatches, a dose of poison with its first meal and before it has entered the apple and gotten beyond our reach. In order to do this, it is necessary to apply the first spray within a few days, say five days, after the blossoms (petals) fall. Then, in eight or ten days afterwards, spray again and so on for four sprayings, never less. If at any time within four days after a spraying it should rain, it is necessary to spray again at once and not to count this spraying. You will observe that the idea is to keep this poison on the apple from about the time the blossoms fall, and the first larvae are ready to appear, until forty days thereafter. This is practically the egg laying period of the first brood of moths, and all others must come from them.

You will observe, if you put it in practice, that this forty day period is about all the spraying for this insect that you can afford to do from year to year. You will observe that in some years the rains are so frequent during this spraying period, that they will wash off the poison about as fast as you can put it on, and that when this is the case, you will not have good success. But as you can never tell what the weather will be many days ahead, you had better keep up the spraying.

It is well to note here that this spraying will also kill many other biting insects that may be there and cause trouble, were it not for the spray for the codling moth.

It should be distinctly understood, that unless you intend to spray exactly as directed, you need not expect good results in combating the codling moth. Nothing short of the four sprayings will give good results. One or two sprayings is a waste of time, labor and expense in so far as codling moth is concerned. I know of one man who says he has sprayed for codling moth for fifteen years and never saw any good results, and therefore does not believe in spraying. But this man never sprayed but once in a single season. How, therefore, could he expect to get good results when the moths lay their eggs through so long a period

The spraying must be done thoroughly. It is difficult, at best, to cover the apple with poison and to fill the blossom end, and only thorough work will accomplish it. It is not necessary to cover a tree so that it will run off on the ground. Use a fine spray, the finer the better; use all the force possible, and throw it in a mist on all sides of the tree and from top to bottom. Stop spraying before the particles gather into drops and tend to run off the leaves. Many times more poison will remain on a tree just before it starts to run off, than will be there after the mist collects in drops and falls to the ground. Also see to it that the mixture in your tank is kept constantly well stirred while spraying. Failure to do this result in failure to poison the apples, especially if Paris green be used. There are three arsenical poisons on the market, each one of which is an excellent substance to use for the codling moth. If you can be sure and get good, pure and unadulterated Paris green, and that with not more than five per cent soluble arsenic in it, you will find this an excellet substance.

One pound of paris green and three pounds of fresh lime should be used for every one hundred and seventy-five gallons of water. If a stronger mixture be used the repeated sprayings necessary for codling moth may cause burning of the foliage, while if a weaker mixture be used the codling moth will not be killed. As paris green is frequently adulterated so as in some cases to contain very little poison, if any, some states have passed laws requiring the paris green to contain at least 50 per cent arsenic. In order to comply with these laws, common arsenic is sometimes added to the so-called paris green, and as this arsenic is soluble in water it is sure to burn the leaves on which it is applied.

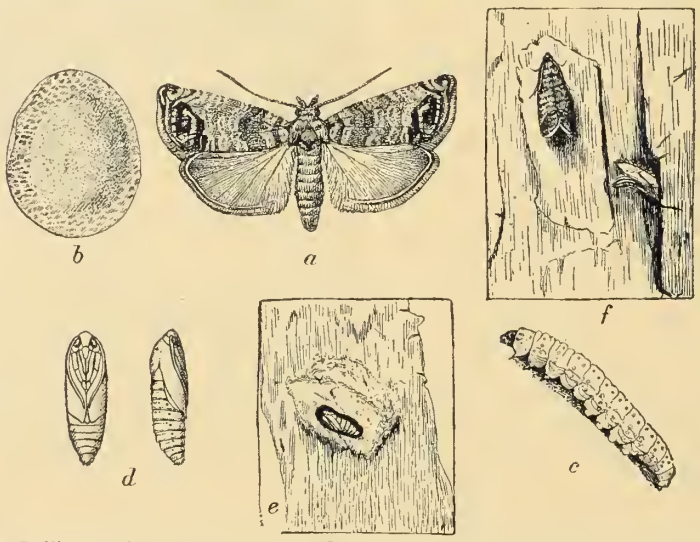
Do not use London purple in trying to fight the codling moth.

Scheele's green is better than paris green, simply because it is so much finer that it will remain suspended in the water by actual test twenty-four times as long as paris green. It therefore does not require anything like as much stirring in order to prevent it settling to the bottom, and the spray to become of varying strength. I would advise the use of Scheele's green in place of paris green. It is to be used in exactly the same proportion of lime and water.

Arsenate of lead is, however, the best arsenical poison known for codling moth and for all other biting insects. It can be made by the orchardist can be bought already prepared as arsenate of lead, or under the name "Disparene." If one is to make his own, it should be done in the way indicated at the beginning of this article, published in February issue. In this issue of The Fruit-Grower will be found the advertisement of Merimac Chemical Co., Boston, Mass., and Bowker Insecticide Co., Boston, Mass., both of which firms handle arsenate of lead in prepared form.

To sum up, then, in fighting the codling moth I would advise the orchardist to spray with arsenate of lead for four sprayings, as given above, and also to scrape the loose bark off the trees and place a band of burlap around the trunk, removing the same every week in order to kill the larvae and pupae that collect there.

J. M. STEDMAN.



The Codling Moth: a, The moth, or adult insect, slightly enlarged; b, the egg, greatly enlarged; c, the full-grown larva, slightly enlarged; d, the pupa, slightly enlarged; e, the pupa in its cocoon on the inner surface of bark, reduced about one-half; f, moth on bark and empty pupa skin from which it emerged, about natural size. (Simpson, Bull 151, Div. of Entomology, U. S. Dept. of Agr.)

⚜⚜⚜

I would not do without The Fruit-Grower. It is the best paper I ever read. Will send another block of five subscribers in a short time.—James Sellers, White Cottage, Pa.

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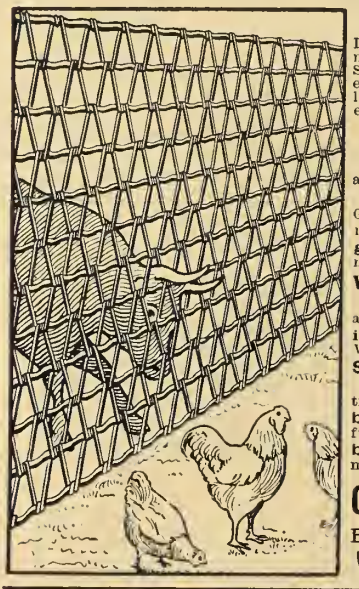

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Things To Know About PAGE FENCE Horizontal wires, double strength, high-carbon, spring steel. More than twice as strong as common fence wire of same size. Top wire No. 7 and second wire No. 9 will support the weight of 30 men. Think of it! By actual test our No. 7 wire has 3560 pounds strength. Common fence wire No 7 has only 1640 pounds strength, giving wire used in the construction of **Page Fence** 1920 pounds strength over common wire. Horizontal wires in the

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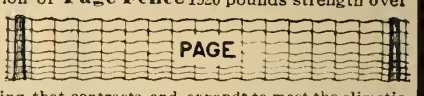

coiled lengthwise, making a continuous coil spring that contracts and expands to meet the climatic conditions and hugs uneven ground, insuring a taut, well-stretched fence at all times. Two top wires woven separately and joined to balance of fence with loop, which makes our famous **Page Sliding Top.** Heavy pressure from stock rubbing or people climbing over Page Fence is taken up by two top wires without bearing on remainder of fence, which protects the cross wires of the fence.

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HAVE A SURPLUS OF
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Also the following varieties of Seedlings, well graded:

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All styles of Root Grafts made to order.
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Seedlings
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Protecting Originators of Fruits.

Editor Western Fruit-Grower:

In an editorial under the heading, "Protection for the Originators of New Fruits," in your last September number you make the statement that "according to American Gardening I am giving my time to the breeding of new fruits at the sacrifice of any pecuniary reward." Possibly this statement is an inference from the following extract from the same paper quoted by you in said editorial: "The story of Mr. Moore's life is one of persistent and enthusiastic, but half thwarted endeavor. The man is utterly absorbed in his work. He willingly subjects himself to privations in order that he may indulge his one great passion, the creation of new and better varieties of fruits." This extract undoubtedly presents a true picture of myself in the past, but not of late years, which have been occupied in taking care of a vineyard.

The most of my experiments in the cross-fertilization of fruits were made prior to the year 1887. I have done little in that line of work since, but have had to take care of and test my productions in the meantime, which has not been remunerative. I have been disheartened by the lack of recompense for my labor and my former enthusiasm is gone forever. Philanthropy has been proclaimed as a motive for doing such work. That idea comes from shallow thinking. The free use of the name of a celebrated new variety in its sale enables the unscrupulous to deceive the public by means of a false label of that name attached to plants of common varieties. Millions of plants in the aggregate have thus been sold that were not true to name. I challenge anyone to refute this statement. It certainly is not satisfactory to me to know that the names of my productions are used in that way without power on my part to prevent it, because not vested with such exclusive rights to them as would enable me to do so. The humiliation of the originator of a new fruit is complete. He is absolutely without rights to it which the trade is bound to respect. I have sold for introduction the entire stock of but four varieties of fruit in the whole course of my life and the prices received for them were unremunerative. The fact is a new fruit seldom can be sold for introduction at any price approximating the cost of its origination by means of cross-fertilization and the raising of many resultant seedlings to fruition. The originator can, however, give it away if superior, or it may be stolen from him. As for the newspaper stories of the fancy prices received for new varieties they are mere canards designed as advertisements.

With regard to the Western New York Horticultural Society which is largely composed of nurserymen, I found the drawback to securing an introducer for a new fruit among the latter to be, no one wanted "to spend a thousand dollars or more to advertise it" in consequence of free competition. Here is the nurserymen's side of the case. There is nothing similar to a patent or copyright, no exclusive right of the originator to give his production a name, to give the plant, to disseminate and sell it under the name to be grown which he can assign to the introducer for the remuneration of the latter and himself and the protection of the public in the purchase of the genuine variety. The attention of the society has been called to the evil of re-naming old and new varieties, and disseminating them as new ones at high prices, but the society has not asked for legislation to prevent so doing. Just think of it! After a variety has become current coin as it were, anyone so disposed can re-name it and impose upon the public in that way with perfect impunity. It has been done times without number. The public has no more rights in this matter which must be respected than the originator of a new fruit. The society contains nurserymen and other horticulturists who favor giving exclusive rights to the producers of new fruits. The subject has often been stated by those on the program of the meetings. Why it has been passed by, the president, who announces the subject to be discussed by the members, can explain. The evil practices mentioned have brought great discredit upon upright men engaged in the nursery business and in other horticultural pursuits.

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At present to obtain redress for plants falsely labeled documentary proof of the varieties ordered is necessary, which is seldom kept; the seller must be financially responsible—often he is not—and the damages must be sufficient to pay the complainant for prosecution. An ounce of prevention is worth a pound of cure. To protect the public from imposition trademarking the names of new fruits has been tried, one result being that the disgruntled have cried monopoly! As well might they raise such a cry over numberless other trade marks for manufactured products. The so-called free system of introducing new fruit cannot endure, because it gives the free rein to human depravity.

JACOB MOORE.
Canandaigua, N. Y.

Description of Fruits by Nurserymen.

In a recent number of The Western Fruit-Grower a correspondent refers to the contradicting descriptions of fruits as given by different fruit catalogues.

Now, it is not expected of any nursery descriptive catalogue that anything more than the salient peculiarities of the fruit be noted, and it seems to be human nature to color the good qualities of a fruit rather highly where there is any reason for doing so. Also to minimize, or leave out entirely, the bad qualities. We see this in nearly all catalogues, and experience teaches us to take the description with a large "grain of salt" in self defense.

But perhaps the correspondent does not realize just how difficult—or impossible—it is to give a description of a fruit that will harmonize with truth in a single locality—oh, how much more so! one that is applicable to all localities.

Take, for example, any of the common red Japan plums. Taken at one stage, the one at which the are usually gathered, and one may say of the color that it has "an underground of greenish white with a red blush." Later on it is a solid deep red. At the first stage he will say it is "firm and juicy," at the last, "tender, melting and very juicy." He may say that the tree is "very productive"; but after-developed truth may inform him that the tree is stunted by borers or mangling of the roots or body by accident, thus causing unnaural fruitfulness.

Conditions of soil, cultivation, pruning, spraying, climate, selection of scion, cross pollenization, influence of scion upon stock and stock on scion, and probably other influences not yet understood, or even suspected, cause variations in fruit that are simply astounding.

In one instance an apple may be round and smooth, in another oblong and warty, or dull red, and light red, russeted or without russet, large cored or small cored, with many seeds or a lack of seeds, fine flavored or dull and insipid, with a disposition to drop early or to hang, to keep well or poorly, and so on. You know that some claim that a Missouri soil and climate develop a Ben Davis that is good to eat.

The best and most painstaking authorities are often at sea when climate, soil, etc., play havoc with the peculiarities of a fruit.

I have in mind a row of Snyder blackberries in which on one bush the berries were all ripe, and in the next—with the same exposure and cultivation—the berries were all green. I have noticed that in two varieties—A and B—A bloomed first in one season and B bloomed first the next.

I have described an apple as "entirely free from russet," only to find the next year that russet covered a large share of the surface.

Some apples—as well as other fruits—are exquisite in flavor at a certain stage of ripeness, but if one happens to judge a few days earlier—or later—the quality score is different.

Now, let your correspondent take close notes of some new variety of apple in his orchard, each year for a period of five years, and at the end of that time let him compare his notes, and then and there have his picture taken. I will venture that to his natural looks will be added undisguised surprise—and perhaps disgust.

In my opinion the habit of the tree gives as good a clue to the identification of a variety as does the fruit itself. BENJ. BUCKMAN.
Farmingdale, Ill.

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Successful Strawberry Growing in Arkansas

The age of haphazard routinism, of traveling in ruts, is fast passing away, and is being supplanted by scientific research and investigation followed by rational development in all things pertaining to horticulture, and especially to the growing of fine strawberries. Each year we hear the question of overproduction discussed; and the same answer is given: "Yes, of poor, inferior and slovenly handled fruit; of large, fine, ripe fruit, carefully picked and well handled, no."

It is purely a question of the survival of the fittest. The same laws, in the main, gove n promotion and development in the animal and vegetable kingdoms. No up-to-date, scientific stock-breeder would, for a moment, entertain a thought of producing a fine, high grade animal from scrub or accidentally-bred parentage. No more does the wide-awake, intelligent strawberry grower expect to produce large crops of elegant berries from plants taken from old fruiting beds, or from new beds of low fruiting power, or known pollen exhaustion; nor to grow them in fields too poor to grow corn or potatoes in a paying crop The person who contemplates growing a fine field, or crop, of this queen of fruits—and it is utterly useless and unprofitable to grow any other—must commence one year before he begins—the planting of his field.

This is absolutely necessary for two reasons—first, he must grow his own plants in order to have plenty of good well grown plants. Secure the best plants obtainable, of such varieties as he wishes to plant, in such numbers as will be required to grow enough good plants. This is necessary, that he may develop these plants by all the means at his command, such as rich soil, good and continuous cultivation; the removal of all blossom buds, and limiting the production of plants to the capacity of the mother plants and the land, to produce good ones. Second, he will need this advance year to prepare his land for the reception of his plants the following spring. If old, worn land is to be used it must have all exhausted elements restored. Deep plowing, not four to six inches, but eight to twelve, and better still, if this had been done the preceding winter, so as to have the double benefit of freezing to pulverize this new earth and to destroy all worms wintering in the ground. Also the rains to make soluble such elements of plant food as might have remained in the lower stratum of earth, previously unbroken. If winter plowed, harrow down early in the spring and repeat at proper intervals until May or first of June, when it should be stirred and sowed or drilled in cow peas. If drilled in rows about thirty inches apart they should be well cultivated until branching stops it. When this crop is sufficiently mature to show some ripe peas, cut the vines thoroughly with disc cutter, if land is free from stones; otherwise chain vines under and plow deep enough to cover well. These vines will promptly rot and supply a generous amount of humus, also nitrogen, phosphoric acid and potash in limited quantities. This can now be left undisturbed until early spring, or latter part of winter, when it should be thoroughly plowed and immediately harrowed both ways. If this land had been cropped many years in wheat or potatoes it would probably be deficient in phosphoric acid and potash, which could be supplied, if deemed best, by sowing from two to five hundred pounds of mixed dissolved bone and muriate of potash, or the latter with rock phosphate, to the acre. If the ground is very loose it should be repeatedly harrowed and rolled to get it more solid. Some land might be the better for a light or shallow stirring or cultivating to prepare it for planting. This would never be necessary if ground contained a proper amount of humus.

Now it is springtime, land in perfect condition. Plants should now be ready and they should be secured by taking up the entire row, selecting only perfect plants; that is, those of a uniform size and fine roots. Remove all dead leaves and old runners, straighten roots carefully and place in bunches in the hand, with crowns placed even, and tie; dip the roots in water and place flat in suitable boxes, Place in a cool, shady place until wanted.

Now for the planting. Much will depend on the varieties. The free runner-makers, like Crescent, Senator Dunlap, Excelsior or Michel's Early, should be planted in rows four feet apart, the same as all others, but not nearer than thirty inches to three feet apart in the row. Others, like Bubach, may be safely planted nearer, say twenty inches to two feet. If you want all your plants to grow and not be brushed out by a light touch of the harrow or cultivator use a dibble. Have it made of steel, eight inches long in blade, four inches wide at widest place, and five-eighths of an inch thick at upper center, or a little above the center, drawn to edge and a rounded point—something the shape of a large mason's trowel; shank about six inches long; wood handle, five or six inches long, put on like an augur handle, and set in line with the blade. Cut plant roots to an even length of not more than four inches. Thrust the dibble into the ground vertically—do not lean it either way—press it lightly sidewise, so as to widen the slit-like opening, insert the plant taken from a bucket with som water in it, and firm, by inserting the dibble about two inches from first hole, the point directed toward the bottom of first hole and press firmly; knock some dirt into last hole and go on. This is a little tedious in the telling, but not in the doing. Cultivate just as soon as done planting, unless rain should interfere, with light, narrow harrow, or very narrow-toothed cultivator. Repeat as often as necessary to keep ground clean and surface loose to conserve moisture. Hoe when needed, and it is always needed, and lots of it. Keep off all blossom buds entirely; restrict growth by removing weak and superfluous runners, so as to secure the desired row. Allow no plants nearer each other than four to six inches. Cut off all runners as soon as first-class plants have been placed at the proper distance to make the row two feet wide. Do not allow plants to grow over entire space between rows and drag them around with the cultivator or plow, nor leave them for plants in spring; it would leave a ragged edged row with some plants partly dug up and a lot of loose dirt to foul the berries later. Avoid also the advice of a recent writer to let the plants all grow as thick as they wanted to and then trim the rows by plowing up the excess in width; to fashion the row just as well try to make poetry of a prose column with a pair of scissors. Don't fear the amount of labor necessary to make the model row, as described; it will win in picking time.

In this part of the country we have much land that is ideal "berry land;" a good soil, in natural states, is filled with fine broken rock, and the winter rains leave a fine surface covering of stone, which keeps berries clean. Our plants are not injured by freezing, hence do not need mulching, except it be on level block land, to protect the berries. Those who live in northern latitudes, or on alluvial or sandy soils, will need to mulch.

This ends the work until picking time, unless spring finds some weeds in your rows that would interfere with proper sun effect, or with picking. These should be removed as early as possible, before the plants bloom.

From the Field to the Consumer.

This is a part of strawberry work that puzzles all to a greater or less extent. If your beautiful, ripe, luscious berries could be handed into the hands of those who carry them to their homes or to fine hotels, it would rob the business of much of its perplexity. First is the package. Let the box be made of clean material and put together with such degree of care that it will look well and not go to pieces in the hands of the picker or in transit. The crates require like care. Let them be properly put together, sides always even with top of ends, well nailed, using care not to let points of nails protrude so as to tear the hands when handling them. Never nail covers with anything larger than two-penny nails and have covers put on straight with sides. Keep them clean and do not cover

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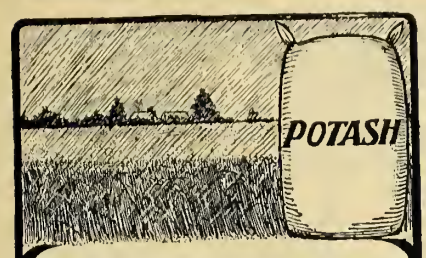

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Picking Berries.

Here's our greatest source of anxiety and loss. Not all persons are strictly honest, and a rotten, green or over-ripe berry fills the box just as a good one. Good pay and rigid surveillance of pickers in the field by a kind yet firm persons is our safest method. Encourage honest rivalry among the pickers. Have boxes well filled, and just as well "topped" as possible without selecting large berries for the purpose. Put them in the bottom, if specially anywhere. Never allow a Leslie box to be grasped cross-wise with thumb and fingers in removing from the hand carriers or trays; it will mash the berries and then they will sink more in the box. Berries should be pinched off and neither squeezed nor pulled—two very hard things to guard against. Warn all the first day to be very careful not to tramp or in any way damage the plants; their own interest should aid in this matter if they expect to continue to pick in the field. If they will not regard this warning let them go.

Crating.

Have this begun as soon as berries begin to reach the shed. Handle with care and carefully place in the crate. Never allow one scanty-filled box to go into a crate. Keep some handy to fill up with. If boxes fit crate well have top boxes filled so the cover will touch, but not press the berries. Have crate stand on a solid place to nail covers on. If leaves of any kind are used over berries, a matter of taste, do not let them protrude from under cover and give crate a ragged careless look. Handle your full crates as carefully as possible; the express folk will knock them around bad enough.

Care of Field After Picking.

As soon as a first-year field is picked, if the ground is wet enough, go in with a light steel barshare plow and a good steady horse and "bar them off." As to how narrow a row you shall leave is to be determined to some extent by conditions; if they are fine plant-makers and have evinced the strength of soil by making a strong growth the first season, they can be run as near six inches as possible. If Bubach, or any shy plant-makers, leave eight inches, unless a very vigorous plant growth had been made the previous year. The furrows should cover all weeds or vines between the rows, or furrows. Let the patch lie, giving time for the weeds, and turned under plants, to rot; say two to four weeks, when the middles should be cultivated down and the rows properly cut out and cleaned. Cut out as many of the old plants as possible to leave a uniform row of good, healthy plants, about like they were set one year before. In case of the shy plant-makers leave a more generous hill or row. Hereafter give same care and cultivation as first year. When this patch fruits the second time it is done. So am I.

If this brief description of better methods than many persons adopt shall cause some to give it attention, and to guide the beginner in fair lines; or if it shall call forth such comment or criticism as to accomplish these desired ends, I am satisfied.

J. W. M'CRACKEN.

Sulphur Springs, Ark.

Duscussed Strawberry Growing.

The St. Joseph (Mo.) Horticultural Society discussed strawberry growing at its February meeting, which was one of the best the society has held in years. The attendance was good and the discussion interesting.

L. J. Hartman said he preferred a south slope for early strawberries and a north slope for late ones. He wants a rich soil; if not rich enough, use barnyard manure or plow a crop of clover under. Plow this under in September and let the land lie until next spring, when it should be harrowed and dragged down. Set the plants in firm soil.

The discussion as to soils brought out a difference of opinion, those growers having the famous loess soils of the Missouri river hills stating that they could not fertilize for strawberries to any extent. Mr. Bond, however, had soil which was already rich, and yet he said the best crop of berries he ever raised was on a piece of land containing about one-third of an acre, on which he had fed hogs for eight years. At the end of that time he raked up the corncobs, of which there were several wagon loads, and burned them. The land was planted to potatoes one year and the next season was set in strawberries. From this third of an acre he sold the best crop he ever grew; in four crops the plants yielded $503.75 worth of fruit of excellent quality. Attention was called to the fact that the ashes from the corncobs had helped to make the soil more evenly balanced for strawberries, supplying quantities of potash, which were needed.

Most of the growers preferred fall plowing for strawberries, the land to be harrowed the next spring, then dragged until the soil was firm. Mr. Cook used a line to mark his rows, and sets plants with a spade. Mr. Bond uses this same method, but said he turned the spade with the flat side parallel with the line; if turned the other way the roots of the plant will be fanshaped and will extend out into the alleyway, where the cultivator will catch them. Mr. Turner uses a wheelbarrow to mark for his rows; he sets three stakes, pushes the wheelbarrow towards them, and the line can then be made straight. Mr. Ruegsegger uses a home-made marker which marks three rows at a time.

Mr. Bond was the only member present who grows strawberries in the hedge row. He plants 30 inches apart in row, with rows 30 inches apart; each plant is allowed to make two additional plants, which are placed along in the row. Then all other plants are kept off. "One thing I am sure of," said Mr. Bond, "and that is that a large weed or a large bunch of grass should never be pulled from a strawberry bed."

"How will you get them out?" asked a member.

"Pull them while they are small," was the reply, and the member sat down.

The discussion of varieties developed the fact that most of the members found that their very early berries bring the best prices. Of course, they come into competition with th berries shipped from the south, but the people will pay more for the fresh home-grown fruit. The mid-season berries rule lower in price, and the average for the season is brought up by the late varieties, which find a market not so plentifully supplied.

Prospects for strawberries were reported good. The members received proposals for berry-box material, but deferred action until some of the southern manufacturers have time to report further.

A committee, composed of James M. Irvine, D. A. Turner and L. C. Wilson, was appointed to wait upon the county court and ask for an appropriation of not less than $100, for premiums for fruit and agricultural exhibits. If this is secured, the society will hold an exhibit in connection with each monthly meeting. In preparing the programs for the various meetings the ladies will be given a place, and it is hoped to make the meetings during the coming summer of great interest to the members. The next meeting will be held at the court house in St. Joseph Saturday, March 25, at 10 a, m.

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Are you looking for something extra in Strawberry, Blackberry, Red and Black Raspberry Plants, Grape Vines, etc.? In all leading varieties, as well as new varieties. Gnaranteed true to name and free from disease. Send for Free Catalog. E. MAUDLIN, Bridgman, Mich. Box 5.

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Millions of them. Grown under special care, with the view of producing plants of the highest quality that will yield abundant crops of large fine berries. These are the kind of plants that you get if you buy of W. W. THOMAS, The Strawberry Plant Man, Anna, Ill.

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Millions of first-class strawberry plants at prices that will make you buy. Large stock of Fruit Trees, Grape Vines, Currants, Gooseberries, Asparagus, etc., also fine stock of Everblooming Roses. Get our prices before ordering elsewhere and you will save money. Write for Catalogue and prices today.

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$180 PROFIT FROM 100 SMALL PLANTS

As a real money maker for growers of vegetables in the south and southwest for the northern market, nothing compares with the wonderful

"CRIMSON WINTER RHUBARB"

The only rhubarb that grows in winter when the demand is greatest and prices highest. One man made $180 net from 100 small plants. We saw 30 lbs. of stalks readily salable at 10c per lb. taken from 2 large plants. You can grow 1500 plants per acre and make a very large profit with little labor. Even for home consumption it will pay you to give this wonderful creation a fair trial. Strong roots by mail $2.50 doz.; $15 per 100 by exp. Illustrated folder *free*. Write for it today.

F. GILMAN TAYLOR, Box 33, Glendale, Calif.

60 Varieties Strawberry Plants

The best for the least money. Send postal card today for my 1905 catalogue of Small Fruit Plants.

H. W. HENRY, La Porte, Ind.

50,000 HAYMAKER New Money-Making Raspberry. Net profit $400.00 per acre. Finest catalog. W. N. Scarff, New Carlisle, O.

Pruning Fruit Trees

Readers of The Fruit-Grower will remember the frequent references which have been made in these columns to the orchards of A. W. Poole, Ozark, Ark., and his method of handling them. Mr. Poole, after reading our February number, sends us the following:

"I am not a professor of any college, or experiment station, either horticultural or agricultural, but I have had twenty-four years' actual experience in peach and apple-growing on the same farm, and have spent i ntime, labor and money quite a sum in experimenting with the peach and apple tree in various ways.

"I have been reading horticultural papers for the past twenty-five years, have been a contributor to some of them, more or less, for the past ten years, and I have made assertions that I know a great many readers thought unreasonable, and make another now. I know that I understand the pruning and training of the peach and apple tree, as well as, if not better than, any man in America; especially all those I have read after, except one, and that is Professor Charles A. Keffer, of the Pennsylvania Experiment Station. His paper, in the February issue of The Fruit-Grower, on training and pruning the apple and peach tree, also pruning neglected orchards, is the best paper I have ever seen in print. While we differ in the beginning (first year after setting, especially of the peach tree) the results in after years are one and the same.

"If the fruit growers, especially peach-growers, of the United States, who have not learned his system of pruning, by experience or otherwise, has it in book form, so they could and would study it until understood thoroughly, then apply to the neglected trees (say nothing of the others) it would be the saving of untold millions. The neglect of his system of pruning and no pruning at all will cause the peach-growers of Texas and Arkansas alone the loss of $5,000,000 in the next six or seven years. Proper pruning not only causes the fruit to be larger, more even-sized, higher color, tree stand drouth better, less expense to thin and pick fruit, tree not so apt to break down, fruit near the same place when old, as when young, more apt to have a crop annually, but it will cause the tree to live and be profitable two or three times as long as it would without this pruning. And best of all, the tree will have as fine fruit at thirty years old as it had the first crop without any fertilizer, if ground is not washed or leached away.

I have often wondered why it was that no one had caught on to our mode of pruning (as I will speak of it in future), by actual experience. If so why he did not give it to the public. I have given illustrated lectures at our horticultural meetings, various times; have given field lectures, read a paper at our last meeting held at Rogers, Ark., in January, and have written many articles for the papers. In all these letters, papers and lectures I have used all the language in my power to compel fruit-growers t see the great and lasting benefits of our mode of handling trees. Yet I have not seen a single commercial grower or read a paper written by any one but what if they did practice pruning or recommend any, that the results of their methods would force fruit higher up, and further out each year as tree grew older. Having no fruit on main branches near trunk of tree where a great portion should be and will be with our mode of pruning applied annually. Further, under their mode, the trees will become unprofitable, if not dead, at the time they should be in the prime of life. As to sunscald I have claimed in the past, and do so at this writing, that all parts of a tree that are exposed to the sun from early spring through the season (like the skin on the human being), will not scald, but all parts shaded until midsummer, and then exposed to the hot sun, will blister.

Branches bending under the weight of their fruit or splitting off, or parts of tree that have been shaded in the early part of season and then exposed to sunlight from any cause, are the greatest cause of trees sunscalding. Hence the great necessity of handling the tree so as to avoid such changes. This our mode of pruning will do, and is another great advantage I claim for it.

The Brown Rot of the Peach.—I will repeat again I am no professor, but with my twenty-four years' experience I do claim to have a practical knowledge of a great many things and one of them (which few will believe), is that 90 per cent of peaches that rot at ripening time, or on the road to market, have been injured by the sting of the peach curculio. As a proof of this examine them as soon as the fruit rot appears with strong magnifying glass. Nine out of ten will show the effect of the curculio, either by egg puncture or small worm.

One season just as my Alexanders were ready for market there came a small shower of hail that cut the skin of a great many of the ripest peaches. Inside of three days all were rotten. The hail also killed some leaves and some of the smaller twigs, yet the next season (with no precaution or preventive, except hogs having the run of the orchard keeping all fruit cleaned up), I had no rot.

In 1902 one of my near neighbors having the same variety, same kind of soil and other conditions being the same, lost over half of his fruit by rot. I lost none. I know he had thousands of curculio in his orchard. I had none to speak of.

It is a well-known fact that when a peach is ripe (especially in hot weather), if the skin or peel is punctured or bruised by any means and water or even dew gets in the puncture it will rot. When the rot once gets a good start it will soon become epidemic and cleans up all on the tree, especially those punctured in any way let it be ever so small a puncture.

I am positive that one-quarter to three-quarters of the Elbertas in this section were stung by the curculio in 1904, and it being very rainy, they caused the most of the loss suffered. The heavier the foliage is on a tree and the less sunshine we have the more Mr. Curculio will work. He will work night and day in dense shade or cloudy weather, but will not work in the hot sun, hence the necessity of having top of tree open so as to have plenty of sun and light. The lack of heavy foliage on thin soils is one of the reasons peaches are not as subject to rot as on rich soils.

In conclusion I will say, one of the best preventives against the rot of the peach at ripening time is to rid young orchard of the curculio. To do this you must keep all fruit that drops off from the time they shed bloom, as long as you have fruit. Feed to hogs and what they will not eat, burn. Gather all rotten fruit that remain on tree as soon as leaves shed. Pigs given the run of the orchard, picking up what they will not eat, is the best and cheapest way to do this work, as it is not safe to let fruit lie on ground exceeding three to five days.

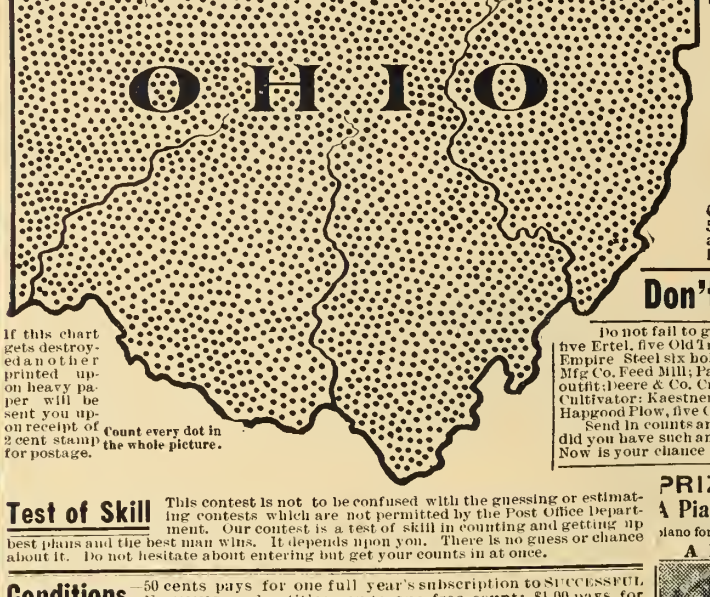
In further conclusion, 1905 will be an excellent year to practice or follow our instructions, as a great many will have no peaches. If you have the February issue of The Fruit-Grower (if not, get one by some means), turn to page 5, study figures 1, 2 and 3, and the instructions given by Prof. Keffer until you get the idea aimed at in your head, then go to your peach trees and apply it, especially if old and have been neglected in the past and you will always be proud of the results. Do not do this heavy pruning until leaves start; from that on until leaves are fully grown.

Ozark, Ark. A. W. POOLE.

⚜ ⚜ ⚜

I have an orchard, planted 23 years, on a hillside. I haul straw and put it under the trees in January to a depth of four inches; let it rot there. It keeps the roots moist and makes the ground loose, and if apples fall they are not bruised. I cannot see any difference during the last ten years between this and cultivated orchards. My advice is to not cultivate hillside orchards, or it will soon be worthless.—Marion Gregory, Huron, Ind.

BIG PRIZES FREE! TWO PIANOS! CASH!



If this chart gets destroyed another printed upon heavy paper will be sent you upon receipt of 2 cent stamp for postage.

Count every dot in the whole picture.

GASOLINE ENGINES, INCUBATORS, CREAM SEPARATORS, BUGGIES, BONE CUTTERS, ETC.

FREE! If You Can Tell How Many Dots in Ohio ?

IF YOU CAN COUNT AND PLAN YOU CAN WIN!

SUCCESSFUL FARMING will give to those who can count the dots in Ohio correctly or nearest correctly, the following list of prizes: **CAN YOU DO IT?**

TWO ELEGANT PIANOS, one to a lady and one to a gentleman.
2nd. AN ELEGANT CABINET GRAND SIX OCTAVE ORGAN.
3rd. $150 CASH. 4th, $100 CASH. 5th, $50 CASH.
6th. WEBER GASOLINE ENGINE.
7th. DeLAVAL CREAM SEPARATOR.
8th. ELEGANT ELKHART TOP BUGGY.
9th and 10th. EACH A 100 or 150 EGG INCUBATOR.
11th. EMPIRE SIX-HOLE STEEL RANGE.
12th. F. W. MANN BONE CUTTER.
NEXT 20, $5.00 EACH. NEXT 25, $2.00 EACH.

CONDITIONS: Counts must be accompanied by subscription. 50c pays for one year and one count. $1.00 pays for two years and three counts. You get $50 extra if you have three counts. It will pay you to have three. See conditions below.

Don't Delay! If you want a Piano or other Prizes free, send your counts at once. **Win! Win!**

Do not fail to get counts in at once. Our complete list of prizes contains six pianos; five Ertel, five Old Trusty and five Snre Hatch Incnbators; five Galloway harrow carts; five Empire Steel six hole ranges: Hoover-Front Potato Digger; Smith Manure Spreader, Star Mfg Co. Feed Mill; Parlin Orendorff Corn Planters; Osgood Scales; a $175 DeLoach Saw mill outfit; Deere & Co. Cultivator; an Electric Handy Wagon; Campbell Fanning Mill; Tower Cultivator; Kaestner Feed Grinder, Milne Stump Puller; Stearnes' Bone Cutter; Carriages; Hapgood Plow, five C.A.S. Farm Forges, Wilson Bone Cutter, Elkhart Driving Harness, etc.

Send in counts and subscription as above and get our complete premium offer. Never did you have such an opportunity before. Don't delay, you want some of these premiums. Now is your chance

Test of Skill This contest is not to be confused with the guessing or estimating contests which are not permitted by the Post Office Department. Our contest is a test of skill in counting and getting up best plans and the best man wins. It depends upon you. There is no guess or chance about it. Do not hesitate about entering but get your counts in at once.

Conditions—50 cents pays for one full year's subscription to SUCCESSFUL FARMING, and entitles you to one free count; $1.00 pays for two years and entitles you to three counts and makes you eligible for the $50.00 prizes given to winners of 1st prizes if they have three counts. See below.

$50 Prizes—We believe everybody should have three counts so they can have one each side of what they think is correct to be more sure to hit it. To encourage this we will give $50.00 extra to winners of 1st prizes if they have three counts. Remember if you have one count you get 1st prize only, but if you have three counts you get $50 extra.

Awards will be made as follows—The person giving correct or nearest correct count will get first prize. Next nearest correct, second prize, etc, In case of a tie for any prize it will be awarded to the person giving best plan for counting the dots. State whether you enter ladies' or gents' contest, as one piano goes to lady sending best count or plan, the other to gentleman sending best count or plan.

Time Prize—We feel early counters should be rewarded and will give $50 to person sending best count or plan by Mar. 31. If you send best count or plan before Mar. 31, you get $50 extra.

Judges—The awarding of prizes will be wholly in the hands of disinterested judges. We have chosen bankers, ministers, public officials, etc., to act as judges in our contests. Ex-Governors, Mayors, Treasurers, etc., have acted as judges. We are bound our contests must be absolutely fair.

Our Financial Responsibility—As to whether we are abundantly able to do as we say, we are glad to refer to Des Moines Savings Bank and Central State Bank. Our offer will be carried out to the letter.

In the event more than one person should submit the same plan and this was considered the best plan by the judges, each person so tieing will be asked to tell in 50 words how best to improve Successful Farming. The one making best suggestions gets first prize, next best next, etc Understand this is only in case of tie in plan, which is not at all likely.

Nobody connected with our paper will be allowed to compete. Contest closes April 30, but get your counts in at once. See about time prize above. Any body having three counts entered may enter additional counts at 25 cents each. Be careful to give your plan of counting, as the best plan used will decide all ties.

Publisher SUCCESSFUL FARMNG, 317 Plum St., Des Moines, Iowa,
I enclose $.....for subscription to **Successful Farming**, and I wish to enter the.....(write ladies' or gents') Contest. If $1.00 is paid send three counts; if more than $1.00 send one additional count for each 50c over $1.00; if only 50c is paid send **only one** count. The extra $50.00 go only to those having **Three** or more counts entered.

My Count is: (1).....(2).....(3).....

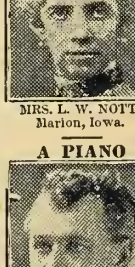
Name ..... **P. O**..... **State**.....

Remarks: My plan of counting is .....

PRIZE WINNERS IN PAST CONTESTS

A Piano for $1.00. Surely people may enter your contests knowing that they will receive fair treatment. How glad I was to win a piano for so small an amount and wholly unexpected. The paper alone is worth all I paid. MRS. L. W. NOTT, Marion, Ia.

A PIANO

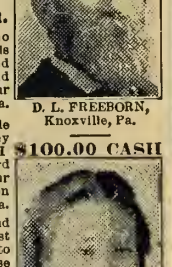


MRS. L. W. NOTT, Marion, Iowa.

A Piano for Illinois. An Elegant Piano for a Dollar! That is what I got and anybody that thinks your prizes are not awarded fairly don't know. There can be no favorites or I would not have won. MIRA E. FURSMAN, Panola, Ill.

A Piano for Pennsylvania. Easiest way I ever saw to get a piano and you people are surely fair. Friends laughed at me and said friends received the prizes. Now they are sorry they did not enter. Will never be without your paper. D. L. FREEBORN, Knoxville, Pa.

A PIANO



D. L. FREEBORN, Knoxville, Pa.

He Won a Piano. Refer people to me if they want to know whether you are honest. I got a piano for a prize and never heard of you until I answered your ad. Your paper is worth twice the subscription price. W. C. ELLIOTT, Audubon, Ia.

A PIANO

W. C. ELLIOTT, Audubon, Ia.

$100.00 Prize. I got my $100 and it was the easiest I ever earned. The dots are hard to count but I know the prizes go to those who win them fairly. AMY R. BARNES, Van Horne, Ia.

$100.00 CASH

AMY R. BARNES, Vau Horne, Ia.

Won $350 Cash. To Whom It May Concern: I won grand prize of $350.00 Cash in last contest. I was much surprised. I want to vouch as to Successful Farming's fairness to any and everybody. JOHN A. GOODWIN, Akron, Ohio.

$50.00 CASH

EUGENIE FOURNIER, Matane, Quebec.

$50.00 for Canada. Way up here I n Canoda I won $50. Never knew there was such a paper until I answered ad, Now I will never be without it again. MISS E. FOURNIER, Matane, Quebec.

$50.00 NEWTON RARICK, Ligonier, Indiana.

Others Who Won: $100—Eva I. Buckner Fredonia, Kan. $25.00—Clara Albers, 1209, Wal., Cincinnati, O. $100.00—C. S. Wyman, Vinton, Ia. $50.00—S. Irving Stoyer, 225 E. Balt., Baltimore, Md. $100.00—E. M. Hall, Montrose, Mo. $25.00

$50.00 CASH

NEWTON RARICK, Ligonier, Ind.

Address all letters to SUCCESSFUL FARMING, 317 Plum St., Des Moines, Iowa.

Successful Use of Oils in the Cure of Tumor—What the Rev. G. B. Crinklaw Says About It.

Rudd, Iowa, May 23, 1904

Dr. D. M. Bye Co., Indianapolis, Ind.

Gentlemen—In answer to your inclosed letter I am glad to report success in using your treatment for tumors of the rectum. I began your treatment on Nov. 4, 1903. In one month the tumors were removed, and I have been well ever since, except that I have some trouble with constipation. Yours thankfully.

GEORGE B. CRINKLAW.

All forms of cancer and tumor, internal and external, cured by soothing, balmy oil, and without pain or disfigurement. No experiment, but successfully used ten years. Write to the Home Office of the Originator for free book—Dr. D. M. Bye Co., Drawer 506, Dept. 65, Indianapolis, Ind.

Orchard Musings.

To be a successful orchardist one must become familiar with the trees growing in his orchard; not a passing city acquaintance, but a hearty, old-fashioned country acquaintance, knowing them as one knows his neighbors, calling them by their given names when he meets them. Thus, Mr. Ben Davis, Miss Maiden Blush, Miss Early arvest, Brother Jonathan, etc. He should know them just as country neighbors who have adjoining farms know their good qualities and their faults as well, to have real human sympathy with them when they are overtaken by misfortunes, as storms or hail or drouth, and be ready to minister relief in their distresses; when disease or insect foes attack them, apply effective remedies.

If you thus hold close friendly relations with the trees in your orchard you will easily obtain the very best results possible under existing conditions. While your trees cannot in articulate speech thank you for your gentle ministrations they do somehow realize your presence and as you pass near them in spring or summer, waving branches and rustling leaves show how glad they are that you visit them and when the times of fruitage come their waving welcome often loosens from their branches a shower of fruit all crimson with blushes as it falls into your basket and they rejoice with you because the harvest time gives them opportunity to repay your generous care.

Many a time as we have rambled among our trees have we heard a faint cry for help; they have held out their branches wan with yellowed, fading foliage plainly telling me that a nasty grub is gnawing at their vitals, or a swarm of bacteria is poisoning the fountains of their life, humane sympathy born of a love for Nature is never deaf to these calls for help.

We have had trees to sorrowfully reproach us by saying, "See, I have made only an inch of new growth this whole year, and the fruit I have produced is so small, and insipid that I am ashamed. I must be growing old; you no longer love me, and tell me how delicious is the fruit I produce." This bitter but unintentional reproach made me think. The trouble with that tree was, that it was starving, its roots had run out in every direction seeking food, but alas! finding none. I had been guilty of neglecting to provide the elements of nutrition to the soil and am justly reproached by the wail of a starving tree.

A. M. RAGLAND.

Pilot Point, Texas.

Three Crops from Hotbeds.

In growing early vegetables under glass it is important that the soil be pushed to its utmost capacity, and as many crops as possible should be grown. Among the gardeners in the vicinity of St. Joseph, Mueller Bros. are among the most successful. These gentlemen get three crops from one hotbed, which is certainly intensive culture. Early in the season, one or two hotbeds are sown to lettuce. These beds are used as seed beds for a number of other hotbeds. When the plants are large enough to transplant, they are transplanted into other hotbeds, which have been made ready, the plants being set far enough apart to permit each to reach its highest development.

While this crop of lettuce is being grown to maturity another seedbed is made in one of the hotbeds, lettuce again being sown. The first crop is pushed along as rapidly as possible, and by the time it is marketed the plants of the second sowing are large enough to transplant, and there is still enough heat in all the beds to grow another crop. The second planting of lettuce is transplanted into the beds, and at the same time a hill of cucumbers is planted in the center of each bed. As this crop of lettuce becomes large enough to market, the plants nearest the hills of cucumbers are pulled first, giving the cucumbers more room, and in this way the two crops do not interfere.

When all the lettuce from a bed, or "sash," is sold, the soil is all drawn up to the cucumber plants, water is applied liberally, and the cucumber plants make a rapid growth. At this time the heat from the manure has been pretty well exhausted, but the hotbeds then serve as coldframes. The days are getting warmer by this time, and the sash can often be removed during the middle of the day. As soon as warm weather is on in earnest the sash and frames are removed entirely and where the hotbeds were are simply hills of cucumbers, and the vines are growing nicely. In a short time they completely cover the ground.

Cucumbers which are grown in this way are on the market almost as soon as the plants would be appearing above the soil, where planted outside. Every year, long before outdoor cucumbers are on the market, Mueller Bros. are marketing them every day, and when single cucumbers are retailing at 5 and 10 cents each they have sold bushels of them.

Where hotbeds are properly handled one should not be satisfied with a single crop from them. Try this plan and get two and three crops each season.

What After Elberta?

In his annual report, Prof. Mackintosh of the Alabama Experiment Station calls attention to the need of a variety of peaches to fill in the gap immediately following the Elberta crop. This need has been felt wherever the Elberta has been grown, and Prof. Mackintosh says that last year, in spite of the fact that the Alabama peach crop was a heavy one, peaches were shipped from Northern states into that state after the crop of Elbertas had been marketed. This demand for fruit could have been supplied by Alabama growers if they had some good variety which will fill in the gap after Elbertas have been sold. The Alabama station is growing a lot of seedlings, in an endeavor to find this variety. It is much needed everywhere, we believe.

Gladiolus for the Millions.

The accompanying illustration shows an armful of gladiolus spikes which were gathered at the farm of L. F. Dintelmann, Belleville, Ill. These spikes were grown by Arthur Cowee, the well-known gladiolus specialist of Berlin, N. Y. Mr. Cowee desired to make an exhibit at the St. Louis exposition and in order that he might not depend entirely on the flowers which were shipped from his New York farm, he grew a five-acre field of the flowers at the nursery of Mr. Dintelmann. This year Mr. Dintelmann has bulbs of gladiolus for sale, of the best strains which were grown

by Mr. Cowee. The accompanying illustration shows the quality of flowers produced, and Mr. Dintelmann writes that he is prepared to fill orders for this most popular flower. Gladioli can be so easily grown, and the newer strains are so rich and delicate in their coloring, that it would seem that any one who grows any flowers whatever should include the gladiolus. Those who saw Mr. Cowee's exhibit at St. Louis will want a lot of these flowers this summer.

Fruit-Growers' Texas Excursion in June

Special train excursion of Fruit and Truck Growers over the Cotton Belt Route to East Texas, the great fruit and truck district, at the height of the picking and shipping season, about the middle of June.

Object, to study fruit and truck conditions—at a time when ***results can be seen.*** Excursion will be headed by big growers, officers of several state horticultural societies, agricultural college experts, farm paper editors, etc.

Round trip will consume a little less than a week. An extremely low rate for the round trip will be made, three weeks return limit if desired. A great trip for fruit and truck growers. Write for an itinerary of trip and booklet on East Texas fruit and truck growing.

E. W. LaBEAUME

General Passenger and Ticket Agent of Cotton Belt Route

ST. LOUIS, MO.

E. W. LaBEAUME, G. P. & T. A.
St. Louis, Mo.

DEAR SIR:

Please mail me a copy of your FRUIT BOOKLET. I am interested in the East Texas country. Myself and.....other might be induced to join your June excursion.

My Name .....

My Town .....

County ..... State.....

FILL OUT, CUT OUT AND MAIL THIS COUPON TODAY

Maj. Holsinger's Department

Apples Free of Worms.

We are just winding up our second barrel of Northern Spy and have not found a worm in the lot. They are evidently northern apples—Michigan or New York. The grower has solved the question of the codling moth. If this is the case he should devote some attention to the scab, as the apples were more or less thus affected. At the Arkansas meeting a paper was read by Mr. I. Henthorn, of Bentenville, who seems to have solved the scab problem, and possibly the codling moth. It, to my mind, was the most satisfactory experiment, having two plates, side by side, from trees sprayed and unsprayed. Those sprayed were free of all imperfections, beautiful and large, while the unsprayed were hard-looking specimens. In answer to questions, it developed that "while the sprayed were a little better than the average of those sprayed, yet those shown not sprayed were very much better than the average, fully one-half being rejected as worthless, while the sprayed were practically all No. 1." It was an object lesson well worthy of seeing.

Peaches are badly injured. Elbertas all gone. Some other varieties badly injured.

Maj. Frank Holsinger: I have been reading your articles in The Fruit-Grower with a great deal of interest and have been especially interested in what you say regarding seedling peaches, as I have been investigating this subject for some time. The seedling trees bore fruit in this section of the country last year, but the budded peaches made a complete failure. I want to start some seedling trees from pure budded Elberta stock. Can you kindly tell me where I can get a few bushel of such seed? Any information you can give me will be very highly appreciated.—Sterling P. King, Anderson, Mo.

The foregoing is one of several communications received from time to time. It is with some hesitation that I again open up this subject, lest I am jumped on for heresy, in recommending the planting of seedling peaches. Now let me protest against such intention on my part, yet facts are facts, as many like Mr. King can testify. At our last Kansas Horticultural meeting I was reproved for the statement I made in giving my own personal experience in the matter of seedling Salways, although I protested against their planting, because of the many clings and in this mixing up of varieties of free and cling promiscuously. In Maryland, fifty years ago, there was a variety—"Nutmeg" quite small. but of most excellent quality. This was claimed by many as the only peach that would reproduce itself from seed. Now why should this be so? If this was true of the Nutmeg, wherein did it differ from other types? This caused me to let down the bars and to investigate. We live in an age of progression—"Prove all things and hold fast to that which is good." If this discussion will cause some to plant seedlings who cannot afford to plant budded varieties, thereby affording fruit for their families, good. If, by such planting we can by produce a new peach, better than the old types, and that is possible, good again. All the old varieties were seedlings once. They were simply an accident, or originated through the painstaking efforts of some one who had the will and ability to cut away from tradition and investigate for themselves. The Elberta was one of 10,000. It was worth the effort, as fully one-third of all the peaches now planted are of this variety. Of the many which I have produced, while all were good, there is only one that I consider worth propagating from; not that it is superior to the parent, but having the good quality of ripening two weeks earlier, it fills a gap between the Elberta and Salway. Who has had experience? Let there be light—turn it on.

At the February meeting of the Missouri Valley Horticultural Society, Miss Elsie Beard read the following paper on "Success in Poultry Raising:"

"Success in raising poultry means to hustle early and late, and not stay to talk theory. You can read poultry papers by the dozen and get some good ideas, we will admit, but after all this lesson must be learned by actual experience. If a person has a real love for the feathered race and is not afraid to work, and take any amount of pains, he will derive both pleasure and profit from his undertaking. Some seem to think that the hen that cannot scratch enough for herself and chicks is a very poor investment. One farmer was asked how much poultry he raised every year. 'Poultry,' he said, 'why, what is the use? I planted a lot of it last spring, and a few old hens I had scratched it all up.'

"A great many are not content to start to raise chicks in a small way and learn as they go. They must needs get in a hurry, and begin to count the dollars long before the harvest is ready. They fail to look after the small things connected with this enterprise.

"First, choose a good breed. Let it be one in good demand for market as well as fancy. See that the eggs used for incubating are from strong, well-matured stock and not from young unmatured pullets. Pick out well-shaped eggs. If you should choose incubators, then your troubles begin; if by the old way, trouble meets you half way and makes her demands. With the incubators, it is heat and moisture; with the old hen, it is a question how many lives will biddy be responsible for—from 10 to 12 chicks to 10,000 mites, along with several others of the same nationality. First, never set a hen in a henhouse, or any stationary place; instead use coops just large enough for one hen and her brood. Place this in a dry, clean spot far removed from the maddning crowd. After she has become accustomed to her coop a wire runway is placed in front of her that she may feed and get water at her own sweet will.

"Next, you must dust biddy with some good insect powder. Carry this in your pocket for fear you might forget, as this is very important. This coop is still the home of hen and chicks after hatching. She is left to herself for several days and then let go—straight to the garden, most generally.

"There comes the question what to feed biddy to help raise these chicks. This is the rock so many are stranded on. As a general thing corn chop, mixed up into a mess, is fed. You expect biddy to do the rest. If she has plenty of range, maybe she will; if not, look out. You will sure have indigestion among the flock. I find dry feed the best, with plenty of sharp grit always handy. The English feed mostly ground barley and oats.. They have raised the standard weight of our American breed—the Barred Plymouth Rock—by feeding bone and muscle-forming foods.

"See that the young chicks have clean, dry coops during the summer. I put them up on board platforms; an old broom is kept handy to sweep them out with every other morning.

"I have also raised brooder chicks. In some things I find less trouble and in others I find more, so it is hard to know just what s best. I find brooder chickens more subject to indigestion from need of more exercise than they get. They are freer of vermin. Brooder chickens are very dependent on the one that feeds and cares for them. There isn't a place about the farm that is too good for them. They would just as lief escort you to church as not. Keeping flies out of the house is not a circumstance compared with a brooder chicken. When I use my incubator I set a hen at the same time and let them all go with the hen. I started last spring with fifty hens. Eighteen of them were Barred Plymouth

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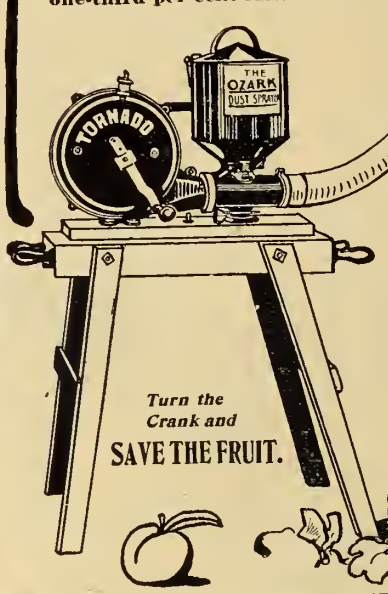

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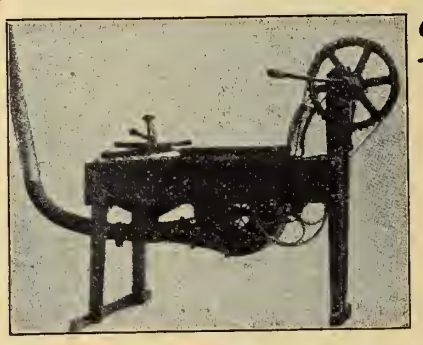

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Dallas, Texas. Jeff G. Jones, Mgr., Troupe, Texas

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WIRE $1.40 PER 100 LBS.

SMOOTH GALVANIZED WIRE put up 100 lbs. to a bale, gauges from 11 to 14 inclusive. Lengths running up to 250 ft. Per 100 lbs. $1.40. **Fence Staples,** all sizes, per 100 lbs. $2.00. **Wire Nails,** assorted in a keg, per 100 lbs. $1.70. **Barbed Wire,** per 100 lbs. $2.60. **Poultry Netting, Field Fence,** etc., at low prices. Ask for free catalogue No. 39, on merchandise of all kinds from Sheriffs and Receivers' sales.

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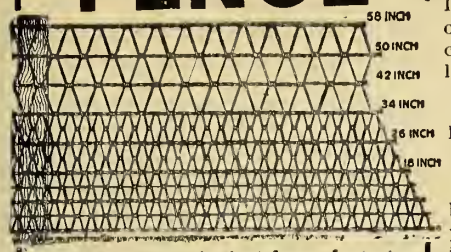

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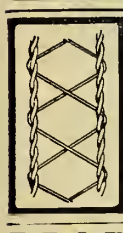

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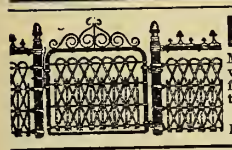

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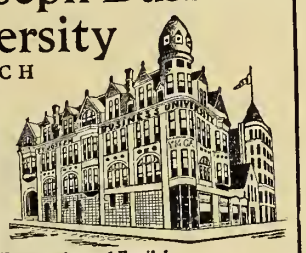

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American Made. Interchangeable Parts. For Vest Pocket or Ladies. Cut 1-3 size—4½ oz. 22 calibre—6 shot-rifled. Sample mailed **$2.50**
Address, **H. M. KOLB,**
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When writing to advertisers always mention The Fruit-Grower.

Rocks. These I penned to themselves, setting all of their eggs. The outside eggs were sent to market. From them we received $80. We raised 200 chickens and sold $30 worth. For home use there was no account kept. We all know there was plenty of fried chicken. I have a nice lot of young pullets and three dozen young cockerels that will go to market in a few days. I don't feel that I have made a grand success, by any means; neither do I think that I have failed. I will go into partnership with the old biddy when the warmer days come and see if we can improve on last year."

Prepare Ground for and Planting of Strawberries.

It is well to commence the summer before you plant to get the ground in proper condition. If the soil is lacking in humus a crop of cow peas plowed under would be beneficial to the land. When you cannot do this, stable manure plowed under will answer. This should be done in the fall for best results. While I prepare ground at all times and in different manners, as the s ason will permit, I find the best results from plowing under a liberal coating of manure in the fall, following the turning plow with a sub-soil plow. Do not harrow, but let land lie rough until spring. As soon as the land will work nicely replow and work thoroughly with harrow and smooth down with drag or roller. By sub-soiling you increase the depth of your soil and storing capacity for moisture.

By deepening your soil it will be more easily worked and will not suffer from excessive moisture or drouth, to say nothing of the immense benefit to the crop. If stable manure is not easily procured excellent results can be had from broadcasting ground bone just before planting, and working into the so l thoroughly. There is enough soluble matter in the bone to feed the plants the first season, and it will supply food for the second and third season. But where the ground is lacking in humus the ground bone will not add that as does the cow peas or stable manure. Manure, or ground bone, can either be applied after a crop of peas. I have also had good results from sowing rye on fall plowed land and .owing it under in the spring. This also answers as a cover crop for the winter.

It is advisable to plant as early in the spring as po.sible, for early set plants will grow off better and the loss of plants will be little or none. Therefore, as soon as ground is sufficiently dry in the spring I would prepare it. Be sure to work it until it is thoroughly pulverized and then pack the surface all you can with roller or drag.

I have better results from planting in firm soil than that which is very loose. I also find that the later in the spring the plants are set the better condition the ground should be in and the firmer the surface should be.

After the ground is thus prepared we mark it off both ways. The rows, the wide way, should be four feet apart, and the distance the narrow way depends on the variety grown. If it is a rank growing variety two to two and one-half feet will be close enough. If a shy plant maker, eighteen to twenty-four inches is the proper distance.

The best marker we have ever used, and we have tried several, is made by bolting a pair of straight shafts to a piece of timber, 2x4 inches and 12 feet long, and brace it well. We bore holes in the piece of timber every four, two, and one and one-half feet. These holes are in a slightly slanting way. In every four-foot hole we bolt a square iron rod about three feet long, sharpened at the lower end. Then when horse is hitched to shafts you have a device something like a rake, only the treeth slant back so as not to catch on obstructions, but slip over them. You are then ready to lay off your ground the wide way. By letting one tooth run in the last mark each time your rows will all be the same width. One boy and man can operate this and mark many acres in a day.

When ready to cross and mark the narrow way put in extra teeth in the distance you wish the rows. A mark thus made is not blotted out by the rains, but will show plainly even after a hard rain.

I always use a spade for planting—a man and boy working together. The man uses the spade and carries basket of plants on left arm and faces the way the rows run. The man with right foot forces the spade in the ground in a slightly sloping position, pushing the handle forward, which leaves an opening behind spade. The boy on the left of the row places the plant in the opening down to the bud, holding it in thus until the spade is removed, and the man with left foot presses soil firmly to plant.

A quick man can soon acquire considerable speed by making no unnecessary steps and letting each move accomplish some part of the work. Insist on having the roots of the plants put straight down and the soil pressed firmly to the plant.

Anna, Ill. W. W. THOMAS.

Comparative Returns from Sprayed and Unsprayed Orchards.

At the meeting of the Society for the Advancement of Horticultural Science in December, Prof. John Craig gave some figures from sprayed and unsprayed orchards in Wayne County, N. Y. A total of 173 orchards were examined; 66 of these had been sprayed, and 107 were unsprayed. The sprayed orchards contained 626 acres and the unsprayed orchards 673 acres. The average yield of the sprayed orchards was 280 barrels to the acre, that of the unsprayed .253. From the sprayed orchards were sold 8,430 barrels of fruit, at an average of $2.80 per barrel; from the unsprayed orchards were sold 6,365 barrels of fruit, at an average price of $1.80 per barrel. The total receipts from the sprayed orchards were $23,604, against $11,457 from the unsprayed, a difference of $12,147 in favor of the sprayed orchards. Prof. Craig says that two-thirds of the sprayed orchards were sprayed only once. This is one of the best reports showing the benefit of spraying which we have ever seen. It is not a report of tests made at the experiment stations, with a small block of trees, but is a report of the results of actual work by fruit-growers in their own orchards.

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Arguments for and Against the Fumigation of All Kinds of Nursery Stock Liable to Infestation by San Jose Scale.

At the late meeting of the Pennsylvania State Horticultural Association, Prof. H. A. Surface, economic zoologist of the department of agriculture of that state, read the following paper on the subject of fumigation of nursery stock:

an object to deadly fumes when confined within a closed space. The vital range between a tree and an insect attacking the same is so wide that the fumes may be made strong enough to kill the pest without injuring the tree or plant. It is found by many experiments that fumigation is the only effective means of killing the San Jose scale and certain other destructive insects when found upon nursery stock, and thus preventing their spread to orchards in which this stock is to be planted.

One may fumigate with carbon bisulphide or any other material that will produce deadly fumes, but the best material that is now known is hydrocyanic acid gas, generated by dropping cyanide of potassium into sulphuric acid diluted with water. The requirements in the state of Pennsylvania, and in fact in most of the states of the union, are that the cyanide must be of 98 per cent purity, the sulphuric acid must be 1.83 specific gravity, and the following amount must be used for each one hundred cubic feet of enclosed space:

One ounce (by weight) of cyanide of potassium.

Two ounces (by measure) of sulphuric acid.

Four ounces of water.

The sulphuric acid is to be poured into the water in an earthen or wooden vessel, and the cyanide is to be dropped in suddenly. Then the operator must escape from the room just as quickly as possible. It is best to have the proper amounts computed according to the size of the room, using the above formula for each one hundred cubic feet, and have them weighed and measured, and the cyanide placed in a small paper bag ready to drop in at once and permit the immediate escape of the operator from the fumes, which are most deadly.

It has been found by actual experimentation that prolonged exposure of a low grade of material, or to fumes from a less quantity of material, is more likely to injure the plants, without being so sure of killing the scale, as is exposure to the fumes of a sufficient amount for a shorter time. That is to say, short exposure (about forty minutes) with the above formula is proven to be more injurious to the insects and less injurious to the plants, than longer exposure with less material, or with weaker material.

It is necessary (1) that the cubic contents of the room be accurately determined; (2) that the room be air tight or gas tight; (3) that the cyanide of potassium be 98 per cent pure; (4) that the sulphuric acid be as strong as 1.83 per cent; (5) that a sufficient amount be used to preserve this formula according to each one hundred cubic feet of space; (6) that the fumigating house be not overpacked with tightly crowded plants; (7) that the plants be not wet during the time of fumigation; (8) that the fumigation continue for at least forty minutes; (9) that the gas be administered from below rather than from above; (10) that the fumigating house be air tight and kept tightly closed during the entire period of fumigation; and (11) that the plants be practically dormant when exposed to the fumes. It also is important that the room be so constructed that it can be quickly ventilated after fumigation is finished, and that this ventilation be done rapidly, according to directions. If the trees be covered with mud or encased in any covering that the gas does not readily penetrate, those scales that are covered will not be killed. If the roots of the trees be packed in damp moss or other damp material at the time of fumigation, there is especial danger of injury to them.

With these facts in mbind let us first say why all nursery stock in this state of kinds not liable to attack by the San Jose scale should be fumigated before being sold, shipped or transplanted. It should be said that by the expression, "kinds not liable to infestation by the San Jose scale," we mean conifers, strawberry plants, bulbs and tubers herbaceous perennials and bedding plants.

1. It is acknowledged by all that practical entomologists who have made a careful study and proper tests in this subject that fumigation is effective in killing the scale when properly done. Much of importance depends upon the expression "when properly done."

2. Fumigation does not injure any kind of nursery stock that is attacked by San Jose scale when properly fumigated. In the early fall and late spring while trees are not dormant there may be slight injury, but this is proven to be insignificant. A fruit-grower and nurseryman in this state recently told the writer that he had fumigated apple trees in the spring after they had started to grow, and when the new shoots were from three to six inches long. He used the above formula and transplanted the trees to his own orchard. The growth was not checked, the trees were not injured, and the scales were killed.

3. Another argument for fumigation is that it prevents the dissemination of scale insects and many other pests from any and all nurseries, whether the inspector has found it in them or not. No inspector can possibly find all the scale insects in a nursery or all of the trees that have only a few of these pests upon them, but the gas when properly applied can find nearly if not quite all.

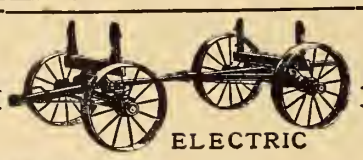
4. Many other states are requiring fumigation of all nursery stock. No less than eight states have this requirement. We should not require it for our state merely because others do the same, but the best fruit-growing states of America and also Canada would not require fumigation if the experts and scientific persons in those states did not find it best.

5. No other treatment of any nursery stock which is suspected of being infested is known to be as effective in killing the scale or as safe to the trees. Since this is true, fumigation—the best method—should be ours.

6. A further and very strong argument for fumigation of all nursery stock, especially of all fruit trees, is that the fruit growers want it. They find that the pest is carried into their regions upon nursery stock that has not been properly treated, and generally not treated at all. It is very important that its dissemination by this means be entirely checked. The best authorities in our country have nothing better to offer than universal fumigation.

With this, as with every question, there are two sides. There are arguments against fumigation. Let us try to take as honest a view of the opposing side as we have taken of that just discussed. For certain reasons the nurserymen are justified in opposing fumigation as performed by many persons.

1. Fumigation may not be effective. If it be not effective why should we require it. It will be ineffective when any one or more of the conditions as named in the early part of this article are missing or improper. By ineffective we mean that the scale will not be killed. When fumigated for too short a time, or by poor material, or



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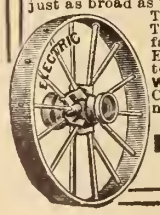
will make hauling manure easy. Easier and quicker loaded. Then there are the broad tires—just as broad as you want them up to 8 inches. They don't cut in and rut the soil. They don't spoil meadows or the fall sown grain. Next to a Handy Electric Wagon the best thing is to use a set of our **Electric Steel Wheels** on your ordinary wagon. Can't tell it all here. Write for new **Illustrated Catalogue.** We mail it free for the asking.



Electric Wheel Co.
Box 217 Quincy, Ill.

Spray Pumps

With All Brass Working Parts

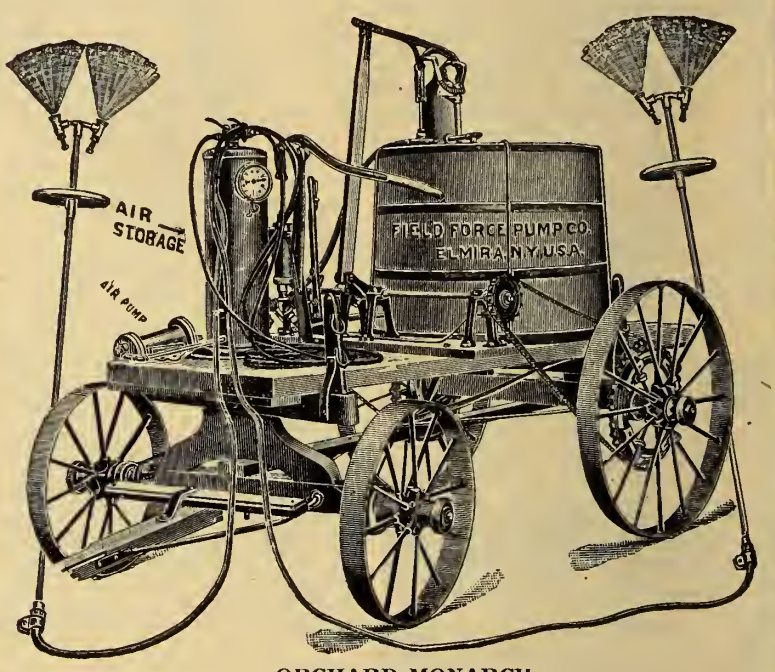
Mechanical Agitators that *agitate* and
Automatic Brushes for keeping *suction strainer clean*

No need using space to tell the advantage of spraying in order to secure best results from your orchard—almost everyone is now convinced that fruit-growers must spray.

The point to consider is: What pump shall I use? You cannot afford to be without the best—the line of pumps manufactured by the Field Force Pump Co., Elmira, N. Y.

Best for several reasons. First—They have the greatest power, and great power is necessary to produce the fine mist in spraying which gives the best results. Second—they are strongly made and will last longest. Third—They are so constructed that the agitation of the spray mixture is perfect—and every practical man knows how necessary it is that the mixture be kept agitated. Fourth—Notwithstanding the great power of these pumps, and the thorough agitation they produce, they are easy to operate.

PUMPS AND APPLIANCES OF ALL KINDS FOR ALL KINDS OF WORK. (*Send for Illustrated Catalogue—FREE!*)



ORCHARD MONARCH.

Among commercial orchardists there is a growing impression that more powerful spray pumps must be used. A strong pressure must be maintained, to produce the fine mist so necessary for best results. Large tanks are required, to avoid lost time in going to and from the station where the mixtures are made, and a strong, reliable outfit must be used—one which will not break down when most needed.

The Orchard Monarch is the most powerful sprayer made. Tank of large size (150 gallon capacity); mixture is vigorously agitated; power is furnished by sprocket wheel on axle of wagon, with special air chamber, which will hold enough air to spray a tree after the wagon stops. It will pay large orchardists to investigate.

Our new catalogue tells all about our line of pumps. Send for it, free. Tell us the size and age of your orchard and we will recommend style of pump best suited to your needs. Better send in your order now, before the rush.

WRITE FOR NAME OF NEAREST AGENT

FIELD FORCE PUMP CO.

Formerly of Lockport, N. Y. *Manufacturers* ELMIRA, N. Y.

Clark's CUTAWAY HARROWS

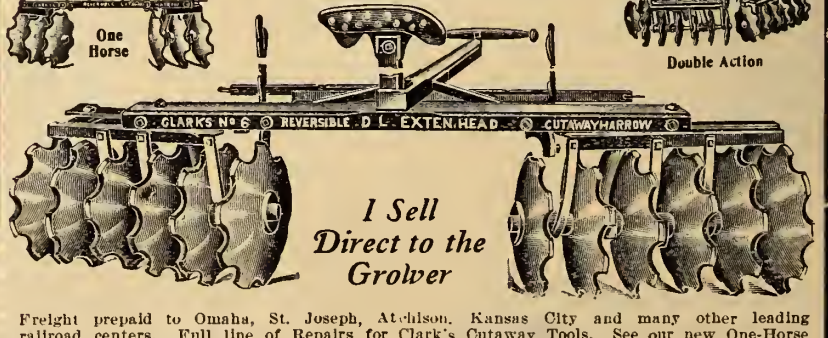
Are Rebersible and Extension Headed

You do not have to add to or take off a lot of steel work to extend or run gangs closed in our Harrows. A "6" for Apple Orchards. A "4½" and "5" for Peach, Pear, Plum and Cherry Orchards.

NO ONE KICKS AFTER BUYING CLARK'S HARROWS.

One Horse

Double Action



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Freight prepaid to Omaha, St. Joseph, Atchison, Kansas City and many other leading railroad centers. Full line of Repairs for Clark's Cutaway Tools. See our new One-Horse Reversible Extension Harrow for all purposes. Fine for Small Fruits and Young Orchards. For Descriptive circulars and prices, send to

E. G. MENDENHALL, Box 300, Kinmundy, Illinois

General Agent for Central and Western States. Only Western Distributing Agent.

Our Double Action Harrows and Reversible Disc Plows are a Wonder.

SPRAY PUMPS

The Pump That Pumps — SPRAY PUMPS — Double-acting, Lift, Tank and Spray PUMPS

MYERS Glass Valve

Store Ladders, Etc. HAY TOOLS of all kinds. Write for Circulars and Prices.

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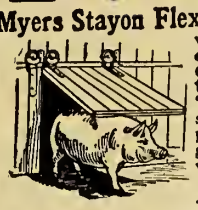

with steel roller bearings, easy to push and to pull, cannot be thrown off the track—hence its name—"Stayon." Write for descriptive circular and prices. Exclusive agency given to right party who will buy in quantity.

F. E. MYERS & BRO. Ashland, - Ohio.

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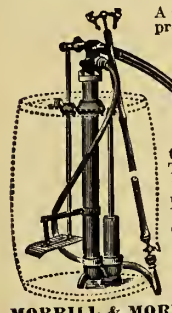


A *Good* Spray Pump earns big profits and lasts for years.

THE ECLIPSE

is a good pump. As practical fruit growers we were using the common sprayers in our own orchards—found their defects and then invented **The Eclipse.** Its success practically forced us into manufacturing on a large scale. You take no chances. We have done all the experimenting.

Large fully illustrated Catalogue and Treatise on Spraying—FREE.

MORRILL & MORLEY. Benton Harbor. Mich.

Century Sprayer.

Best barrel sprayer made. Capacity and adaptability to suit all requirements. These are features: **Its valves are bronze balls. Cylinder and plunger are brass. Indestructible packing crimps. Large air chamber. Agitator that agitates.** Its low

PRICE PLEASES

We make twenty styles sprayers. Every need specially met with **Hand, Bucket, Knapsack, Power Sprayers.** Spraying catalog free. Booklet on insects and plants and fruit diseases 10c.

THE DEMING CO., Salem, O.

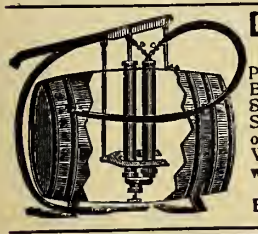
Henion & Hubbell, Western Agts Chicago, Ill.

Spray Pumps

DO NOT be fooled in buying low-priced Iron Pumps or those with so-called brass working parts. They soon wear out and are thrown away. GET THE BEST. A pump that is good for years, made of solid brass, simple in construction, easy working, capable of high pressure, no trouble to keep in order. Take the advice of PRACTICAL FRUIT GROWERS and buy no spray pump only those manufactured by

LATHAM & CO., SANDUSKY, OHIO.

Send for Catalogue.



DEFENDER SPRAYER

Powerful, ALL Brass, Easy to use. Quick Sellers. Treatise on Spraying and Catalog of Spray Pumps free. Write today. Agents wanted.

J. F. GAYLORD, Box 77 Catskill, N. Y.

Brass Sprayers Last Longest And Are The Cheapest To Buy.

Price $3.50 and upward. Make your labor and investment earn a good profit by destroying the insect pests and plant diseases which cause so much loss. These sprayers may also be used for applying whitewash and cold water paints, spreading disinfectants, cleaning wagons, curing surface diseases on cattle, chickens, and many other purposes. **Sprayers may be returned at our expense if they are found defective.** Send for catalogue.

DAYTON SUPPLY CO., Dayton, Ohio.

MADE $1725

in spare time and home county. You may do as well. Orders come fast for the

"Kant-Klog" Sprayer

with new spring shut-off. Catch a good thing quick. Write for free sample plan and full particulars

Rochester Spray Pump Co., 17 East Ave., Rochester, N.Y.

SAVE TREES BEFORE DISEASED

by spraying, and thus add to your profits. Use THE PERFECTION SPRAYER for all insects and fungi. Sprays everything. Saves its cost in one season. Combined hand and horse power. Catalogue FREE.

THOMAS PEPPLER, Box 85, Hightstown, N. J.

when the trees are so wet that they are covered by a film of water, when the house is poorly constructed and leaks gas, when over-packed, when insufficient material is used, etc., the scale will not be killed and the expense time and trouble of fumigation will be for nothing.

2. Fumigation may be made to injure plants, and does injure them when improperly done. This may come from too long exposure, using too much material, fumigating plants when not in dormant condition, fumigating them when the roots are packed in damp packing material, fumigating them in a room that is not adapted to ventilation, for example, a box car, fumigating at a very high temperature or while the room is very warm, and also fumigating varieties such as conifers and greenhouse plants that are too delicate to stand full strength. It should be said that the latter may be fumigated when necessary, by reducing the strength, as should be done for peach when not quite dormant. All fruit trees when dormant will stand much more than the formula above indicated.

3. Fumigation is troublesome and expensive to nurserymen. When a large firm is rushing its orders in the spring, it is as busy as any extensive farmer at haymaking time. Especially if there should be prolonged rains at this time it would be quite a hindrance to their work to impose the necessity of fumigation. The only thing for them to do would be to permit each load of trees to stand under shelter until the bark is dry. Standing over night should be sufficient for them to be dry enough to fumigate in the morning.

4. Fumigation demands the attention of a very careful and reliable man during the "harvest" season when the nurserymen are busiest, and to make such demand upon nurserymen must have most serious justification.

5. Some nurseries are not in the infested regions and do not have San Jose scale. It is a question if nurseries that are known to be clean should be compelled to fumigate. On the other hand the scale has been spread on stock that was thought to be clean. This is a common case of putting similar requirements on all persons in order to permit no guilty one to escape.

6. Some nurserymen do not want fumigation. They have as good right to say that they do not want to fumigate as the fruit-growers have to say they want it done. Whether they have as much justice in this statement depends upon conditions. If a man think he has no San Jose scale and should not fumigate he may disseminate it, but if he know he has none, no good will be done by the fumigation, and yet when properly done no harm will come from it.

On the whole, our observations, studies and experience lead us to say that universal fumigation is the only safeguard for fruit-growers.

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A Word of Caution.

This is the season for planting. During the long, cold winter months no doubt plans have been laid for the planting of many acres in fruit, and as the winter has advanced we have all seen the pile of attractive nursery catalogues grow larger and larger as each day's mail has been laid on our desk. If we could believe all the wonderful tales they tell of the still more wonderful fruit pictured for our benefit, the selection of varieties that would soon make our fortune would be easy. But right here we would drop a word of caution. The selection of varieties was never so important as just now. The invention of the refrigerator car and the wonderful development and extension of the railroad in recent years have brought the east and west, the north and south close together in one common market. Each year competition is going to be more severe than it ever was before, and only such fruit will pay as is especially adapted to the existing conditions of soil and climate, and so we say, select such varieties as you know will produce uniformly good crops of high grade fruit in your locality. Note the extremes of temeprature for the past few years, and the date of the last killing frosts in the spring, and be sure to select such as can stand your climate. There will always be money in fruit, where the right tree is planted in the right place, and especially here in Pennsylvania, where we have the best local markets right at our doors. Yet it is a fact that more failures have resulted from planting trees in locations that were not adapted to them than from all other causes combined, and this is especially true of the peach.

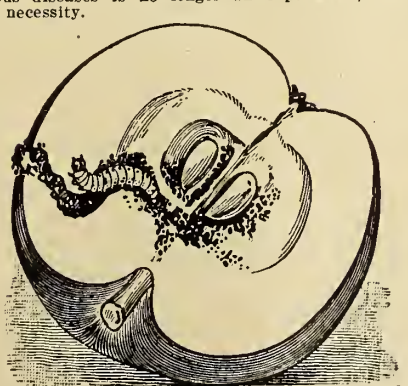
G. H.

⚜ ⚜ ⚜

I am a subscriber to several papers, but The Fruit-Grower beats all. Am willing to pay $1 a year for it, published once a month.—Louis Schroeder, Chicago, Ill.

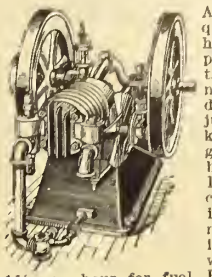
SPRAYING FRUIT TREES.

The question of spraying fruit trees to prevent the depredations of insect pests and fungous diseases is no longer an experiment, but a necessity.



Our readers will do well to write Wm. Stahl, Box 6-J, Quincy, Ill., and get his catalogue describing twenty-one styles of Spraying Outfits and full treatise on spraying the different fruit and vegetable crops, which contain much valuable information, and may be had free,

The Air Cooled ENGINE and SPRAYER



An engine that requires no water; that has no water jacket, pipe connections or tank to freeze; no igniter to get out of order. Fired with a jump spark. Gasoline kept in base of engine. A fan on exhaust side cools it. 1½ H. P. engine combined with Gould's Fig. 1463 spray pump makes the ideal spraying outfit of the world. Costs only 1½c an hour for fuel. For further information, address

CHARLES G. BLATCHLEY,

Swanson, McKean and Meadow Sts., Philadelphia, Pa.

GOULDS' SPRAYERS

Awarded the Gold Medal at World's Fair, St. Louis, 1904, and universally acknowledged the **best** by successful orchardists.

WE ARE GENERAL DISTRIBUTORS

and can save you money.

Before you buy a Sprayer, write us for book **"How to Spray, When to Spray and What Sprayer to Use."** It is Free.

The Planter Seed Company

Springfield, Missouri

One 4-Gal. Sprayer at work in an Orchard.

Cut This Ad Out—Send Cash With Order and Save Delay

$5.00 SPRAYER FREE

To have you introduce Rippley's 4 and 5-gal. Compressed Air Sprayers in your localities, we want you to canvass for us. Write at once for our 100-page Sprayer Catalogue, as we want you to sell THREE ONLY of our 4 or 5-gal. Sprayers to your neighbors at prices below, and we will give FREE a $5.00 No. 15, 4-gal. Galvanized Sprayer, complete as shown in cut.

$1.50 OFFER EXPLAINED, $1.50

If you are not in a position to take advantage of our $5.00 Free offer, we will upon receipt of $1.50 in stamps, money or express order, ship by express, C. O. D., subject to your inspection at express office, one of our No. 15, 16, 17 or 18 Sprayers. When you find it as we represent, you pay agent balance, and if not as represented, we will forward another Sprayer free of charge.

DON'T EXPERIMENT—Buy the best Sprayers. They prove the cheapest in the end. We don't claim to manufacture the cheapest Sprayer on the market. We do claim and have demonstrated for the past five years that we manufacture the best.

OUR CHALLENGE—At any time we will enter a test, with any manufacturer of a similar price Compressed Air Sprayer, and prove that our Sprayer is more substantial.

WHAT IT IS GUARANTEED TO DO—To spray solution in the form of a mist, and to force a greater distance from the nozzle than any other 4 or 5-gallon Sprayer on the market.

To spray trees and whitewash buildings 25 feet high or more, by using extension poles to elevate spray.

Wheelbarrow Compressed Air Sprayer.

To spray more vegetables, bushes, trees and plants with less labor and with less solution, and to last longer than any other 4 or 5-gallon Compressed Air Sprayer on the market.

What It is Used for—For spraying trees, almost any height, spraying flowers, potatoe vines, cotton, tobacco, and nursery stock. For spraying Lice Killer and Fly Remover on stock, and liquid disinfectants in vaults and army camps. For whitewashing poultry houses, barns, fences, etc.

Our Improved 1905 4-Gal. Sprayer.

Rippley's Combination Compressed Air Sprayer and Wheelbarrow.

Price complete as shown in cut, $20. With 8-ft. bamboo rod, $21.00.
Price complete less frame of Barrow, $16.00.
Add $1.00 to prices above and we pay freight.

Description: Compresser holds 15 gal. The heads are made of No. 12 steel, 13 in. diameter, 30 in. long; has brass cylinder pump; size cylinder, 3x12 in.; has safety valve; tested to 85 lbs. pressure; fitted with two leads of hose, and 2 single Vermorel nozzles; 20 in. steel wheel; frame hollow steel piping, very strong; will spray two rows of plants at a time or more if you wish. Weight 85 lbs. Will spray trees any height by using extension rods. Compresser can be removed and you can fit a bed to barrow, if you wish. We recommend this Sprayer as one of the best we manufacture. It is fitted with an Agitator.

WHY THEY ARE THE BEST COMPRESSED AIR SPRAYERS—Are made of much heavier material and much stronger than any sprayer on the market. They have a safety valve and are tested to 60 lbs. pressure.

They will force a finer spray a greater distance than any other Sprayer.

They are made to strap to body, and a person can walk and spray at leisure by simply turning the pet cock off and on.

They have a better brass cylinder pump. The air being forced in at the bottom, thoroughly agitates the solution; and after air is pumped in according to directions, no more labor is required, excepting holding the nozzle. More air can be pumped in without taking Sprayer from body.

They are the only Compressed Air Sprayers that will whitewash buildings successfully. We sell them under a guarantee to be as represented, or make good our guarantee.

Mountain and Hill Sprayer—can be pulled by horse.

PRICE OF COMPRESSED AIR SPRAYERS.

No. 15. 4-gal. complete, galv. steel	$5.00
No. 16. 4-gal. complete, heavy copper or brass	7.00
No. 17. 5-gal. complete, galv. steel	5.50
No. 18. 5-gal. complete, heavy copper or brass	8.00

If you wish us to pay express or freight to your city on No. 15, 16, 17 or 18 Sprayers, add $1.00 to above prices of each sprayer for any shipment in United States.

Extra hose, per foot, 8c. Nozzle, $1.25. Bamboo Rod, Copper Tube thruogh center, to elevate spray in high trees, suitable to attach to these Sprayers, 4-ft., 75c; 5-ft., $1.00; 8-ft., $1.25; 10-ft., $1.50.

A COMPLETE FOUR-GALLON Sprayer includes two feet of hose, strap, and one Single Vermorel Nozzle, for making fine or coarse spray.

ECLIPSE ORCHARD SPRAYERS—We carry a full line of the best large orchard and field sprayers on the market; also Spray Mixture Cookers, Carts, etc.

PREPARED SPRAYING MIXTURES—Are highly indorsed and are cheap. By using them, and our Sprayers and following our Spray Calendar, telling when to spray and what to use you will meet with success. 100-page Catalogue mailed FREE.

RIPPLEY HARDWARE CO., Box 117 Grafton, Ill.

MANUFACTURERS OF SPRAYERS ANR PREPARED SPRAYING MIXTURES.

BEE KEEPERS!

We have three carloads of Higginsville Aparian Supplies in stock, which we will furnish at factory prices, saving freight from factory to Kansas City. Special prices furnished on large orders. Correspondence solicited. Catalogue furnished on application. Advise ordering early.

Walker-Brewster Grocer Co
WHOLESALE FRUIT AND PRODUCE
403-5 Walnut St., Kansas City, Mo.

BEES Write the Chicago Bee-Keepers' Supply Co. for the best makes of goods and Lowest Prices.
J. B. KLINE, Manager, TOPEKA, KAN.

BEES If interested in bees, subscribe for the PROGRESSIVE BEE-KEEPER
50 cents per year. Sample copy free, also copy of catalogue of Bee Keepers' Supplies.
LEAHY CO., HIGGINSVILLE, MO.

BEE AND POULTRY SUPPLIES
Best and Cheapest. Send for free catalogue. We save you money.
ARCHIAS' SEED STORE, Dept. 8 SEDALIA, MO.

BEE SUPPLIES ALL KINDS AT LOWEST PRICES
Illustrated Catalogue Free.
J. W. Rouse, Mexico, Mo.

The Ellisville Nurseries
offers a complete line of first-class Nursery Stock, special low prices on Apple Trees, both in two and three-year-old trees, by the 100 or in car lots. Please send your list of wants for prices before ordering elsewhere and save money. Certificate of inspection will accompany each shipment. Stock guaranteed to please.
Ellisville Nurseries, A. Wilmas, Prop.
Ellisville, Mo, St. Louis County.

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FREIGHT PAID TO YOUR STATION.
We have a complete line of fruit and ornamental trees, shrubs, vines and plants. Get our catalogue and price list. Our stock and prices are right. Give us your order, and we will do the rest. Remember we pay the freight.
ROEDER NURSERIES, Osceola, Mo.

Apple, Pear, Peach and Cherry Trees
Gooseberry, Currant and Raspberry Plants.
ROSEDALE NURSERY
G. F. Espenlaub. Rosedale, Kan.

Old Customers
Continue to buy my strawberry plants. The finest lot I have ever offered are now growing for the spring of 1905. Free catalogue covering descriptions and culture ready January 1, 1905.
DR. E. L. BEAL, REPUBLIC, MO.

FOR CLOSE PRICES ON
Apple, Plum, Pear, Cherry, Peach and Grape Vines
WRITE
WOLVERINE NURSERIES
Wholesale & Retail, Paw Paw, Mich.
G. E. PRATHER, JR., Propr.

Graves Peach
An early yellow freestone, ripening a week before Crawford's Early. Trees from the originator have seal attached. Prices free.
W. J. GRAVES, Originator
PERRY, OHIO

4,000,000 Peach Trees
Tennessee Wholesale Nurseries
JUNE BUDS A SPECIALTY
No agents traveled, but sell direct to planters at wholesale prices. Absolutely free from disease and true to name. Write for catalogue and prices before placing your order elsewhere. We guarantee our stock to be true to name. Largest Peach Nursery in the World. Address
J. C. HALE, WINCHESTER, TENN.

P. J. BERCKMANS CO.
AUGUSTA GA
TREES AND PLANTS FOR EVERYBODY
CATALOG FREE
FRUIT TREES

Make your own Fertilizer at small cost with
Wilson's Phosphate Mills
From 1 to 40 H. P. Send for catalogue
WILSON BROS. Seed Mfrs., Easton, Pa.

The San Jose Scale in Pennsylvania.

In consideration of the great and serious importance of the San Jose scale in this state, and of the near approach of the proper time for spraying with best results, we find it best to discuss this pest plainly in some detail. Inquiries are coming to this office every day for information as to the best method of treating this most serious fruit pest.

The most common question we receive is: "What treatment would you recommend for my trees, which are infested with the San Jose scale?" The details of the best treatment to be recommended depends upon the kinds of trees, their size and number and the amount of infestation. It appears that pear and apple trees can be sprayed successfully and without injury with undiluted crude petroleum, or with fifty per cent kerosene emulsion or kerosene mixture. Such materials cannot be used on peach and plum, as they will injure the trees. The best all around material for treating San Jose scale is proven to be the lime-sulphur wash. The unboiled lime-sulphur-soda wash has proven satisfactory and successful where made with sufficient care, but it is much more expensive in making it upon a large scale than is the boiled lime-sulphur-salt wash. Although the latter is slightly troublesome to make, it is the cheapest and at the same time the most desirable remedy for the San Jose scale upon any kind and all kinds of plants.

Pruning.

If we had an infested orchard we should give it the following treatment this spring, just before the buds burst: Cut back the trees in proportion to their injury or degree of infestation. Peach trees need to be pruned back more than do apple or pear, but all varieties or kinds should be pruned more closely than for injury by cold weather. In badly infested orchards, or for trees that have commenced to die at the terminal branches, the process of pruning should be little short of "dehorning" or cutting back until the mere trunk remains with only the bases of the larger branches. In general, the outer half of the branches should be cut off of an infested tree. The next step is to remove or burn the brush, or to get rid of them, more to make room for spraying operations than to kill the scales upon them, as they are sure to die upon all wood off the tree.

Formulae.

The material that we should use in treating the scale would depend upon the number of trees to be treated, because the increased cost of a few cents per tree would not amount to much on a few trees, yet on trees covering several acres it would be a great deal. Upon a few trees in a village garden, where we should want the most effective material prepared with the least trouble, without regard to a few cents' increased expenditure, we should undoubtedly use the following formula, known as livers of sulphur and lime:

(1) Livers of sulphur (or sulphide or potash), 1 pound.

Fresh lime (or quick lime), 1 pound.

Warm water, 2 gallons.

This mixture will cost about thirteen cents per gallon, and has been proven during the past season to be effective in destroying the scale in our own state. Senator Manbeck reports to us that he and his neighbors in Mifflintown saved their trees by following our directions and spraying well with this mixture, even though the trees were previously badly infested. This accords with statements published by Professor Britton, state entomologist of Connecticut, in a report of the experiment station of that state, and also with statements previously published in our monthly bulletin. Cut back the branches and apply this material in any way to cover the trees entirely. Where the trees are small enough to reach all parts by hand a paint brush will do for the work. Make three or four applications to be sure that all spots are covered.

Upon a larger number of trees in a garden, lawn or very small orchard, we should use the following mixture, known as the lime-sulphur-soda wash, made without boiling:

(2) Caustic soda, 5 pounds.
Flowers of sulphur, 20 pounds.
Quick lime, 25 to 30 pounds.
Water, 50 gallons.

If caustic soda is not obtainable, concentrated lye, such as is used for making soap, will answer the purpose. Put the fresh lime into a barrel, mix the sulphur to a paste with hot water, stir it to break the lumps, pour it over the lime, and add only enough water to slake it well. Keep the barrel well covered with old blankets or carpets to retain as much heat as possible. While the lime is slaking dissolve about a third of the caustic soda (or of the lye) in hot water, and after violent action has ceased in the barrel, add this solution of caustic soda to the lime and sulphur and cover it at once. After the boiling has again stopped add the second third of the caustic soda dissolved in hot water, and again cover it during the period of violent action, after which add the remainder of the caustic soda (or the lye) dissolved in hot water, and keep the barrel covered until all action has ceased and the high temperature is reduced. Before adding the solution of caustic soda each time the lime and sulphur should be stirred, but no other stirring is necessary. The mixture is now ready to apply with a spray pump, brush or by any other means to cover the trees thoroughly. Make two or three applications of this mixture and you will have successful results. This mixture will cost three or four cents per gallon.

For a larger orchard, or where making fruit growing a profession, we certainly recommend the boiled lime-sulphur-salt wash, made according to the following formula:

Sulphur (either flour or flowers), 20 pounds.

Quick lime (or fresh lime), 25 or 30 pounds.

Salt, 15 pounds.

Water, 60 gallons.

Slake the lime, make the sulphur into a paste with water, add the sulphur and salt to the slaked lime and enough water to let it boil. Stir it for a while, and keep it boiling, with an occasional stirring, for at least three-quarters of an hour, or until the sulphur is dissolved. One can know when it has boiled long enough by stirring it to the bottom and seeing that the light yellow color of the sulphur has entirely disappeared. This shows that this mixture has entered into a new combination. The salt is not necessary, and successful results have been obtained without it, but it is thought by some that the wash sticks better to the trees when the salt is used, and this ingredient certainly aids in raising the temperature of the boiling point, and thus in effecting an earlier and more complete union of the sulphur and lime. This mixture costs only one to one and one-half cents per gallon when ready to apply. It can be boiled in any way to get it boiled long enough, and applied in any manner, with safety to all kinds of trees and shrubs.

Method of Boiling.

The efficiency of the lime-sulphur-salt wash, or its ability to destroy the scale, is not affected by the method of boiling. It is proven by many practical tests that the only requirements that are necessary are to get the materials together in something nearly proper proportions, boil them a proper length of time, or until the sulphur is dissolved and new compounds are made, and apply the mixture in such a way as to cover entirely every part of the tree. However, the method of boiling may vary according to the equipment which one may have at hand, or the amount of material that one may wish to prepare at one time. We have seen it properly made in one iron kettle (copper should not be used), but it is better to use two or three kettles, if it is to be boiled over an open fire, in order to have enough boiled material on hand to keep the sprayer going. Three kettles can be suspended on a long pole or placed on a rude stone furnace, and they will supply enough insecticide to keep an ordinary barrel sprayer constantly busy. If properly and carefully managed two kettles may be enough to do this. An improvement over the open fire is to build a furnace of stone and mortar, setting the kettle or kettles down into the furnace so that the boiling can be done with a closed fire, and thus use less fuel. A further improvement is a farm feed-cooker with pipes extending into the barrels to boil the mixture with steam. For a comparatively small orchard this will yield good results, and has certain advantages. For boiling more extensively, as for a large orchard, a steam boiler should be used. A horizontal pipe should extend from the boiler to the barrels and a vertical pipe should reach from the horizontal pipe almost to the bottom of the inside of each barrel. With such a device one can boil several barrels at a time, depending on the power of his engine, with no need of stirring and no danger of burning. The chief effort should be to get it boiled long enough, with whatever means, although there is no need of boiling the mixture until it becomes green or black. When the brick red color is reached, and the light yellow color is gone from the bottom of the mixture, the boiling need not be continued.

Methods of Applying.

Again as to efficiency of the lime-sulphur-salt washes, there is no difference in the methods of applying the same, as the only requirement is to have the material thoroughly cover every part of the infested trees or shrubs. Thus in applying the sulphur washes, made according to any one of the three formulae above given, the method to be selected must be in accordance with the convenience of the operator or the kind of appa-

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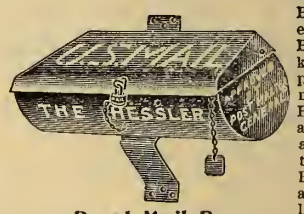

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Let every fruit-grower plant some Loganberries. They are proving more productive and profitable than Blackberries and ripen at a season before summer drouths. Strong, well-rooted plants, $1.00 per dozen, postpaid. Write for illustrated circular. Special prices in quantities.
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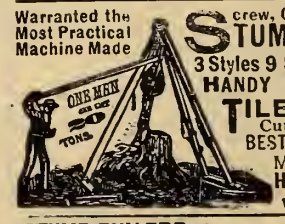

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ratus at hand to effect the desired end of fully covering all parts of the trees or shrubs to be treated. One correspondent has done this with a paint brush, after having cut off the smaller branches. He painted the infested trees several times with one of these sulphur washes and eliminated the scale on his premises. Others have had good results with whitewash brushes. A sprinkling can or any other device that will put the mixture over the bark will be sufficient for small trees, but for large trees it is necessary to have some apparatus that will put the liquid over all parts of the bark, to the very tips of the most remote twigs. For this purpose a spraying apparatus is very desirable.

One should have at least a barrel sprayer, if he wish to treat trees of medium to larger size, or if he have many small trees to spray. For large trees or for many trees, even though small, some kind of power besides hand power to work the spray pump is advisable. The kind of power that is best to use depends upon conditions. Air pressure, generated by gearings attached to the spray cart or wagon, is not satisfactory for spraying trees, as the apparatus must stand still while in use, and thus the force changes rapidly. Steam, gasoline, compressed air and gas have been used to drive spraying apparatus, and it is found by field tests that the most even and most satisfactory power that can be applied is that which comes by compressed air or gas. Every person who anticipates buying a power sprayer should study the virtues of this subject for himself.

The kind of nozzle to be used is important, as it should be one that throws a genuine spray or mist, and not a mere stream or sprinkle. The Vermorel nozzle having a large orifice is among the best for this purpose. A spray cannot be thrown against the wind, and consequently the trees should be sprayed from the side where this work can be done with the wind, and the application from the opposite side made when the direction of the wind becomes favorable to work from that direction. To insure success one should spray well and thoroughly from one side of the tree, taking care that the mixture reaches the farthest tips of the twigs and covers both the upper and under sides of the horizontal branches and gets into the forks of the tree. He should then give a brief second or retouching spraying from the same side, which can be done within a few hours from the time the first application is made, and which is for the purpose of being sure that no spots whatever are left untreated. When the wind changes so that the opposite side of the tree can be treated, this should be done with the same care, giving the first thorough spraying and the second retouching application from this direction also. The most important part of the work is in having the material thoroughly applied to all parts after it is properly boiled.

The lime-sulphur washes, such as are mentioned in the brief formulae given on a preceding page, will not injure any kind of tree, shrub or vine when applied in any amount while the plant is dormant or without foliage. There is no danger of applying too much of this material to the tree, as in using petroleum and kerosene, and these sulphur washes are the most valuable fungicides as well as insecticides. We have seen where they have been used with most satisfactory results in preventing the occurrence of peach leaf-curl by one application made before the buds opened.

While the best possible time of year to make the application is in the spring, just before the buds burst and the green leaves commence to expand, we should not hesitate to do it at any time during the dormant season. In a large orchard where it is not possible to get over the entire orchard just at the particular time mentioned, we should certainly commence to spray now and spray every day this spring when the weather is suitable. The wash will dry within two hours from the time of application, and a rain falling on it afterward will not destroy its efficiency.

The reason for spraying just before the leaves appear is that the material is then protected by the expanding leaves and does not readily wash from the wood, but under such conditions remains in place practically all summer and serves as a means of preventing such young scales finding a place to fix as may be able to make their appearance. The chief objection to fall and winter spraying with these washes is that they are liable to be removed from the bark by the weather before the leaves appear in the spring. We strongly advise applying a second coat this spring to trees that were sprayed last fall. A little work now will be amply repaid in the increased vigor of the trees and fruit produced this summer.

Common Errors.

There are a few false ideas concerning the boiled lime-sulphur-salt wash which we wish to correct. One is the general supposition that it must be applied to the trees while hot. Although it runs better through the nozzles when warm, it loses its heat by the time it reaches the branches, and certainly and positively does not kill the scale by means of the heat. It is better to apply it while warm for the sole reason that it is thinner and makes a better spray and consequently more evenly covers the bark, without clogging nozzles, but it is also more unpleasant to handle while hot.

Another error is the formerly popular belief that the wash could not get cold or be kept over night or for any length of time without losing its efficiency. It is now known that it can be kept as long as desired after having been boiled, especially if in a closed vessel or away from the air. A good plan is to boil it now while one has time and store it in closed barrels, in concentrated form, to dilute and use later. When concentrated and permitted to stand, long yellow needles or crystals will appear in it, but these are readily dissolved in hot water, and should be thus dissolved and poured in with the mixture when diluted for use. When the time comes to use this stored material, dilute it with warm water to obtain the percentage desired and spray as though it were freshly made.

Another popular error is that this wash must be stirred all the time while boiling. This is not necessary, as but little stirring is needed. Yet it should not be permitted to stick to the bottom and burn in a cake. Stir occasionally during the boiling process, but not constantly. Another error is the belief that it is sufficient to apply this wash or any other to only the trunks and larger branches of the trees. This is not true, because if only a small spot of bark be left uncovered there will be many living insects at that place which will continue their attacks and rapid multiplication upon infested trees.

With the unboiled wash the flowers of sulphur, or the sublimate, is best because more finely divided, but with the boiled wash the flour of sulphur, which is slightly cheaper, and is ground sulphur (not sublimated), will serve the purpose as well.

We have discussed the most effective and cheapest tested formulae for the San Jose scale, and in fact for all scale insects except the oyster-shell, for which this has not proven effective. The new material called "Limoid," used with kerosene, will cost four or five times as much as the lime-sulphur-salt wash, and certainly will not be more effective and not much more convenient. This will cost at least five cents per gallon, which is more than the lime-sulphur-soda wash, but not as much as the very simple and effective "livers of sulphur" and lime.

H. A. SURFACE,
Economic Zoologist of Pennsylvania.

We Offer $5,000

As a Guarantee on Liquozone. The First Bottle is Free.

A great deal is said in these days about Liquozone.

Millions are telling of the good it has done; for one home in five—wherever you go—has some one whom Liquozone has cured.

This remarkable product has become the talk of the world. In the past two years, the sick of nine nations have come to employ it.

But so great a good could not be done to humanity without harming the interests of a few.

The consumption of medicine has immensely decreased. The popularity of the few physicians who cling solely to drugs has diminished. And in numberless homes where Liquozone is in daily use, sickness has been almost banished.

These facts have injured some interests. And a few of the injured attack what they blame for the injury. They denounce that which has done the good.

The usual method is to insinuate that Liquozone itself is a medicine; that, despite our claims, it is a compound of acids and drugs.

Such statements are oft repeated; and we cannot doubt that some are led to believe them.

Our answer to all is this:

The virtues of Liquozone are derived solely from gas, by a process requiring immense apparatus and from 8 to 14 days' time. The gas is made, in large part, from the best oxygen producers.

Nothing whatever enters into the product, save the gas and the liquid used to absorb it, plus a touch of color.

And to emphasize this answer, we offer $5,000 to any one who can disprove it.

In this business, methods which are subject to criticism are most carefully avoided. We permit no misrepresentation; no claims which have not been fulfilled. Our product is too vital to humanity to be laid open to prejudice.

What we say about Liquozone is true. What we claim it can do has, again and again, been done. And in any disease which we claim that Liquozone will help, we assume the whole risk on a two months' test with every patient who asks it.

Before we bought the rights to Liquozone, it had been tested for years in thousands of the most difficult cases obtainable. We found that diseases which had resisted medicine for years yielded at once to it. Sickness which had been pronounced incurable was cured.

The value of the product was placed beyond possible question, before we staked our fortunes and reputations on it. It was amply proved that, in germ troubles, Liquozone did what medicine could not do.

Then we gave the product away—gave millions of bottles, one to each of millions of sick ones.

We have published no testimonials; no evidence of cures. We have never asked a soul to buy it.

Our method has been to buy the first bottle ourselves; to let the sick try it without the cost of a penny; to let the product itself prove its power.

Most of you know the result. There is no neighborhood—no hamlet so remote—but knows some wonders which Liquozone has wrought.

And Liquozone is probably doing more to cure sickness, and to prevent it, than all drugs, all medicines combined.

How petty is that self-interest which would have you go back to the old methods—to the days before Liquozone! Back to the time when the very cause of disease was unknown, or when no one knew how to meet it!

What Liquozone Is.

The greatest value of Liquozone lies in its germicidal powers. It is a germicide so certain that we publish on every bottle an offer of $1,000 for a disease germ that it cannot kill.

Yet it is absolutely harmless to the human body. Not only harmless, but helpful in the extreme. Even a well person feels its instant benefit.

Liquozone is the only way known to kill germs in the body without killing the tissues too. Any drug that kills germs is a poison, and it cannot be given internally. Medicine is almost helpless in dealing with inside germs.

But germs are vegetables; and Liquozone—the very life of an animal—is deadly to vegetable matter. This fact—above all others—gives Liquozone its value. There is no other way to directly end the cause of any germ disease.

Germ Diseases.

These are the known germ diseases. Nearly all forms of all these diseases have been traced to germs, or to the poisons which germs create.

These are the diseases to which medicine does not apply, for drugs cannot kill inside germs. All that medicine can do is to act as a tonic, aiding Nature to overcome the germs. But those results are indirect and uncertain. The sick cannot afford to rely on them. And no one needs to now.

Liquozone alone can destroy the cause of these troubles. It goes wherever the blood goes, so no germ can escape it. The results are almost inevitable. We have seen them so often in every disease in this list that we have come to rely on them. Liquozone has proved itself so certain that in any stage of any of these diseases, we will gladly send to any patient who asks it an absolute guaranty.

Asthma	Hay Fever—Influenza
Abscess—Anaemia	Kidney Diseases
Bronchitis	La Grippe
Blood Poison	Leucorrhea
Bright's Disease	Liver Troublea
Bowel Troubles	Malaria—Neuralgia
Coughs—Colds	Many Heart Troubles
Consumption	Piles—Pneumonia
Colic—Croup	Pleurisy—Quinsy
Constipation	Rheumatism
Catarrh—Cancer	Scrofula—Syphilis
Dysentery—Diarrhea	Skin Diseases
Dandruff—Dropsy	Stomach Troubles
Dyspepsia	Throat Troubles
Eczema—Erysipelas	Tuberculosis
Fevers—Gall Stones	Tumors—Ulcers
Goitre—Gout	Varicocele
Gonorrhea—Gleet	Women's Diseases

All diseases that begin with fevers—all inflammation—all catarrh—all contagious diseases—all the results of impure or poisoned blood.

In nervous debility Liquozone acts as a vitalizer, accomplishing what no drugs can do.

50c Bottle Free.

The way to know Liquozone, if you have never tried it, is to ask for a bottle free. We will then send you an order on a local druggist for a full-size bottle—a 50c bottle—and will pay the druggist ourselves for it. This applies only to the first bottle, of course—to those who have never used it.

The acceptance of this offer places you under no obligations. We simply wish to convince you; to let the product itself show you what it can do. Then you can judge by results as to whether you wish to continue.

This offer itself should convince you that Liquozone does as we claim. We would certainly not buy a bottle, and give it to you, if there was any doubt of results. You want those results; you want to be well and to keep well. Then be fair with yourself; accept our offer today. Let us show you, at our expense, what this wonderful product means to you.

Liquozone costs 50c and $1.

CUT OUT THIS COUPON.

for this offer may not appear again. Fill out the blanks and mail it to The Liquozone Company, 458-464 Wabash Ave., Chicago.

My disease is.....

I have never tried Liquozone, but if you will supply me a 50c bottle free I will take it.

.....

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M110-3D.....

Give full address. Write plainly.

Any physician or hospital not yet using Liquozone will be gladly supplied for a test.

The Modern Gladiolus.

Why is it that, unlike many flowers which have their day, and for a time are very popular and then suddenly drop out of sight, comparatively speaking, the gladiolus not only retains its strong hold upon the amateur and professional grower, but the yearly demand for this flower is rapidly increasing?

This question was asked Mr. Cowee, the gladiolus specialist, of Berlin, N. Y., whose extended experience with this flower has given him ample opportunity to study and thoroughly weigh the situation. He says: "There are so many attributes which this flower possesses (some of which are not found in any other) which tend to make it the most popular and valuable for summer bloomers, that its hold upon the public and increased demand is no wonder to me.

"I am not speaking of the old types and many of later origin with small flowers, weak, narrow and pointed petals, many of which, with a light dew and the morning sun, are rendered unfit both for a place in the garden or upon 'my lady's table,' but which types, I am sorry to say, are still being largely grown (but from the lucrative side of the question entirely), and will probably for all time find some buyers, who are always looking for something cheap.

"I refer to those strains with which the intelligent flower lovers are fast becoming familiar, on account of their perfect forms, strong and well-rounded petals, clear colors, correct and well defined markings and which once grown, makes the buyer more critical, who instead of being satisfied, is now looking each year for something better. Walk through a few rows of my Silver Trophy strain when it is in full bloom, try and select the most beautiful spike, and come out of the field with your arms full of such, and then you may be able to more fully appreciate the situation.

"One of the principal points in favor of the gladiolus is the case with which it can be successfully grown. Tell me, if you can what other flower will respond to the extent the gladiolus will, with as little care and cultivation? You answer, none. Correct. Then, too, the diversity and beauty of coloring. Where will you find it equaled? Not even in the expensive orchid, which, by the way, is practically the only flower possessing equal lasting qualities.

"The gladiolus is not only a superb garden flower, for en masse planting or sprinkled among hardy plants and shrubs, or among dwarf annuals, but for indoor blooming (the spike being cut after one or two flowers have begun to open) is unsurpassed for any kind of decoration.

"The absence of odor to spike foliage or flower places it beyond the comment of the most fastidious person, who might object to the most delicate perfume ever known. Therefore for the parlor, dining table or sick room, there is no flower which can take its place or is more welcome.

"Most cut flowers are placed in water to preserve them, while with the gladiolus this process develops, rather than merely preserves, for if fresh water is daily supplied, accompanied with the clipping of a small portion of the spike, every bud will expose its beauty. I could give you many other reasons why the hold these modern gladiolus (as I call my new hybrids) has upon the public is strengthening, and will not be weakened so long as quality is sought for rather than quantity, which subject I shall be glad to again take up with you upon you visit to my fields the coming summer."

Nurserymen's Meeting Program.

Harlan P. Kelsey, chairman of the program committee of the American Association of Nurserymen, has arranged a preliminary program, and it is presented herewith. In connection with this notice, Mr. Kelsey wishes to state that this program is but a preliminary one and is open to partial change and other subjects will likely be added later. The meeting of the association will be held at West Baden Springs, Ind., June 14 to 16. On Friday night, the last evening, there will be a fruit banquet, and on Saturday a side trip to the Mammoth Cave, Kentucky. The preliminary program follows:

"Soil Inoculation" (stereopticon)—Prog. Geo. T. Moore, Department of Agriculture.

"Mistakes in Office Management"—Thos. B. Meehan, Philadelphia, Pa.

"Importing of Nursery Stock"—By various ones interested.

"A Tree Garden to Last a Thousand Years" (stereopticon)—J. Horace McFarland, Harrisburg, Pa.

"Plants in Department Stores"—Howard A. Chase, Philadelphia, Pa.

"Refrigeration of Nursery Stock," "Storage in Cellars"—Madison Cooper, Minneapolis, Minn.

"Experimental Pomology and the Nurseryman".—Prof. John Craig, Ithaca, N. Y.

"The Lowest Prices of Ornamental Nursery Stock"—Chas. Maloy, Rochester, N. Y.

"What are the Chief Contributions to Pomology Gained from the Louisiana Exposition?"—J. C. Hale, Winchester, Tenn.

"Picking, Packing, Grading and Shipping of Fruit" (stereopticon)—J. H. Hale, South Glastonbury, Conn.

"The Latest Notes on the Cost of a Tree"—H. L. Bird, Benton Harbor, Mich.

"Views of a Texas Horticulturist"—D. H. L. Borner, Omen, Texas.

"Crown Gall and Root Knot"—Geo. C. Hedgecock, St. Louis, Mo.

Don't Plant Seeds Too Thickly.

Many persons make the mistake of planting seeds too close together in making their gardens. This plan not only requires a greater quantity of seed, but it also results in a smaller crop. The Wisconsin Experiment Station conducted some experiments in growing string beans in a forcing house, and this fact was demonstrated. In one bench the beans were planted in hills about a foot apart each way. In another bench the beans were planted in drills or rows about thirty inches apart, with the plants about three inches from one another. Later some of the latter rows were thinned, until the plants stood about eighteen inches apart, and the other rows were left unthinned. The best results, by far, were obtained from the bench where the beans were planted in hills, but in the thinned sections a larger yield was obtained than in the sections left unthinned.

"In the case where they were left to grow thickly," says the report of the experiment. "the plants used most of their food trying to reach places where they could get enough light, as a consequence of which the plants were more like climbers and produced but few pods, and those of a very inferior quality. Besides, the weight of these few pods broke the plants down, thus making cultivation difficult."

Gladiola for the Garden

If you want a garden of rich colors and a variety of exquisite shades you should plant Groff's Hybrid Gladioli. There is no flower of such easy culture, embracing the great range of color with endless combinations and varieties, as these Hybrid Gladioli. The graceful stalks with their burst of gorgeous coloring make the garden a veritable fairy land. Every shade or combination of shade can be produced. I am the United States representative and grower of Groff's Hybrids Awarded the Grand Prize, World's Fair, St. Louis, 1904.

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Wooden Veneer Tree Protectors

will protect your trees from rabbits, mice and borers; will also protect the trunks from sunscald. Can be left on throughout the year, and will last for years. A cheap, effective protection. The accompanying cut shows the protector as applied to a tree. This is the protection recommended by most of the horticultural societies, and millions of them are in use. We are headquarters for them. Write for prices.

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Read this and write us before buying elsewhere. Do you wish to see your orchard growing and bearing before paying for it? If so, write for contract for 1,000 trees or more. We have 10,000 peach, 10,000 apple, 3,000 cherry, 1,000 pear and 1,000 plum to put out on these contracts. Give reference and kind of land you have to plant trees on.

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Please use **SLUG SHOT** when Bugs come on any plant, shrub or tree—Potato Bugs, Scale or others.

Sold by Seed Dealers and Merchants all ober America

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Hammond's Slug Shot Works, Fishkill-on-Hudson, New York.

100,000 Fruit and Shade Trees

My stock is carefully grown and will be carefully dug. Apple, Pear, Cherry and Peach a specialty. 200,000 Gladioli Bulbs—Cowee's World's Fair strain.

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Free from Scale. New and Choice Varieties. BLACKBERRIES, STRAWBERRIES, RASPBERRIES. Our Free Catalogue will save you money. Please Mention Western Fruit-Grower.

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Address A. L. LUKE, WYNNEWOOD, I. T.

Free! 100 Elberta, Carman, or Mamie Ross Peach Trees given FREE to every new customer. Write for free Catalogue. Customer once and always. Fine stock Peach Apple, Plum, Cherry, Pear, Vines, etc.

$20.00 AN EAR
FOR 25 EARS, $500.00
Is what the first prize winner will get in the
FARM, FIELD & FIRESIDE
$3,000 PRIZE CORN CONTEST
All subscribers to paper can enter without extra cost. Price, $1 a year for one of the oldest and best farm weeklies. Special terms to agents. Contest closes Jan. 1, 1905. Write for particulars. FARM, FIELD AND FIRESIDE, 50 Masonic Temple, Chicago.

Your Money Back First

That is what the preferred dividend on the stock of the Ophir Copper Mining Company means. It means that you get your money back with interest at 6 per cent per annum out of the first net earnings of the mine. You then have an income from your stock as long as you live. This offer is addressed to careful, thinking investors. We do not want inquiries prompted by curiosity.

The Ophir Mine

is one of the richest mines in Butte, Montana; one of the best paying mining districts in the world. To the small investor who is fortunate enough to hold stock in this mine it offers the opportunity for **large** and **sure** returns in the near future. It will cost you one cent, the price of a postal card, mailed to us, to obtain complete information regarding the mine, the company and the men who direct its affairs. If a snug and steady income for yourself and family appeals to you. **Write today.**

OPHIR COPPER MINING COMPANY
407, 85 Dearborn St., Chicago.

To those expecting to attend meeting of

American Association of Nurserymen

at West Baden Springs, Ind., in June

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wish to present the following daily train schedule:

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8:54 am	5:55 pm.
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Sleeper open at 10:00 p. m. for those desiring to take 2:05 a. m. train.

West Baden Springs affords the visitor many attractions. The hotels are first-class, and we will be pleased to render the delegates and their friends every attention.

For particulars, rates, etc., address

A. C. Goodrich, Trav. Pass. Agt., Kansas City, Mo.," or

F. D. Gildersleeve, Asst. Gen'l Pass. Agt., St. Louis, Mo.

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If you want to visit Oklahoma, New Mexico, Arizona, Texas or any of the other sections of the Southwest in which fruit-growing is becoming such an important industry, investigate the low rate made by the

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ON FIRST AND THIRD TUESDAYS OF EACH MONTH.

The Santa Fe reaches every part of the Southwest, and with its frequent and well equipped trains and splendid roadbed, is best prepared to serve the public. For circulars or any desired information, address

W. J. BLACK, G. P. A., Topeka, Kan.
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WANTED—A dust sprayer. JOHN F. EBERTS, Lathrop, Mo.

Catalogues Received.

Foster Nurseries, Normal, Ill.—Price-list of general line of nursery stock.

Vaughan's Seed Store, Chicago, Ill.—This catalogue is one of the good seed catalogues, with a very attractive cover design.

Kanaas Home Nursery, Lawrence, Kan.—A small price-list, with many of the standard fruits listed, as well as many specialties. Among the latter are a number of varieties of native persimmon.

Kitselman Bros., Muncie, Ind.—Catalogue No 11, describing the different styles of coiled spring fencing manufactured by this firm. The catalogue is illustrated with farm scenes, showing the fence in actual use.

Home Nursery, Lafayette, Ill.—A small nursery catalogue, well printed, and illustrated with some good illustrations. A very neat little book, and is deserving of special mention on account of the original illustrations.

Conrad & Jones Co., West Grove, Pa.—This firm makes a specialty of roses, cannas, etc., and its catalogue is full of illustrations and descriptions of flowers of all kinds. It is one of the best catalogues in this line.

H. S. Wiley & Son, Cayuga, N. Y.—A good nursery catalogue, listing a full line of stock, with particular attention to commercial sorts. Among comparatively new fruits the Perfection currant and Ruby Red raspberry are listed.

Gateway Nursery Co., LaMars, Iowa.—This firm issues a nursery catalogue, which is a good one, and now has added a new feature, that of seed corn, so another catalogue is issued. Both are well gotten up and tell their story in a straightforward manner.

Planters' Seed Co., Springfield, Mo.—A general seed catalogue, which sticks pretty close to the staple lines. In addition to having a full line of seeds, poultry supplies, etc., are advertised. This firm is distributing agent for Goulds Mfg. Co., and can furnish the spray pumps manufactured by this firm.

M. J. Wragg Nursery Co., Des Moines, Iowa.—This is one of the neatest catalogues we have received this season. The catalogue is well written, well printed, well illustrated, and is a good one in every way. It lists a full line of stock, with special pages devoted to ornamentals and their proper planting.

Ames Plow Co., Boston, Mass.—In addition to describing the full line of garden tools made by this firm, its catalogue contains some excellent prize articles on gardening, and the book has an added value on this account. This firm manufactures Matthews' New Universal seeding and cultivating implements, and the entire line is described in the catalogue.

J. W. Hall, Marion Station, Md.—This is a catalogue of seed potatoes (second crop), and strawberry plants. Among the latter Mr. Hall is pushing Olive Pride, a strawberry which was introduced two years ago, and which the originator says has proved to be a good one wherever tested. It is a seedling of Crescent, but is claimed to be a big improvement over that old sort.

Model Carriage & Harness Co., 115 West Sixth street, Cincinnati, Ohio.—This firm handles a full line of buggies and harness, and nothing more, and its catalogue is devoted solely to these lines. The book is well printed, and the different styles of harness and vehicles are illustrated; the book is large and is of value to everyone who is considering buying a vehicle of any kind or a set of harness.

Woodview Nurseries, Mt. Holly Springs, Pa.—This firm has not an elaborate catalogue this year, but instead it has a 16-page folder, which is full of very interesting matter. In fact, while this folder lists a full line of nursery stock, including ornamental trees and shrubs, more space is used to give good advice as to planting and pruning than is used for describing the different varieties. This is an interesting booklet. The list of peaches, and the advice concerning peach culture, is especially good. It is seldom one sees as much good, sound common sense in such a small catalogue.

Geo. H. Whiting's Nurseries, Yankton, S. D.—This nursery is located in the Northern part of the fruit belt, but the catalogue is a good one, with complete list of varieties which can be grown so far north. This is the twenty-first annual catalogue, and naturally Mr. Whiting is in position to give good advice to planters in that part of the country. A specialty is made of forest-tree seedlings and of evergreens, which are carried in full line of varieties. The nursery sells direct to planters, does not substitute varieties, and demands cash in advance. It is, therefore, operating along right lines, and is a good concern, with a good catalogue.

H. W. Buckbee, Rockford, Ill.—This seed catalogue is a little late in arriving, but is a good one nevertheless. The book is a large one, and lists a full line of seeds, also plants for the flower garden, roses, etc. A feature of the catalogue is a lot of collections of flower and garden seeds, plants, etc., which are offered at bargain prices for the entire collections. These collections include such offers as 35 packages of vegetable seeds for $1, 15 varieties of flower seeds for 25 cents, four fine roses for 25 cents, etc. There are also collections of chrysanthemums, geraniums, etc., included in this offer. Among the novelties offered are Buckbee's Cardinal onion, Beefsteak tomato, Vigorosa peas, etc.

J. S. Kemp Mfg. Co., Waterloo, Iowa.—This is a catalogue which describes the Twentieth Century Manure Spreaders—but it does even more than that. It is a treatise on the use of barnyard manure, and contains a great deal of other information which farmers and fruit growers need. The manure spreader is described in every detail, and illustrations are presented showing the various parts of the machines. The catalogue is a model catalogue of its kind, for it describes the machine and tells what it will do. The book is well illustrated and well printed, and Fruit-Grower readers should send for it. Persons who have never used a manure spreader, especially, should study this book carefully, for it will tell them how to use manure most effectively and economically.

Lee's Summit Star Nurseries, Lee's Summit, Mo.—This firm has not sent out a catalogue this season. Instead, J. S. Butterfield of this firm has prepared and sent out what he calls "almost a catalogue." It is a 16-page folder, and tells in a most interesting way, what this nursery has to offer and the sorts it recommends for planters in its territory. The matter is all good, and the advice sound to the core. This firm is an old-established one, and its recommendations as to varieties are made after many years of experience.

Templin Co., Calla, Ohio.—This is a catalogue of seeds, plants and nursery stock. Two features which will especially interest Fruit-Grower readers are the pages devoted to the Cardinal strawberry and the Portage gooseberry. These fruits have been described in our columns by Mr. Geo. J. Streator, formerly of Garrettsville, Ohio. Mr. Streator originated the Cardinal strawberry, which has been most favorably commented upon by all who have seen it. Mr. Streator also grew the Portage gooseberry, and while it has been grown for some time, it has not been generally tested. Both are offered for sale by the Templin Co., and those interested in securing better fruits will do well to test these varieties.

Spraying Machines.

Many of our readers interested in spraying, we would direct their attention to page — this issue, where the advertisement of The H. L. Hurst Manufacturing Co., Canton, Ohio, appears of their latest and greatest invention, a Combination 4-Row Potato and Orchard Sprayer. From the many hundreds that the company is annually selling, it appears to us that it certainly must be a "winner" with the farmers everywhere. The greatest feature lies in the fact that it can be used for any and every kind of spraying (taking but a few minutes to change it from field to orchard use), and still selling at a low figure in comparison with the valuable results produced by its use. Many growers of only two acres are reported as getting these machines by the company, and after only first season's use, come out far ahead of the price paid for it.

For potatoes, strawberries, orchards, all kinds of truck, cotton, tobacco, vineyards, etc., this machine must certainly be invaluable, and by the statement above is easily affordable.

The company also make an adjustable Barrel Spray Pump, "Fitz-all" by name, on account of the fact that it fits all sized barrels or tanks. The plunger, valve, seats, etc., being full brass makes the pump practically indestructible. Their special hardened brass ball valves (which they guarantee for ten years) insures forever usage, while the two paddle agitators and one auxiliary agitator and strainer cleaner insures most thorough agitation. As an all-around orchard spray pump, this "Fitz-all" would certainly pay to be investigated by any of our interested readers. Better write the company (which has been in business for over twelve years) and we assure you of prompt and excellent information, either about their machines or on any subject concerning spraying, etc., mentioning that above matter appears in this issue of The Fruit-Grower.

INVEST IN CALIFORNIA VINEYARDS.

The California Development Co. of Kansas City, Mo., whose ad. appears on page 49, presents an attractive investment proposition to the readers of the Western Fruit-Grower, which will bear the closest investigation. Vineyards are located near Sacramento, California, and possess the richest soil and is more productive, than in any other part of the country. Investors have found that it is much more profitable to invest their money in vineyard lands than to put it into other fruits. This means a steady income of at least a period of 50 years with scarcely a failure. There seems to be no doubt but what in the near future California will far surpass Italy and France, and those who make an early investment will receive a Trust bond which guarantees success by the investment, or money is refunded. Write to them today for full particulars.

"The best that money, location, and experience can produce."

Cannedy Trees

are the best that can be grown. You can get no better, no matter what you pay. A complete line for spring delivery. Write for prices. Salesmen wanted. Nurseries at Carrollton and Jerseyville.

JOHN A. CANNEDY, Carrollton, Ill.

Apples Wanted

Also Potatoes and Onions.

We want your consignments, offer you the best markets in the country, prompt returns and satisfactory service; 36 years in the produce business means that we deal **fair and square.** Refer to leading banks and commercial agencies.

Write or wire us what you have to offer. **Do it right now.**

C. C. CLEMONS & CO.

Second and Grand Avenue,
KANSAS CITY, MISSOURI

A

Sure Way

to make money is by sending us your shipments of **Fruits, Butter, Eggs and Poultry**

COYNE BROS.

COMMISSION MERCHANTS.
160 South Water Street, Chicago.

Sandusky & Co.

General Commission

116 South Third Street and 115 Market Square St. Joseph, Mo.

Wholesale Fruits and Produce
Berries a Specialty

Dealers in Berry Box Material, Grape Baskets, Egg Case Material. All kinds of Baskets in stock. Established 1864.

Moore & Rehsteiner

FOREIGN FRUIT IMPORTERS AND COMMISSION AGENTS

ANTWERP, BELGIUM

Cable address Moore (A. B. C. Code, 5th Edition)

Consignments of all kinds of fresh fruit solicited. Well established connection in Belgium and Holland. Best and cheapest route to South Germany, Switzerland and Austria.

Special 60 Day Offer

To introduce Our Latest Large, Powerful Achromatic Telescope, The Excelsior

NEEDED ON FARM, SEA OR RANCH

POSITIVELY such a good Telescope was never sold for this price before. These Telescopes are made by one of the largest manufacturers of Europe, measure closed 12 inches and open over 3½ feet in 5 sections. They are BRASS BOUND, BRASS SAFETY CAP on each end to exclude dust, etc., with POWERFUL LENSES, scientifically ground and adjusted. GUARANTEED BY THE MAKER. Heretofore, Telescopes of this size have been sold for from $5.00 to $8.00. Every sojourner in the country or at seaside resorts should certainly secure one of these instruments; and no farmer should be without one. Objects miles away are brought to view with astonishing clearness. Sent by mail or express, safely packed, prepaid, for only 99c. Our new catalog of Watches, etc., sent with each order. This is a grand offer and you should not miss it. We WARRANT each Telescope JUST AS REPRESENTED or money refunded. WANTS ANOTHER: Brandy, Va., Gents.—Please send another Telescope, money enclosed. Other was a bargain, good as instruments costing many times the money.—R. C. ALLEN. Send 99c. by Registered Letter, Post-Office Money Order, Express Money Order or Bank Draft payable to our order, or have your storekeeper or newsdealer order for you.

KIRTLAND BROS. & CO.
Dept. FG 90 Chambers St.
NEW YORK

COSTS YOU NOTHING

TO GET THIS GENUINE SEAL GRAIN LEATHER

HAND BAG

This beautiful hand or wrist bag is the newest design lined with silk moreen. Has an inside pocket containing separate purse, silver clasps, fancy braided leather handle. We will give you this bag **Free** for simply selling six "Up-to-date" Skirt and Waist Supporters at **25c each. You send no money,** just your name and address. We then send you postpaid six of the Supporters. When you have sold them, return us the $1.50 and your **Handsome Hand Bag** will be shipped **promptly.** You take no risk. We trust you with our goods, and take back what you can't sell. Nothing could be easier. The "Up-to-date" is the simplest and most serviceable article of its kind on the market to-day. Does not require the sewing on of any hooks, buttons, etc., on either Waist or Skirt, and the **Only one** with the **Dip Front Effect** attachment. Used by ladies, young and old. Write to-day—and I also receive our large list of premiums offered.

THE UP-TO-DATE MFG. CO., Dept. 28
256 West 116th St., New York City.

YOU Cannot LOSE

if you buy SUPREME OIL & GAS CO. stock now while it is selling

AT 5 CENTS PER SHARE.

PAR VALUE $1.00. It will sell at 10 cents or higher within a very short time, with good prospects of its selling at 50 cents to $1.00 and paying BIG DIVIDENDS almost before you know it. This company owns about 480 acres of the best oil lands in Kansas now being developed. Less than six months ago we advised our clients to buy Anchor Oil & Gas stock when it was selling at 5 cents per share. Every prediction we made concerning "Anchor" has been more than fulfilled. They now have four of the best producing wells in the district and drilling more. Stock now quoted at 50 cents a share and hard to buy at that. We believe the "Supreme" will prove equally as good if not better. Only a Limited Amount of Stock for Sale at Present Price. BUY NOW, if you want to make good big money. Write for "Supreme" Prospectus. DON'T WAIT. Address,

UNION SECURITY CO.,
534 Gaff Bldg. Chicago, Ill.
Booklet "How to Judge Stocks," FREE.

FREE

COUPON No. 90,000

If you are suffering with **Rheumatism, Neuralgia, Kidney Trouble, Colds, LaGrippe, Catarrh or Asthma** cut out this advertisement and send it to us with your name and address and a trial bottle of **"5-DROPS,"** the great household remedy, will be sent to you absolutely **FREE,** postpaid. **"5-DROPS"** is a positive cure for these diseases. Has cured thousands of cases that were pronounced incurable. Will cure you. Write today for a trial bottle.

5 DROPS [TRADE MARK]

SWANSON RHEUMATIC CURE CO.,
160-164 Lake St., Chicago.

MEN WANTED EVERYWHERE

To distribute circulars, samples, tack signs and do general advertising; good pay. Northampton Co., Dept. 12, Box 1562, Philadelphia.

Crop Reports for March.

We present herewith reports from our correspondents concerning condition of fruit trees and plants, with prospects for fruit. It will be noted that peach buds have been generally killed throughout the Middle West and in the Southeastern states, even down into the Georgia peach country. Bush fruits have been injured somewhat, but it is found, in many cases, that these fruits were injured last fall, rather than by the severe winter. Apples and strawberries promise especially well in all sections, up to present time. Strawberries were generally protected during the cold weather by a covering of snow, and apple trees were in good condition to withstand severe weather. The summary of our reports follow:

Decatur, Ark.—Peach buds are all killed here; so are Japanese plums and Kieffer pears. Raspberry canes are badly damaged, and it is thought that blackberry canes are also hurt. Other fruits and berries seem to be safe. Rabbits have damaged trees, due to the heavy snow fall—E. N. P., Jr.

Clarksville, Ark.—Peaches here promise well; 25 to 40 per cent of the buds were killed, but this will mean finer fruit.

Bentonville, Ark.—Strawberries in good shape; blackberries and raspberries fair. Grapes all right. Peaches mostly killed. Apple trees in good condition, with prospects for fair crop. Snow protected atrawberries.—I. B. L.

Mammoth Springs, Ark.—Strawberries promise 75% of crop, and other small fruits in good condition. Peaches killed. Apples promise good crop, with trees in good condition. Winter has been record-breaker, but no damage except to peaches and Japan plums.—T. A. S.

Huntington, Ark.—Franklin, Scott and Crawford Counties report peaches killed. In Sebastian County there will be 20 to 30% crop in southern part. Prospects for best apple crop for years.—L. E. L.

DeQueen, Ark.—Peach crop was never more promising; will have probably 20 or 25 cars of Elbertas from this place.—A. J.

Montrose, Colo.—Peaches seem to be all killed here, and some of the trees are injured. Coldest weather we have ever known in this valley. —O. M. K.

Canon City, Colo.—Large acreage of strawberries in good condition. Grapes are all right. Apples promise well. Foreign plums injured by extremely cold weather—J. W. W.

Rocky Ford, Colo.—Raspberries injured by winter somewhat. Peach buds killed. Apples promise best crop yet; trees in fine condition. This county has about 12,000 acres of fruit trees, 5,000 in bearing. No winter injury except peaches.—W. F. C.

Rome, Ga.—Small fruits of all kinds promise well. Peaches have fair showing on high lands; on low lands will have little, if any, crop. Apples in good shape.—G. H. M.

Clayton, Ill.—Strawberries in fine shape; bush fruits somewhat injured by cold weather. Peaches all killed. Prospects for apple crop only fair, on account of injury by apple scab last summer. —G. A. S.

Hamilton, Ill.—Strawberries in good shape. Peach buds killed. Apple prospects fair; buds swelling.—H. D. B.

Quincy, Ill.—Strawberries promise well; bush fruits badly injured by winter. Peach buds all dead. Apple trees in good condition, with prospects for good crop.—C. H. W.

Centralia, Ill.—Strawberries, bush fruits and grapes are in good condition. Peach buds mostly killed, although some buds are left. Apple trees have plenty of buds and look well.—C. H. P.

Savoy, Ill.—Strawberries are in fair condition. Apple trees appear in good condition, but fruit buds are injured somewhat, but too early to tell to what extent.—R. L. D.

Vincennes, Ind.—Peaches badly injured, but everything else in good shape. Apple leaves fell late in fall, but trees appear in good condition.—H. M. S.

Lawrence, Ind.—Strawberries stood winter well; bush fruits appear in good condition. Peaches are douhtless badly damaged. Apple prospects good. An increasing interest in fruit culture.—W. B. F.

Villisca, Iowa.—Strawberries look fine; been under snow all winter. Raspberries and blackberries badly damaged. Peach buds killed; trees all right. Apple prospects good; acreage of apples being increased.—H. S. A.

Glenwood, Iowa—Strawberries in good condition; bush fruits killed back somewhat. Peach buds killed; trees damaged. Apple prospects good. Apple trees matured wood well last fall, and fruit buds well developed.—J. P. J.

Topeka, Kan.—Strawberries in good shape; fear raspberries are badly damaged. Grapes are injured, and peaches are killed. Apple prospects seem all right.—W. H. B.

Admire, Kan.—Peach buds killed here. Apples seem in good shape, with prospects for bumper crop.—C. H. M.

Holton, Kan.—Strawberries in first-class condition; bush fruits generally good, some varieties damaged. All peach buds killed. Apple prospects good so far. Winter injury not great, except to peaches.—F. W. D.

Rosedale, Kan.—Strawberries all right; raspberrics affected by anthrachnose. Goethe and some of the tender grapes killed hack; Concord all right. Peaches killed. Apples promise well. Pears may be injured more than indicated at present.—F. H.

Leavenworth, Kan.—Strawberries in good condition. Tender sorts hush fruits injured. Grapes generally in good condition, although tender varieties may be injured. Budded peaches gone. Apple prospects could not be better at this time. Japan plum and cherry buds plump and green; Morello cherries seem injured.—E. J. H.

Wichita, Kan.—Strawberries have been injured; some badly. Peaches all killed. Apple trees in good condition, and very fair prospecta for crop.—E. G. H.

Amherst, Mass.—Too early to say as to small fruits. Peaches all right generally. Good prospects for apples. Winter has been long and steady, but few low temperatures.—F. A. W.

Kansas City, Mo.—Raspberries and blackberries have been injured in some locations. Pears somewhat injured; plums and cherries generally in good condition. Peach crop generally killed. Applea are unhurt. Strawberries and hardy varieties of grapes promise well.—L. A. G.

Hannibal, Mo.—Peachea killed here, and it is believed some treea bave been badly damaged or killed outright. Merchury waa 28 degreea below zero on the morning of Feb. 13.—J. S. S.

Columhia, Mo.—Strawberries slightly injured by dry summer. Other small fruits somewhat injured by the winter. Only tender grapes hurt. Peaches practically all killed, except in favorable locations. Apple trees uninjured; prospects good for crop.—J. C. W.

Oregon, Mo.—Strawberries promise full crop. Raspberries 25 per cent; grapes 65 per cent. Peach buds killed and trees badly damaged. Apples promise well.—N. F. M.

Koshkonong, Mo.—Small fruits all in good condition. Peach buds practically all dead. Apples in good shape.—T. M. C.

Springfield, Mo.—Strawberries promise 60 per cent crop. Fair prospects for other small fruits. Cherries all right. No budded peaches. Apple prospects excellent.—G. A. A.

LaPlata, Mo.—Strawberries all right. Tender varieties hush fruits killed, others in good condition. No peaches; trees hadly injured. Good prospects for apples if peopre spray. Pear trees injured; Morello cherry trees dead.—J. E. M.

Seymour, Mo.—Peaches killed. Raspberries are injured. Strawberries all right, but owing to dry weather last fall we have not a good set of plants. Quality of fruit should be hetter on this account.—McM.

Odessa, Mo.—Berries not hurt. Peaches killed, and trees damaged. Grapes all right. Apple trees in good shape, with good prospects for fruit. Apple buds two weeks later than usual, which protect them from late freeze.—S. H. P.

Lehannon, Mo.—Strawberries in good condition. Bush fruits damaged somewhat. Grapes in good shape. Peach buds all killed. Apples in good condition.—A. T. N.

Rushville, Mo.—Strawberries promise good crop. Grapea also. Peach buds dead. Apple trees somewhat injured. Prospects for 60 per cent crop. Bush fruit canes seem injured, and peach trees are hadly hurt.—B. F. S.

Tecumseh, Neb.—Strawberries looking fine; bnsh fruits somewhat frozen above snow line. Peach trees hurt aomewhat; very few live fruit buds.—W. G. S.

York, Neb.—Most severe winter. Peaches seem all killed; plums and cherries all right; Burbank and Ahundance plums stood 30 degrees helow zero. Grapes and hush fruits all right. Apples, cherries and strawberries promise full crop.—G. H. P.

Fayetteville, N. Y.—Too early to tell as to small fruits. Apple trees show good setting of buds. No winter injury apparent.—F. E. D.

Lockport, N. Y.—Strawberries covered with a foot of snow; too early to tell as to hush fruits. Peach buds look all right. Apple trees passed through winter in splendid shape. Plum, peach, cherry and pear trees seem exceptionally well filled with healthy fruit buds.—D. T. M.

Adams Basin, N. Y.—Outlook for berry crop is good; ground covered with snow. Vineyards promise well. Good prospects for peaches; hundreds of acres set this spring. Apple trees in good condition, and judging from buds have prospects for good crop. This is emphatically a fruit section, and many trees will be set this spring.—C. O. B.

Jay, N. Y.—Too early to tell as to conditions, as snow is still on the ground. Apple treea seem in good shape.—H. T. S.

Delaware, Ohio.—Large acreage of strawberries under snow. Bush fruits in average condition. Practically no peaches here. Apple treea seem in good condition, with no apparent damage from cold.—F. P. V.

Rockwood, Ohio.—Strawberries promise only fair, having heen hurt by dry fall. Three-fourtha peach buds killed. Apple prospects good.—U. T. C.

Yukon, Okla.—Strawberries in fine condition. Blackberries all right; raspberries hurt. Grapes all right. Peach buds dead. Apple trees in healthy condition, with prospects for good crop.—A. S. P.

Portlsnd, Ore.—Small fruits in good condition. Peaches in bloom. Apple trees in good condition, with prospects good. Have had a fine open winter.—G. H. L.

Forest Grove, Ore.—Strawberries in No. 1 condition. Other small fruits and grapes good. Peaches almost in hloom. Apples in good shape. All kinds of fruits well advanced, and a late frost would injure crop.—W. R. H.

Harrisburg, Pa.—Strawberriea covered with snow; bush fruits all right. Grapes passed winter in good shape. Young peach trees whicb are free from scale are all right, as are apple trees. Notice less damage by freezing back than usual. —G. H.

Alvin, Texas.—Acreage of strawberries amaller than usual. Dewberries promise fair crop. Freeze in Februnry damaged fruit 25 per cent.—J. W. H.

Swan, Texas.—The freeze of February 13 damaged peach crop 50 to 75 per cent. Otherwise no damage. Strawberries in fine condition, and we expect to have 40 to 50 cars, heginning about April 10.—D. S. W.

Tyler, Texas.—Peach buds half injured on old trees; not so hadly on young trees. This will make finer fruit. Strawberries blooming nicely. Carload shipments begin about the middle of April.

Vancouver, Wash.—Strawberries and other small fruits in best of condition. Apple trees in good condition, with prospects for good crop. Very early spring, and there is danger of late frosts.—F. S. F.

Saulshury, W. Va.—Peaches hadly injured here.—J. L. D.

The Private Car Lines.

It seems there is a difference of opinion as to the private car line matter. Some growers claim the system is not an unmixed evil. J. H. Hale testified before the investigating committee in Washington, and his testimony has been taken as favorable to the private-car contracts. The point Mr. Hale made was that if the private-car lines are done away with, and the railroads are left to provide refrigerator cars, they will not have enough cars to handle a heavy fruit crop. He says that his fruit is shipped over the Central of Georgia railroad, and if this company is to supply the refrigerator cars, not enough will be provided, for the company could hardly afford to have a great number of cars which are used perhaps six weeks in a year, and then lie idle during the remainder of the year. The Armour company, however, can use the cars in Georgia during the peach season, in the California fruit trade during the winter, and in the meat business at other seasons, so that the cars should be in use all the year.

This is a good point. It would seem that a company which can use its cars the year round should be in position to make better rates than can be made by a company which can use the cars during only a portion of the season. But what are the facts? The Armour company has advanced the rates for refrigeration over the charges which were formerly made by the railroad companies themselves. It is not the system in itself which is complained of, but the monopoly which permits the Armour

Directory of Fruit-Growers' and Shippers' Associations

(NOTE.—If your association is not contained in the following list, or if you know of associations which ought to be here, send name of association and address of secretary. No charge.)

ARKANSAS.

Arkansas State Horticultural Society—Prof. Ernest Walker, Sec., Fayetteville, Ark.

Ashdown Truck Growers' Assn.—Mr. Lott, Sec., Ashdown, Ark.

Bentonville Fruit-Shippers' Union—I. B. Lawton, Sec., Bentonville, Ark.

Bentonville Horticultural Society—Geo. Wolsey, Sec., Bentonville, Ark.

Cove Fruit-Growera' Union—Lewis Fortner, Sec., Cove, Ark.

Decatur Fruit-Growers' Aasn., Decatur, Ark.—E. N. Plank, Jr., Sec.

DeQueen Fruit and Vegetable Growers' Assn. James L. Cannon, Sec., DeQueen, Ark.

Gentry Fruit-Growers' Aasn.—O. W. Patterson, Sec., Gentry, Ark.

Grannis Melon Growers' Assn.—Mr. Burdette, Sec., Grannis, Ark.

Gravette Fruit-Growers' Assn.—E. H. Gosper, Sec., Gravette, Ark.

Gravette Horticultural Society—A. C. Veach, Sec., Gravette, Ark.

Jannssen (Vandevort P. O.) Truck Growers' Assn.—G. D. Hinkle, Sec.

Leslie Horticultural Society—Prof. R. C. Walton, Sec., Leslie, Ark.

Mammoth Springa Fruit-Growers' Assn.—T. A. Sharp, Sec., Mammoth Springs, Ark.

Mena Horticultural Society—A. W. St. John, Sec., Mena, Ark.

Mt. Pleasant Horticultural Society—Prof. C. E. Boyd, Sec., Mt. Pleaaant, Ark.

Ravanna Truck Growers' Assn.—R. P. Yates Sec., Ravanna, Ark.

Rogers Fruit Shippers' Union—J. McFarlane, Sec., Rogers, Ark.

Siloam Springs Fruit-Growers' and Shippers Assn.—C. A. Ford, Sec., Siloam Springs, Ark.

Springdale Fruit-Growers' Union — James T. Craig, Sec., Springdale, Ark.

Sulphur Springs Fruit-Growers' Aasn.—J. H Edgerton, Sec., Sulphur Springs, Ark.

Winthrop Fruit-Growers' Assn.—W. A. Black, Sec., Winthrop, Ark.

ILLINOIS.

Illinois State Horticultural Society—L. R. Bryant, Sec., Princeton, Ill.

Central Illinois Horticultural Society—F. S. Phoenix, Sec., Bloomington, Ill.

Northern Illinois Horticultural Society—Jacob Friend, Sec., Nekoma, Ill.

Southeru Illinois Horticultural Society—E. G. Mendenhall, Sec., Kinmundy, Ill.

Alton Horticultural Society—Miss Hannah Davis, Sec., Godfrey, Ill.

Calhoun County Fruit-Growera' Aasn.—Wm. S. Wilson, Sec., Hardin, Ill.

Crawford County Fruit-Growers' Assn.—Geo. N. Parker, Sec., Robinson, Ill.

Effingham County Horticultural Society—G. F. Taylor, Sec., Effiugham, Ill.

Goreville Fruit-Growers' Assn.—T. M. Jonea, Sec., Goreville, Ill.

Jerseyville Fruit-Growers' Assn.—Isaac D. Snedeker, Sec., Jerseyville, Ill.

Kankakee Valley Horticultural Society—F. A. Baldwin, Sec., Kankakee, Ill.

Marion County Horticultural Society—E. G. Mendenhall, Sec., Kinmundy, Ill.

Mississippi Valley Apple Growers' Assn. — James Haudly, Sec., Quincy, Ill.

Richland County Horticultural Society—Lee Wilson, Sec., Olney, Ill.

Rock River Horticultural Society—Fred A. Lawton, Sec., Dixon, Ill.

Springfield Horticultural Society—H. Emerson Phelps, Sec., Springfield, Ill.

Wabash County Horticultural Society—Hallock Shearer, Sec., Gard'a Point, Ill.

Warsaw Horticultural Society—Homer D. Brown, Hamilton, Ill.

INDIAN TERRITORY.

Gans Melon Growera' Asan.—W. E. Harley, Sec., Gans, Ind. Ter.

Poteau Fruit Co.—Ed. McKenna, Sec., Poteau, Ind. Ter.

Salisaw Fruit-Growers' Assn.—W. A. Wheeler, Sec., Salisaw, Ind. Ter.

KANSAS.

Kansaa State Horticultural Society—Wm. H. Barnes, Sec., Topeka, Kan.

Barber County Horticultural Society—C. A. Blackmore, Sec., Sharon, Kan.

Lyon County Horticultural Society—W. P. Walters, Sec., Emporia, Kan.

Sedgwick County Horticultural Society—E. H. Cooley, Sec., Wichita, Kan.

Wathena Frul.-Growera' Assn.—Geo. W Kinkead, Sec., Wathena, Kan.

LOUISIANA.

Cooper Fruit and Truck Growers' Assn.—J. R. Noll, Sec., Cooper, La.

DeQuincey Fruit-Growers' Assn.—T. F. Fauat, Pres., DeQuincey, La.

Hornbeck Fruit and Truck Growers' Assn.—Dr. F. R. Jones, Sec., Hornbeck, La.

Lake Charlea Horticultural Society—William Teal, Sec., Lake Charlea, La.

Leesville Fruit and Truck Growers' Assn.—V. O. Craft, Sec., Leesville, La.

Many Fruit and Truck Growers' Assn.—V Petty, Sec., Many, La.

Orangeville Fruit and Truck Growera' Assn.—J. M. Coverly, Sec., Orangeville, La.

Rodessa Truck Growers' Assn.—G. W. Rutledge, Sec., Rodessa, La.

Vivian Fruit-Growers' Union—J. A. Heath, Sec., Vivian, La.

MISSOURI.

Missouri State Horticultural Society—L. A. Goodman, Sec., 4000 Warwick Boulevard, Kansas City, Mo.

Ash Grove Fruit-Growers' Asan.—J. H. Lyharger, Pres., Ash Grove, Mo.

Aurora Fruit-Growers' Assn.—Fred Applehy, Sec., Aurora, Mo.

Bolivar Fruit-Growers' Assn.—W. A. Matheny, Sec., Bolivar, Mo.

Billings Fruit-Growers' Assn.—Wm. Watkin son, Sec., Billings, Mo.

Butterfield Berry Growers' Shipping Assn.—W. D. Cowherd, Sec., R. F. D. No. 1, Purdy, Mo.

Cabool Fruit-Growers' Assn.—L. M. Moore, Sec., Cabool, Mo.

Diamond Strawberry Aasn.—S. B. Keagy, Sec., Diamond, Mo.

Dixon Fruit-Growers' Assn.—Dr. W. C. Carter, Sec., Dixon, Mo.

Exeter Fruit-Growers' Assn.—N. J. Lucky, Sec., Exeter, Mo.

Franks Fruit-Growers' Assn.

Greene County Fruit-Growera' Asan.—J. W. Robinson, Sec., Springfield, Mo.

Greene County Horticultural Society — Earl Hopkins, Sec., Springfield, Mo.

Logan Fruit-Growera' Aasn.—G. W. Logan, Sec., Logan, Mo.

Marionville Fruit-Growers' Aasn.—J. W. Coleman, Sec., Marionville, Mo.

Marshfield Horticultural Society—Dr. Ed. James, Sec., Marshfield, Mo.

Missouri Valley Horticultural Society—Mrs. Harriet E. Chaudler, Sec., R. F. D. No. 2, Argentine, Kan.

Monett Berry Growera' Union—E. A. O'Dwyer, Sec., Monett, Mo.

Mouett Fruit-Growers' Aaan.—J. H. Johnson, Sec., Monett, Mo.

Mt. Vernon Fruit-Growers' Union—S. Henson, Sec., Mt. Vernon, Mo.

Neosho Fruit-Growers' Assn.—F. H. Speakman, Sec., Neosho, Mo.

Nevada Fruit-Growers' Assn.—W. H. Litson, Sec., Nevada, Mo.

Noel Fruit-Growers' Aaan.—F. A. Marshall, Sec., Noel, Mo.

Noel Strawberry Growers' Asan.—S. A. Meade, Sec., Noel, Mo.

Olden Fruit-Growers' Assn.—J. H. Evans, Sec Olden, Mo.

Ozark Fruit-Growers' Asan. — Headquartera, Springfield, Mo., G. A. Atwood, Sec.-Treaa.

Peirce City Fruit-Growera' Aasn. — R. F. George, Sec., Peirce City, Mo.

Platte Purchase Fruit-Growers' Assn.—James M. Irvine, Sec., St. Joseph, Mo.

Pomona Fruit-Growers' Assn.—F. N. Richards, Sec., Pomona, Mo.

Purdy Fruit-Growera' Assn.—F. S. Lane, Sec., Purdy, Mo.

Republic Horticultural Assn.—Dr. E. L. Beal, Sec. and Mgr., Republic, Mo.

Sarcoxie Fruit-Growera' Union—D. McNallie, Sec., Sarcoxie, Mo.

Sarcoxie Gandy Assn.—L. C. Warmington, Sec. Sarcoxie, Mo.

Sarcoxie Horticultural Society.—J. W. Wagner, Sec., Sarcoxie, Mo.

Seligman Fruit-Growers' Asan.—W. M. Murray, Sec., Seligman, Mo.

St. Joseph Horticultural Society—A. W. Bloomfield, Sec., St. Joseph, Mo., R. F. D. No. 2

Tipton Ford Fruit-Growers' and Shippers' Assn.—W. D. Cox, Mgr., R. F. D. No. 1, Joplin, Mo.

Turner Fruit-Growera' Aasn.—C. F. Patterson, Sec., Turner, Mo.

Verona Fruit-Growers' Union, Verona, Mo.—N. M. Browning, Sec.-Mgr.

Washburn Fruit-Growers' Assn.—W. B. Adcock, Sec.

Willow Springs Fruit-Growers' Assn.—Amos Brown, Sec., Willow Springs, Mo.

TEXAS.

Atlanta Fruit and Truck Growers' Assn.—J. M. Fletcher, Sec., Atlanta, Texaa.

Bloomburg Truck Growers' Assn.—W. A. Smith, Sec., Bloomburg, Texas.

Katy Fruit and Truck Growera' Assn.—J. E. Cabiniss, Sec., Katy, Texas.

Pasadena Fruit and Truck Growers' Assn., Pasadena, Texas—R. E. Parks, Sec.

Swan Fruit and Truck Growers' Aasn.—D. S. Wood, Gen. Mgr., Swan, Texaa.

Texarkana Fruit-Growers' Assn.—L. A. Whatley, Sec., Texarkana, Texas.

MISCELLANEOUS.

American Apple Growers' Congress—T. C. Wilson, Sec., Hannibal, Mo.

Fruita Fruit and Produce Assn.—W. C. Rhinehart, Mgr., Fruita, Colo.

Fruit-Growers' Assn., of Adams Co., Pa.—Edward C. Tyson, Sec., Flora Dale, Pa.

Hood River Apple Growers' Union, Hood River, Ore.—E. H. Shepard, Mgr.

Hood River Fruit-Growera' Union, Hood River, Ore.—E. H. Shepard, Mgr.

Milton Fruit-Growers' Union, Milton, Ore.—W. C. Hopson, Sec.

Union Fruit-Growers' Assn., Union Ore.—W. J. Townley, Sec.

Northeast Georgia Peach Growers' Assn.—R. E. Andoe, Sec., Gainesville, Ga.

Indiana State Horticultural Society—W. B. Flick, Sec., Lawrence, Ind.

Iowa State Horticultural Society — Wesley Greene, Sec., Des Moines, Iowa.

Meridan Fruit-Growers' Association, Meridan, Idaho—W. N. Yost, Sec.

Michigan State Horticultural Society—C. E. Bassett, Sec., Fennville, Mich.

New Jersey Horticultural Society—Miss Mary Woodward Budd, Sec., Holly, N. J.

North Yakima Horticultural Union—J. M. Brown, Sec., North Yakima, Wash.

Pennsylvania Horticultural Society — David Rust, Sec., Horticultural Hall, Broad St., Philadelphia.

Berkeley County (W. Va.) Horticultural Society—H. L. Smith, Sec., Martinsburg, W. Va.

Commission Men Take Notice

Tipton Ford Berry Association wants to correspond with one that wants to buy in small lots; one that will buy berries on track preferred. Address,

W. D. COX, Manager.,
R. F. D. No. 1. Joplin, Missouri.

Reliable Commission Men

The firms whose addresses appear below are all members of the National League of Commission Merchants, which fact insures their reliability. They are in the business to stay, and will appreciate and satisfactorily care for business of Fruit-Grower readers.

COYNE BROS.,
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Fruits, Butter, Eggs, Poultry.

GEO. MIDDENDORF CO., Inc.
Chicago, Ill.
Apples, Fruits, Vegetables, Eggs, Butter and Poultry.

SEESSEL & ASHNER,
Memphis, Tenn.
Produce and Fruits.

company to charge what it pleases for the service rendered.

Here is a statement showing the rates for refrigeration paid from the fruit section of Michigan when the railroad companies operated their own refrigerator cars, and the rates now charged by the Armour company These explain why growers are dissatisfied with present arrangement:

From Michigan to—	Before.	After.
Chicago	$ 7.50	$25.00
Rockford	7.25	37.50
Philadelphia	20.00	50.00
Boston	20.00	55.00
Pittsburg	15.00	35.00

Pleased With Our New Department.

Since the February issue was mailed we have received many letters from readers congratulating us upon the new department we have added, and the following extract from a letter from J. P. Jackson, Glenwood, Iowa, may be taken as a sample of these letters. Mr. Jackson says, in part:

"The February number is the best paper of the kind I ever saw. The whole paper is good, but I think more of the paper than ever before for the reason that I believe it to be a paper that is interested in the welfare of the growers. Am pleased with the stand the paper has taken in regard to freight rates."

Notes from the Associations.

This department is largely taken up this month with reports of fruit prospects. These reports should be of great value to fruit shippers and buyers, and we hope all will help to make them more complete.

A certain horticultural society recently asked for bids for furnishing its members with berry-box materiai. The local commission men all handie this materiál, and when their propositions were submitted it was found that they were making iower rates to individual growers than they made to the association as an organ'zed body. They wanted to do nothing to help would become well organized, and would want to market their own fruits, instead of selling to the commission men. See the point?

This Will Interest Many.

F. W. Parkhurst, the Boston publiisher, says that if any one afflicted with rheumatism in any form, or neuralgia, will send their address to him at 30 Shawmut Bldg., Boston, Mass., he will direct them to a perfect cure. He has nothing to sell or give, only tells you how he was cured after years of search for relief. Hundreds have tested it with success.

Homeseekers' Excursions.

The Chicago Great Western Railway will on the first and third Tuesdays of each month, January to April inclusive, sell homeseekers' tickets at one fare plus $2.00 for the round trip to points in Alabama, Arkansas, Arizona, Colorado, Florida, Georgia, Indian Territory, Iowa, Kansas, Kentucky, Louisiana, Mexico, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, Tennessee, Texas, Utah, Virginia and Wyoming. For further information apply to M. F. Montgomery, City Passenger and Ticket Agent, 414 Felix street, St. Joseph, Mo.

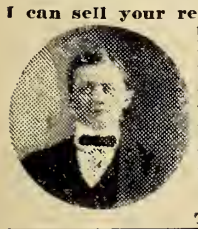
A CHEAP HEART CURE.

A Norwich Lady Tells You What to Use at Home if You Would Cure Yourself at Once.

Alice A. Wetmore, Box 67, Norwich, Conn., says if any sufferer from Heart Disease in any form will write her, she will, without charge, direct them to the perfect cure she used.

We advise everyone interested to get this free information now, for Miss Wetmore is very positive it will lead to their complete cure.

I can sell your real estate or business no matter where located. Properties and business of all kinds sold quickly for cash in all parts of the United States. Don't wait. Write today, describing what you have to sell and give cash price on same.



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Box F. G., Farmer Co., Emporia, Va.

Always mention The Fruit-Grower.

Large bodies of land and ranches; timber land, fruit and truck farms in Kansas, Oklahoma, Texas, Old Mexico, Louisiana, Arkansas, Southern Missouri, Colorado, New Mexico and California. Tell me what you want and where you want it and how much money you will invest if suited and I will send you list of bargains of the kind you want in that locality. I also have small farms and ranches in all parts of said States. I am working above mentioned territory thoroughly. Write me and see how well and how promptly I will serve you. I have land at 35 cents to $15 per acre.
GEORGE W. MORRIS, LYNDON, KAN.

FOR SALE—Farm of 320 acres, one and a half miles from Winchester, Kan.; either quarter section will be sold separate if desired. On the southwest quarter is a house of 8 rooms, a cottage; a barn 24x40, corn crib 10x10, driveway between, all under shingle roof; hog pens, smoke house, five-ton scale, two wells, cistern, corn crib; 500 Missouri Pippin, 250 Gano apple trees, set out nine years ago; 550 Jonathan set out two years ago; 12 acres in strawberries, blackberries, red and black raspberries, two packing sheds. On the southeast quarter are 6,000 Ben Davis, 1,800 Gano apple trees, set out ten years ago, 500 Gano, set out two years ago. Living water the year round on every 40 acres if wanted. Timber on the two quarters. For particulars write Wm. Booth, Winchester, Jefferson County, Kan.

FOR SALE—A 10-acre fruit farm, one mile from railroad station, ten miles from Kansas City; 5-room dwelling; good well; barn for 8 head of stock and other outhouses; 600 pear trees, 150 Keiffer and 50 Duchess in bearing; 600 peach trees bearing; 100 cherry and plum; 50 apple; 1 acre grapes; 1 acre strawberries; 300 currants and gooseberries. For terms and further particulars, address or apply to MRS. MEARRY ZINN, Barry, Clay Co., Mo.

We are the largest dealers in real estate in Grand Valley, the famous peach, apple and pear growing section of Western Colorado. Orchards here 8 years old net the growers from $500 to $700 per acre. The climate is the best in the world and is a specific for lung and throat troubles and asthma. Write us for information. The Home Loan & Investment Co., 357 Main St., Grand Junction, Colo.

FOR SALE—40-acre fruit farm, 2 miles from Olney, Ill.; 25 acres in good bearing apple trees, besides other fruit; near school and church; good 6-room house and cellar, new barn and outbuildings, all in first-class condition; plenty of good water. Price $2,800. J. H. MITCHELL, Olney, Ill.

WANTED—Men, or families, with, or without means, desiring to move to Texas, and buy, lease, or rent lands and grow cotton, corn, fruits and vegetables. W. S. GIBBS, Huntsville, Texas.

FRUIT FARM FOR SALE—Consisting of 29½ acres, planted to all kinds of fruit; buildings all new, and farm in good condition. Two miles and half from good market. F. Leber, Wathena, Kan.

A GOOD PLACE TO LOCATE—On plateau of Cumberland Co., Tennessee, where fruit, corn and potatoes grow to perfection. No cyclones, no floods, no great storms of any kind; less wind than any place you ever lived in; no mosquitoes; perfect natural drainage; best freestone water; very healthy, delightful summers; can plow all winter; abundance of free range for stock. Land $3 to $10 per acre. Write A. E. Payne, Crossville, Tenn.

FOR SALE—On Leesburg and Alexandria Pike, about 12 miles from Washington, D. C., store, dwelling and farm. 27 acres land, in an excellent state of cultivation; about 300 fruit trees, apple, pear and plum, blackberries, red raspberries; never-failing well of good water; dwelling consists of store room, 7 rooms and 2 halls; barn with wagon shed and corn house attached; 2 good hen houses with wire inclosed yards; hog pen; ice house and store room above; about 3 miles from 2 trolley lines to Washington, D. C. Telephone and postoffice at store. Price, $3,500. M. J. SAVAGE, Ashgrove, Va.

FOR SALE—Fine fruit farm, 97 acres of burr oak land, mostly cleared; two thousand apple trees, all winter varieties, from 3 to 5 years set, healthy and in good condition; 80 cherry trees, all bearing; plenty of small fruit; 50 acres of farm land; rest tame pasture; buildings fair; 2 wells, 2 springs; a fine chance for dairying. Spacious front yard dotted with evergreens, surrounded by tall burr oak grove. Terms reasonable. You can't afford to miss this chance. For further information write to A. S. WORTH, owner, Mondamin, Iowa.

FOR SALE—Cheap, Easy Terms, 40-acre orchard, 8 years old, well taken care of, in beautiful Payette Valley near Payette, Idaho, 28 acres in Jonathans, Arkansas Black, Peaches, etc., plenty water, fenced, small house, large barn, well, clear title to property. Owners East and cannot give personal attention. For full particulars address, L. G. Hauenstein, 628 Equitable Bldg., Denver, Colo.

Furuas Fruit Farm, Brownville, Neb., for Sale—Owing to physical inability to give proper care and attention, I will sell my fruit farm. All in full bearing, and prime condition. Even for the unfavorable fruit conditions of 1904, it paid a good per cent profit. For particulars, address ROBT. W. FURNAS, Brownville, Neb.

NURSERY FOR SALE—Grangeville Nursery and Fruit Farm, six acres, just outside the Incorporation; 15,000 young trees and other general nursery stock. One-half acre strawberries; good business established; fine house, with electric lights and city water; barn and other outbuildings; photo of house and grounds, if desired; no irrigation necessary; fine prairie country; no nursery within 75 miles; best of reason for selling. Address GRANGEVILLE NURSERY, Grangeville, Idaho.

TO THE HOME SEEKER

We are anxious to tell yon about the cheap homes that can be obtained in Little River County, Arkansas. Write for information to
STATE LINE LAND & IMMIGRATION ASSOCIATION,
711-712 Kansas City Life Building, Kansas City, Mo.

Choice Oregon Land

We have several tracts of choice land located in the center of the well-known Walla Walla valley fruit belt. Do not fail to see us on your way to the Lewis and Clark Fair. Parties traveling via Union Pacific change at Pendleton and an hours ride brings you to Milton.

If you are interested in securing a home in a mild climate let us know a few days before you will be here, and will have hotel accomodations reserved for you, and will meet you at the train. Office across track from depot. Milton Fruit Growers' Union, Milton, Ore.

Fruit Farms and Fruit Land for Sale

This department is for the benefit of Fruit-Grower readers who wish to buy, sell or lease farm lands. All advertisements of this nature will be inserted for a charge of 2 cents per word, each initial and number to count as a word. No display type will be used in ads which are accepted at this reduced rate, and all charges must be paid in advance. The rate of 2 cents per word is for each insertion. Count the words when sending your advertisement, and the cost can be easily ascertained. THE FRUIT-GRIWER CO., St. Joseph, Mo.

FRUIT FARMS

South Missouri-North Arkansas, the banner fruit district. Here are three snaps. Come down and see for yourself.

No. 1. 80 acres beautiful fruit land, Texas Co., Mo.; only 2½ miles Sargent and 3½ miles Cabool; fine spring; 25 acres cleared and set to fruit; trees neglected and most dead now; 55 acres big oak timber. Price, $600. Cheapest ever offered. Only $200 down.

No. 14364. 60 acres Benton Co., Ark., 2½ miles Rogers; 50 acres set to fruit; 1630 apple; 735 peach, 73 cherry, 23 plum, 20 apricot, 5 acres strawberries, grape, etc.; good house, barn, 16x24; fine well. Price, $60 per acre; fruit 3 to 18 years old; 1-3 down.

These are a few of the 500 on my list. Write for what you want. I have it. Big list Missouri, Kansas, Arkansas and Oklahoma free. Beautiful up-to-date map, either state, showing counties, towns, railroads, population, etc., nicely bound, 10c stamps or silver for each state desired.

LOTT "The Land Man," 127 W. 8th. Kansas City, U. S. A.

W. E. TRONE The Hustling

REAL ESTATE AGENT, Bentonvilic, Arkansas.

Call on me for bargains in fruit lands. Reference by permission, Peoples Bank.

Attention FARMERS and RANCHMEN

Are you looking for a home in a mild and beautiful climate where fruits, grains, grasses and vegetables grow and yield large returns; where the grazing season is long and the feeding season short; where the waters are pure and the soil rich? Then come to Marshfield, Webster Co., Mo., and let me show you. I have improved stock and grain farms, ranch lands and fruit farms. Write and tell me what you want and I will send you full description with prices and terms.

FRANK M. HAMEL, Marshfield, Webster County, Missouri.

FOR SALE—A fine fruit farm of bearing fruit trees and small fruits; 80 acres, in a healthy location adjacent to one of the best home markets in North Central Missouri. Three miles from court house, and a good trade all ready for the buyer; good public road; telephone; farm well watered by springs; good buildings, three good cellars, apple house full of barrels; a general succession of large and small fruits; land in a high state of cultivation. On account of wife's injuries from team running away, want to sell. Possession given on or before May 15. For particulars write C. B. GREEN, 1106 East Fifth St., Sedalia, Mo.

Bruce's Bargains.

In sight of the smoke of Kansas City. Choice 200 out of 425, or all, to trade for cattle or equity in all, for other land. 24 acres in Pleasand Hill (33 miles east of Kansas City, on two TRUNK LINES; (24 passenger trains daily); very choice land, cheap. ONLY BARGAINS LISTED. Some extra good ones on hand now. Come over Missouri Pacific and save receipt for fair paid. BRUCE BARGAIN COMPANY, Pleasant Hill, Mo.

Land for Fruit

TRUCK, STOCK RAISING AND GENERAL FARMING

located on both sides of M. & O. R. R. in Alabama and Mississippi. Price from $2.50 to $6 per acre. Terms—On less than 160 acres, one-fourth cash, balance 1, 2 and 3 years. Larger tracts, one-fourth cash, balance in nine equal yearly payments. LAND SEEKERS' EXCURSIONS on 1st and 3d Tuesdays of each month. Write for ILLUSTRATED FOLDER and MAP, sent free.

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TOOK THE **GOLD MEDAL** Highest Award
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LAND $2.50 Per Acre

Suitable for growing PEACHES, PRUNES, GRAPES, APPLES, PEARS, Etc.

Along the lines of the **CANADIAN PACIFIC RAILWAY** in
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Delightful Climate, Excellent Transportation Facilities and Markets.
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Do You Own a Home?

Don't you know that you can't afford to rear a family without a home for them?

We have 20,000 acres of good fruit lands, excellent also for diversified farming, cotton, corn, oats, melons, vegetables of all kinds, stock, grasses, apples, peaches, grapes, plums, cherries, pears, poultry, berries, sorghum and babies, from $2 to $10. None offered but valuable. Lands fine for sheep and goats for $1 per acre.

Write us if homeless; it matters not how poor you are. Honesty and energy is the main capital we want you to have.

Western Arkansas Homeseekers' Agency
BELLEVILLE, OLA, or DARDANELLE
All in Yell County, Arkansas.

CASH

For your farm, ranch, home or other property, no matter what it is worth, or where located. If you desire a quick sale, send us decription and price at once. We quickly furnish cash buyers.

IF YOU WANT

to buy a farm, ranch, home or property of any kind, anywhere, tell us what you want and where you want it. We can fill your requirements, do it promptly, and to your entire satisfaction.

N. B. JOHNSON & CO.
505-H Bank Commerce Bldg., KANSAS CITY, MO.

CALIFORNIA

Cash, . $12.00
Guaranteed Annually 10%

Security Vineyard Tract,. . $12.00
Trust Bond, $10.00
$22.00
Guaranteed Value

Do you want a guaranteed income for over 50 years? Money deposited with the Southwestern Trust Co. of Kansas City as trustee for purchasers to guarantee success and profits on our vineyards. The climate assures a steady crop, and handled more economically than any other fruit. Affidavits, letters, etc., to prove 50 per cent and 160 per cent yearly. This is an absolutely guaranteed investment. Investigate now before increase in price takes place. Address

California Development Co. 421 New York Life Building KANSAS CITY, MO.

WE GIVE YOU TEN YEARS TIME
in which to pay for
Farm and Ranch Land in Kansas, Nebraska and Colorado
All you need to make the land pay for itself and also make you and your family independent for life. Low Prices. Write for full information. FREE.
B. A. McALLASTER, Land Commissioner,
Department R. U. P. R. R., Omaha, Nebraska

Questions and Answers

Wants Onion Plants.—W. L. Fulmer, 315 Pine St., Reading, Pa., wants to buy 100,000 or more young onion plants. Who knows where these can be obtained?

Danger to Poultry from Spraying.—Frank E. Holmes, Wheeling, W. Va., asks if any of our readers have had any injury from poultry eating bugs or insects which were killed by spray mixtures. Who has had any experience along this line? The question has frequently been asked as to danger of stock eating grass under trees which have been sprayed, and no report of injury has been forthcoming. But who knows about the poultry eating the poisoned bugs?

G. F. S., Appleton, Maine.—What kind of dressing will tankage and hard wood ashes make for strawberries? I mean tankage composed of dried and finely ground bone and meat. How would this fertilizer compare with other fertilizers at $27 to $30 per ton? (2) Do you know of an apple called Apple of Commerce? Two years ago I set 150 apple trees of that variety; they have grown finely and now I wish to know if there is really such a variety.

Answer by W. L. Howard: Tankage and hard-wood ashes would undoubtedly make a good fertilizer for strawberries if the land is thin. The former is rich in nitrogen, while the latter supplies the potash. By securing the analyses of the different fertilizers along with the prices of each you will be able to make the comparison you desire, remembering that a complete strawberry fertilizer for ordinary conditions and soils is made up as follows: Nitrogen, 3 per cent; phosphoric acid, 7 per cent; potash, 9 per cent. (2) A variety of apple known as the Apple of Commerce has been sold for the past few years by Stark Brothers, Louisiana, Mo.

A. A. S., Hamburg, Iowa.—Would concentrated lye be a good thing for apple trees, used in connection with Bordeaux mixture for the application before the buds swell? If so, what quantity of lye to 100 gallons of Bordeaux?

Answer by W. L. Howard: I should not recommend the use of concentrated lye with the Bordeaux mixture at the time you mention, as I think the Bordeaux would be fully as effective without it.

F. I. B., Hardin, Ill.—I would like to have some information concerning the Sops of Wine apple. What kind of soil is best adapted to it, how soon does it come into bearing, and how does it compare as a commercial summer apple to Yellow Transparent and Duchess of Oldenburg? (2) I have some two-year-old apple trees that I wish to top-graft this spring; trees are healthy and thrifty and are 1½ to 2¼ inches in diameter, well branched. Now, what I want to know is what will be the best, to graft the limbs or to cut off the stock close to the ground and insert one or two scions. (3) What is the proper soil for Stayman Winesap apple? My soil is branch bottom with gravelly subsoil and hillsides with clay soil; land is newly cleared. Have Ben Davis and Jonathan trees on same soil, and their bearing is all that I could expect or wish.

Answer by W. L. Howard: The Sops of Wine apple is much better adapted to New England than to the west. Although it is an early spring apple, in Illinois, the Yellow Transparent and Duchess would probably give much better results. (2) Saw off the trunks eight or ten inches from the ground and insert two scions in each. If both grow, one should be cut out in order to prevent the formation of a forked tree. (3) The Stayman Winesap is much like the old Winesap in its requirements as to soil and location, that is, it prefers a rather deep, moderately moist soil. I think it will do well in the soil you have mentioned.

W. C. H.—Please give a clear definition of what is a whole-root graft and what a piece-root graft. There is a nurseryman in White County who puts in his scions at the crown of the seedling, one graft to the seedling, and he says this is strictly a whole-root graft, nothing more and nothing less. Is he right? Do the leading nurserymen put up whole-root grafts in this way? (2) What must I do with a nursery of 10,000 trees that have been headed too low by rabbits? (3) How can I raise Giant Paschal celery, and how blanch it and keep it from rotting while blanching? (4) What can I do to prevent wooly aphis, crown gall, etc., from getting in my nursery?

Answer by W. L. Howard: Strictly speaking a whole-root graft is a scion that has been crown-grafted upon an entire one-year-old seedling root. However, in practice the whole-root seems to mean a crown graft upon a root about six inches in length, only one graft being made from each seedling. (2) All that can be done is to allow a bud to form a leader and cause it to head out higher up. If the trees are now one-year-old, it would perhaps be better to cut them off at the ground this spring and cause them to form new tops entirely with heads at the proper heights. (3) Giant Paschal celery is handled in every way like the other varieties, although it requires longer for blanching, and because of this extra length of time precautions must be taken to secure perfect drainage when the earth is banked up around them, otherwise they will rot. (4) Do not use the same soil twice and be careful to get rid of any infected stock by burning.

J. W. B., Glenmora, La.—What is the remedy for the curculio which attack my peaches just about ripening time? (2) We also have a small worm that seems to suck the vitality from the leaves and leaves them transparent, with nothing but the framework of the leaves. Please give a remedy. Have used Bordeaux mixture with some success, I think.

Answer by Prof. J. M. Stedman: There is very little you can do towards fighting the curculio in your peaches except to cultivate the fields by shallow plowing and thorough harrowing the middle of July and then again the 1st and 15th of August, in order thus to destroy the pupae, and also to pick up and burn or feed to stock all peaches that may have fallen to the ground. (2) The larvae which are skeletonizing the leaves can be killed by thorough sprayings with arsenate of lead, but if you have a large commercial orchard I would advise that you test a few trees the first year in order to see whether the arsenate of lead will injure the trees more than the worms would. This, of course, applies only to peach trees.

H. S. Bossardsville, Pa.—I have an apple orchard 25 years old and 12 years ago it was seeded down to timothy and the timothy is run out to weeds and meadow grass. I have pigs in the orchard in summer time and now there is no grass at some places. How would it be, early in the spring, while the ground is frozen, to sow clover seed? Do you think it would catch? I would like to get it in clover for my pigs unless you can give me a better plan. (2) I mulched my strawberries in the fall with shavings that were used for bedding horses; do you think that will keep the berries clean or can I put clean straw on them early in the spring before they start growing? These strawberries were set in August, 1904, and they grew nicely, but had no runners. If they get runners before bearing in the spring, are they to be taken off? (3) I want to build a woven wire fence along my apple orchard 25 years old, and where I want to set some posts apple trees are in the way. Do you think it would hurt the trees to nail the wire right against the trees? (4) How would it be to put lime on this same orchard? (5 What is good to make dwarf pear trees grow? (6) What is a good fertilizer for a peach orchard one year old? How is droppings from the henhouse? (7) Would it be advisable to spray those peach trees and with what?

Answer by Dr. Whitten: If the orchard is to go without cultivation and if it is in a soil where clover is known to make at least a fair stand, I would advise seeding the orchard to clover just as suggested by the correspondent. In case the weeds get a start of the clover in the spring, the ground should be mowed over once or twice in order to check the weeds and allow the clover plants to get a start. If the growth of clover is luxuriant, it might be pastured to hogs to some extent. Where an orchard is in sod, however, it is not best to pasture too closely and it will be better yet if the trees can be mulched either by mowing the clover which grows on the ground and allow it to lie over the roots of the trees or by hauling in manure, or even old straw, or other mulch, and mulching the land under the trees as far as the outer spread of their branches. Whether the trees are mulched or not, care should be taken that the clover or grass does not lie closely around the trunk of the tree to harbor mice, otherwise these animals may girdle the trees in winter. (2) If the shavings cover the ground well and are themselves fairly clean, they should keep the berries quite free from being soiled by the mud. Anything which prevents the berries from lying on the ground or from being spattered by mud during rainy periods will keep them in good condition. If the shavings are not clean enough to lie under the strawberries uncovered, then a little straw may be put on this spring as an additional safe-guard in keeping the fruit clean. It is not usually customary to pinch the runners in the spring, as they do not usually begin to form very much until the fruit season is practically past. Should they, however, begin to make runners very early, the crop will be better if the runners are kept down until after the berries are harvested. (3) Nailing wire fence to the apple trees will undoubtedly injure them more or less, as the growth of the tree will tend to go into the wires and around them so that the wires will kill the growing layers in places. In case the fence is to be attached to the trees, it will be better to nail a 2x4 to the side of each tree and then nail the fence to this 2x4. The two nails and the flat 2x4 against the tree will injure the trunk much less than would the wires with their many staples. (4) It is a question which could only be solved by very patient study of the individual orchard as to whether it would be profitable to apply lime to it. In most cases, lime, in the long run, injures the soil on account of the fact that it sets free much of the plant food, rendering it quickly available to the plants. In that way it is like a stimulant. It may promote better crops for a year or two, but this very setting free of plant food to make large crops may leave the land poorer in the long run. There are, however, cases in which it is advisable to use lime on the orchard and these cases are where the land is very sour. As orchards, however, are very rarely planted in a sour soil, it is rare that orchards are benefited by the use of lime. (5) Dwarf pear trees should be in rich soil, should be cultivated and kept clean. In case these dwarf pears are not making satisfactory growth, it would be well to manure the ground under them thoroughly and cultivate and hoe it well during the season. If they are in sod, care should be taken in breaking this sod so as not to injure the roots. It will be well to apply the manure as a mulch under the trees after the land has been put in good tillable condition and the rest of the ground should be cultivated frequently through the season to keep down all weeds. (6) What available droppings from the henhouse can be secured will be an excellent fertilizer for the pear orchard. Stable manure put under the trees as a light mulch is also good. Wood ashes, where

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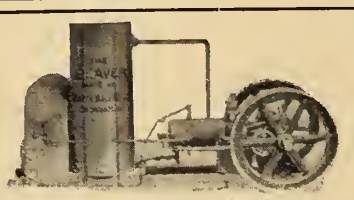

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available, may be sown thinly over the orchard, using not more than forty or fifty bushels to the acre. Cowpeas is one of the best of fertilizers for peach orchards. The ground between the trees should be plowed in early spring, harrowed and cultivated carefully up to the last of June and then an early variety of cowpeas sown which may or may not be pastured to hogs and turned under the following spring. (7) It is advisable to spray peach trees before their buds burst in early spring with a strong Bordeaux mixture, using ten pounds of copper sulphate and ten pounds of lime to fifty gallons of water.

E. S. K., Reddick, Ill.—Has salt brine ever been tried as apreventive of pear blight, and in what proportions? Or how strong can the brine be made and not injure the foliage?

Answer by Dr. Whitten: In February issue Major Holsinger referred to salt brine having been applied to pear trees to prevent pear blight, but the application was made when trees were dormant, as we understand it. The foliage would be easily injujred by the brine. At the Experiment Station we have used mild applications of salt as a spray for the tres and also applications of salt in varying quantities about the roots of pear trees, along with many other supposed preventives of pear blight which have from time to time been discussed in this section. Salt brine, unless very weak, will badly injure the foliage of the trees and if very strong will even injure the dormant trees themselves. Salt cannot be applied except in very small quanuties to the soil without injuring the growth of the pear trees. We have never been able to detect the slightest beneficial influence of the brine as a spray or of the salt application to the soil for the purpose of preventing pear blight. Trees where salt has been applied by either method have blighted just as badly and just as soon as have those which were entirely untreated. So many "sure cures of pear blight" have been introduced from time to time, all of which, so far as we now know, have proven entirely inefficacious and it is safe to say the only means by which we can in any way control blight are, planting such varieties as are least susceptible to the disease, by putting orchards in sod as soon as the trees have become well established, by avoiding severe pruning, or any other factor which would stimulate soft and luxuriant wood growth, and by cutting out and destroying the blighted parts whenever blight occurs. Even with these precautions, pear trees will sometimes blight.

H. C. McC., Des Moines, Iowa.—I set some peach trees last April, putting them 12x12 feet. Can they be transplanted now? I thought something of leaving them 24x24 feet. Would it be best to do that, or move some of them, making them 18x18 feet? They are good, thrifty trees, and made a fine growth last season. But they are too close. Now, will it be advisable to move them?

Answer by Dr. Whitten: The young peach trees planted 12x12 feet apart can be safely removed if they have made good growth and have become well established. I would not, however, advise replanting all of them. If they are planted in squares or check rows, you can take up half of them in such a way as to leave a tree in one row opposite the space where the tree is taken out of the adjoining row. This will leave the trees far enough apart with the necessity of transplanting only half of them. In other words trees Nos. 1, 3, 5, 7, etc., can be taken out of the first row, and trees Nos. 2, 4, 6, etc., taken out of the second row, and so on throughout the field. Moving them early in the spring should not seriously interfere with their growth, inasmuch as they are to be replanted again close by, so as to necessitate nothing like packing and shipping them.

W. O. M., Lawrenceburg, Tenn.—I have a twelve-acre orchard planted two years. Have worked the land in corn for two years and intend to plant to tomatoes this season. Is this cropping the land too close?

If the soil is strong soil, this has been a good way to handle the orchard, for the cultivation the crops received has been what the crops wanted also. The tomatoes will be a good crop for this season as potatoes, tomatoes, etc., provide good cultivation for the trees, and they are not shaded, as they would be in the corn.

D. S., Tisdale, Kan.—I have an orchard, trees of which are ten to twenty-five years old. All are in good condition. Four years ago the apples on a Missouri Pippin trees had spots on them, which looked like the skin was dead; a brown, hard spot, which seemed to stop the growth of the apple in that particular spot. Yet when one would cut into the spot it was found to be only skin deep. The apples look rotten, but the spots are hard. The trouble is spreading. What is it?

The trouble is doubtless apple scab, a fungous disease, the remedy for which is to spray with Bordeaux mixture. See article in this issue by Dr. Whitten on this subject.

W. H. H., Cotopaxi, Colo.—A green fly that looks very much like a young katydid made its appearance in my orchard. The worm enters the apple on the side, and seems to prefer a place whre two apples touch, or where an apple touches a leaf. What is it, and what the remedy?

Answer by Prof. Stedman: The worm, the habits of which he describes, is undoubtedly the fruit tree leaf roller, the larva of which not only feeds upon the leaves, but also attacks the fruit in the manner he indicates. The adult is a small, brownish-yellow moth which deposits her eggs in the latter part of the summer, the eggs natching the next spring. The best method of fighting this insect is to spray the trees thoroughly just as soon as the first indications of the larvae appear with arsenate of lead or Disparene, using the ordinary formulae. As these insects make a delicate web and unite leaves together and also leaves with fruit it is evident that unless one sprays very early, before this work has been accomplished, it will be impossible to reach them with the spray.

J. P., Clarence, Ind. Ter.—How must one prune grape vines to make the vines self-supporting? (2) Will self-supporting vines produce as well as vines trained to trellis? (3) How far apart should self-supporting vines be planted? (4) What do California growers get per pound for their grapes? (5) How many pounds of grapes to a gallon of wine?

Answer by W. L. Howard: There are many systems of pruning grapes, but all are much the same in one very important respect, that is, they seek to renew a part of the plant each year. A vine may be made to stand up by causing it to head at a height of three or four feet from the ground. Each season the vine should be so pruned as to force a new growth of several canes from the point at which the vine is headed. One prominent system of pruning is to renew the entire vine from the ground up each season if possible. It should be remembered that the fruit is borne only on the one year old wood. There is a difference of opinion as to which is the better system, the one renewed from the ground each year or the one renewed from a point three or four feet above the ground annually. By either system the plants should be at least 8 feet apart each way and preferably 10 feet apart between the rows. (4) I am not familiar with the price of grapes in California, but presume the quotations vary with the seasons and the supply. (5) The number of pounds of grapes per gallon of wine will vary greatly, depending upon the variety of the fruit, the amount of sugar added and the extent of the dilution with water.

C. B. P. Rigby, Idaho.—What is the best way to plant apple seeds to get them to grow, and when should they be planted? Would it help them any to soak awhile before planting, or should they be scalded?

Answer by W. L. Howard: Apple seeds should be frozen before being planted. This is best done by mixing them with sand in a shallow box and letting them remain outside uncovered during the winter. If impossible to freeze, they may be soaked in warm water for a couple of hours before planting, which will cause some of them to germinate.

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Poultry Department

Winter Egg Production.

(Continued from February Number.)

Last month the article by Prof. James Dryden of the Utah Experiment Station on the above subject took up the matter of selecting the hen and providing quarters for her. This month the subject is continued, beginning with the location of the building.

The site or location of the building is important. Many a poultry enterprise has been wrecked because the building was not on a suitable place. It should be on dry, porous soil where the drainage is good. If the ground is not perfectly dry this may be overcome somewhat by placing the sills six inches above the ground and filling in with dirt, sand or gravel inside and outside the house.

Another point, is protection from the prevailing winds. A good place is along the side of an orchard, which will protect the house from the winds and at the same time afford shade for the chickens, which they must have in warm weather. It should be located also for convenience in attending the fowls. It should not be built close to the dwelling house, of course, neither should it be on the most distant part of the farm, for in that case there would be more time wasted going back and forth than spent in the actual labor of doing the work. The house should be built where the chickens can have a good range, and a patch or field of lucern or clover makes a very desirable range for them.

Poultry buildings may be divided into two types or kinds, each of which has its advocates among poultry people. One is called the open front or scratching shed plan, and the other the closed building. The chief point in favor of the open front is that it is comparatively free from dampness and well supplied with fresh air. The closed building is warmer. The same kind of building, of course, won't suit everybody, but I believe, taking everything into consideration, the open front house will best meet the needs of the farmer. The closed house requires greater care in handling, more probably than it is liable to get on the farm. Our new poultry house at the college is built on two plans; that is, part of it is open front and part closed. This gives us an opportunity to test the two styles of house. From a house like the one described and a hundred good chickens I think you will get as much pleasure and as high a rate of interest on your investment as from any other branch of farming.

Get Good Chickens.

I said good chickens. This brings up the question as to what kind of chicken is the most profitable; what breed is the best. This is dangerous ground. It is often as much as a man's life is worth to give an opinion as to which breed is the best. There is another thing of more importance than the question of breed, and that is the question of individuality. There is more difference in the individual than in the breed. There is more difference in the strain of fowls you get than in the kind. By keeping a record with each hen we have found that they lay all the way from 50 eggs or less, to 200 or more a year. One hen will lay 50 eggs or less; another of the same breed may lay 200 or more, and there is no way of telling by looking at the hens which will be the good layers. As to any peculiarities of shape or form that indicate the good layer no one has yet been able to substantiate any theory in regard to it. By means of a "trap" nest a record is kept of the number of eggs laid by each hen, and the results have been surprising. It does not seem to be a case of the "survival of the fittest," for there is evidently in every flock hens that do not lay any more eggs than their ancestor, the jungle fowl, is reputed to have laid a thousand years ago. Our records would indicate that a large percentage of the hens are living off the profits of the others. I believe that by using good layers and discarding the poor ones as breeders in a few years we can establish a strain of fowls that will be uniformly good layers. It takes time, however, but we can already show some remarkable results by breeding from selected layers, results that tend to show that a hen transmits her laying qualities to the offspring. We can show an increase of fully 33 per cent in egg yield. The results will be published in full in a bulletin that is being prepared. I think it quite possible to increase the production of the flocks in Utah by 50 per cent by breeding from selected or pedigreed layers. If the yield can be increased 25 per cent that would mean, at the present rate of production, $150,000 annually to the poultry keepers of this state. Basing an estimate on the last census, the value of the poultry product of Utah amounts to over a million dollars, and the large proportion of it is eggs. If farmers would purchase male birds that they know are from good layers, or from what are called the 200-egg hens, they would soon very much increase the egg yield of their flocks. The way it is now he doesn't know whether the rooster he buys is from a 30-egg hen or a 240-egg hen. In another year the Experiment Station expects to be able to supply the demand for pedigreed male birds at reasonable prices.

Feeding for Eggs.

In feeding for eggs there are three things to be considered, namely, the quality of food, quantity of food, and variety of food. As to quality of food, the food eaten affects the flavor of the egg, as well as the health of the fowls. It is true that we would often be glad to get eggs of any kind of flavor or of no flavor, and it is also true that during the present winter and in other winters anything in the shape of an egg has been eaten, yet the fact remains that we can feed flavor into the egg, and in certain markets to command the highest prices the eggs must have no suspicion of undesirable flavors. It has been tried at the Experiment Station and it has been shown that eggs laid by hens that have eaten a large quantity of onions have an undesirable flavor. The same thing has been proven at other stations.

It is claimed that the quality of the food also affects also affects the color of the yolk. In winter especially the yolk is often light colored and this would injure the sale in a select market. Just what foods, however, affect the color, or give it the desirable color,

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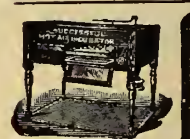

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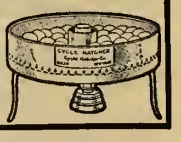

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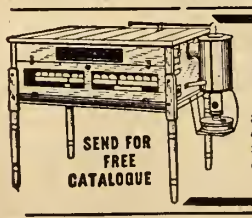

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get strong and healthy—gain steadily in weight, are chicks hatched in Reliable Incubators.

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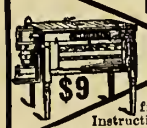

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Farmers or fanciers cannot afford to bother with the old hen when they can buy an up-to-date, self regulating, double walled incubator for $8. Needs no moisture and any one can run it. Warranted to hatch as well as any on earth. 100-egg size, $10. Send for catalog.

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Buff P. Rock.	13 $1.00	S.C.W.&B. Lgns.	13 $1.50
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S. C. Buff Orpington eggs, $3 for 30; $8 for 100; R. C. Buff and S. C. White Orpington eggs, $5 for 26; $10 for 60. All other eggs $6 per 100. 40 years among poultry and now have the largest and best equipped poultry establishment in America. Circular Free.

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ROOTS—White Plymouth Rocks—ROOTS

Now is the egg season. Now is the time to book your order. 100 yards mated to supply demand. These yards contain my winners at World's Fair, St. Louis, Chicago, Cleveland and Pan-American. The largest White Plymouth Rock plant in the world. Single birds, pairs, trios, breeding pens, any quantity. Send stamp for my poultry catalogue—a work of art and full of information. Egg catalogue free.

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we have not yet discovered, but we are making some experiments in order to get some information on this point.

As to quantity of food, I think there is greater demand on the skill of the poultryman at this point—that is as to the right amount to feed at all times and how to feed it—than at any other point in the business of producing winter eggs. It is a well known fact that in feeding for eggs, as in feeding for milk, the profit comes from the amount of food consumed above that necessary for maintenance of the body. To state the same truth in other words, the more food the hen eats above that necessary for maintaining the body, the more eggs she will lay. If it takes three ounces of food a day to supply the needs of the body, or to keep her alive and in good condition, and you feed her only three ounces a day, she won't lay any eggs, because the first food she eats goes to the maintenance of the body. If you want her to lay eggs you must feed her more than three ounces, assuming that she requires three ounces for use of the body. The eggs are made by the hen from the surplus food she eats above that that she needs for use of the body. The amount of food consumed, and here is where the skill of the poultryman comes in, will depend upon the number of eggs that she is laying. A hen that is laying heavily must eat more food than one that is not laying much. A hen that is laying well will eat probably 25 per cent more food than one that is not laying. So that no hard and fast rules can be laid down as to the amount of food necessary each day; the poultryman must decide that for himself. The intelligent poultryman, if he studied his flock as he must do to make a success of the business, will soon learn about how much to feed at any one time. The supply must be regulated daily according to the demand. The secret is to feed so that the appetites of the hens will be good; and this brings up the question of variety of food.

Must Feed a Variety.

There are two reasons why a variety of foods should be fed. First, it is necessary to give a variety in order to help the appetite, so that the hen will eat enough to produce eggs in abundance. Second, it is necessary to feed a variety in order to "balance the ration," or to furnish the necessary materials in right proportion for making eggs. No one poultry food contains the egg-making materials in right proportion. The ration fed, of course, will be governed by the foods available and the prices of the same. It is the same with men and women. We cannot always afford to buy what we would like to have, and yet we poor people manage to get along about as well and live as long as the rich who have their every want gratified. There are, however, strange to say, poultrykeepers in every town and village of the country who buy more expensive foods for their hens than they do for themselves. They buy prepared poultry foods without any idea of what they are buying, paying 25 cents a pound, and sometimes as high as 50 and 75 cents. That is $500 to $1000 a ton. I venture to say that there are hundreds of dollars of poultry foods sold in Logan every winter for 25 cents a pound and more, and I believe the same thing applies to other towns in this state. I venture further to say that a pound of such stuff is worth no more than a pound of good wheat. Two or three years ago the drug stores were selling a poultry food called Red Albumen at 50 and 60 cents a pound. They kept it for sale because the people came in demanding it. It was found by chemical analysis that it was composed of mineral paint and sand. We sent out a circular from the station to the papers and afterwards there was red paint to sell. But there are many other foods on sale that are a fraud because they sell for 25 cents a pound or more when they are not worth any more than one cent a pound wheat.

Rations.—What is a good ration for egg production? The trouble with most rations is that they are better fitted for fattening fowls than for making eggs. Take wheat for instance; if a hen got nothing but wheat and all she could eat of it, she would not get enough egg-making material out of it probably to make an egg oftener than once a week. It is true of course that some farmers feed their hens nothing but wheat, and get good results, but the hens are running at liberty over the farm and pick up a great deal of other kinds of food to supply the lack in the wheat. They find animal food in the shape of flies, grasshoppers, worms, etc. They also find green food and grit, which are all necessary for egg production. But in winter when the ground is covered with snow and the hens are shut in a house, the farmer continues to feed them the same ration of grain and more of it and wonders why they dont lay. He doesn't take into account that during the summer the fowls are picking up on the farm a necessary part of their ration and that to get eggs in winter that food must be fed to them in some form.

If instead of feeding all wheat, you feed just half the quantity and feed the other half in mash of bran and shorts and skim-milk you will have a cheaper ration, and at the same time get more egg-making material out of it and get it in better proportion for egg production. A simple ration like that will give satisfactory returns, if you have good hens properly housed. It will not be the best ration, if there is a best, but it will be a great improvement on two-thirds of the rations that are fed.

If you want to improve the above ration you can do it in several ways. If you can get meat scrap from the butchers—good fresh lean meat and bones—and have a bone cutter to cut them up and feed them at the rate of two or three ounces per hen per week or 10 to 15 pounds for 100 hens per week, you will get very much better results. Hens should have a variety of food to help the appetite. If you can get corn at reasonable price it would pay to add a little to the mash.

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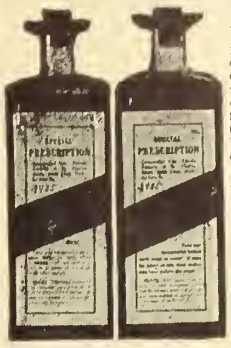

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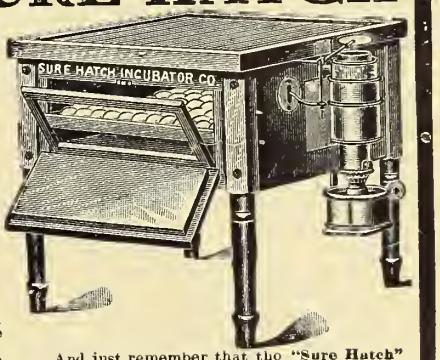

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Sixty thousand machines in successful operation in all parts of the world, attest their superiority and make it certain that you take no chances when you invest in a **"Sure Hatch"**

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And just remember that the **"Sure Hatch"** Guarantee protects you for five years. It is worth something to know and to feel that money cannot buy more in the incubator line than what is furnished for the price in the **"Sure Hatch."** All we ask for our 120-Egg Machine, with freight charges prepaid to your station is $10.00. We can ship promptly.

Among the strong points of the **"Sure Hatch"** are: Its **heater**—live, hot air all around it; cold air can't get to it; gives oil and trouble; other incubators have coolers and waste oil. Built of California redwood, that will not warp, crack, shrink or swell; patented copper heating system and tested patent regulator; full asbestos lined.

A good incubator is a money-maker from the word "go." Place your order for one now. There is but one **"Sure Hatch."** It is made at Clay Center, Neb. Our eastern office is at Indianapolis. **Free Catalogue and Poultry Book** now ready. Send at once. Address the nearest office.

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40 DAYS FREE TRIAL

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We will ship this Great Western 100 Egg Incubator to anyone, anywhere in the United States, on 40 days free trial. Test it thoroughly. If it is not all that we represent it to be—if it does not satisfy in every respect—you may return it at our expense.

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The Great Western is the most perfect Incubator made. Possesses all the good points of all other Incubators. Easiest to operate—best for amateur and expert. Strong and durable. **Sold on a Ten Year Guarantee.** Send for large illustrated Incubator Catalog FREE.

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$9.00 Buys a 60-Egg Capacity, double case **Star Incubator**

Freight paid to your Railroad Station providing you mention The Western Fruit-Grower when ordering. Send for printed matter.

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Standard Cyphers Incubators

are guaranteed to hatch more and healthier chicks with less oil and less attention **in your hands** than any other, or your money back. Absolutely automatic and self-regulating. Used and endorsed by 42 Government Experiment Stations and by America's foremost poultrymen. Complete Catalogue and Poultry Guide, 212 pages (8x11,) more than 500 illustrations. **FREE,** if you send addresses of two neighbors who keep good poultry and mention this paper. Address nearest office.

CYPHERS INCUBATOR CO., Buffalo, Boston, Chicago, New York, Kansas City or San Francisco.

A little ground wheat occasionally would also help it. Then instead of the whole grain being all wheat I would feed some whole oats or corn for variety.

Of course, in addition, they must have some form of green food and also grit. Then don't forget good fresh water, for you know that two-thirds the weight of the egg is water, and you are getting a pretty good price for water when you sell eggs for 30 cents a dozen.

We have now discussed briefly the housing of poultry, the breeding of poultry, and the feeding of poultry. These may be called the three R's in poultry raising. There are many other things, of course that have been left unsaid for lack of time; there are other things that have not been mentioned because of lack of definite knowledge.

The Age of the Hen—There are, however, a few other points that must be mentioned before we can make a success of winter egg production. There is one thing that must not be overlooked. We have shown by experiment at our station that the young inexperienced hen is the profitable hen. The poultryman who fails to take that fact into account will inevitably fail. Our experiments have proven that the first year is the most profitable in the life of the hen. With good care, an average hen will lay as a pullet, or during the first laying year, about 150 eggs. The second year she will lay 100, or less, and the third year 50 or less, and less each succeeding year. Another thing, the pullet is the winter layer. An old hen seldom lays in early winter when eggs are the best price. There is good profit in the first year; there may be a profit in the second year; but the third year the average hen will not pay for her keep.

Raising the Layers—Another point: To get good winter layers, you must prepare a year in advance. The layers must be hatched from eggs laid from good stock, and they must be hatched right and raised right, and of course you won't get winter eggs unless you get the pullets to maturity and ready for business by the time cold weather sets in, no matter how they may be fed or housed. Lack of space prevents me from giving the details of a series of experiments on incubation. These, however, will be reported in a bulletin soon to be issued. When poultrymen can better control the hatching problem; when they can with less trouble and with less waste of eggs and chicks hatch and properly raise a sufficient number of good chicks, so as to get the pullets in good condition for early winter laying, the poultry business will be far more profitable. There is no use in asking the question why the hens don't lay in winter when they were hatched in June and July. There is no use in laying awake at nights trying to devise some scheme to make them lay when eggs are 35 cents a dozen, if your chicks, though they may have been hatched in March or April, were not properly raised after they were hatched. You must begin as soon as it is hatched in the spring, to train the pullet to lay in winter.

There is no particular secret in feeding the chicks, unless it be care. Feed them with care and regularity. In feeding chicks, nature is a good guide to follow. They should be fed several times a day, enough to satisfy their hunger and no more, and above all, they should be fed a variety of food. No wet or sloppy food should be given. They may be fed with success either by the dry method or the wet method. The grain may be cracked or ground coarsely and fed dry, or it may be mixed into a mash. Grit is as important as grain. They should have grit in the first feed and in every feed afterwards. Good clean, sharp sand is good, or crushed rock or gravel. Dry bone, broken into pieces, is an excellent food for young and growing chicks. The grit or sand should be mixed with the food so they will be sure to get enough of it. To make good growth they must also have animal food. If they get plenty of skim-milk, this will furnish about all the animal food necessary, but a little meat occasionally will help. Yet another thing, they must have green or bulky food of some kind, such as alfalfa, clover, vegetables, etc.

If the chicks can have a good range the feeding problem will be simpler. With a good range they will probably find all the grit, animal food and green food necessary.

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The Birthplace of Commodore Decatur.

The accompanying illustration is from a recent photograph of the birthplace of one of America's greatest naval heroes, Stephen Decatur. The building, which is situated on the nurseries of J. G. Harrison and Sons at Berlin, Maryland, has remained practically unchanged through all the years since the great commodore left it to

take up the career in which he afterwards achieved fame. It is a small cabin, old, weather-worn, and partially decayed. It is now being carefully preserved for its historic value.

In this little cabin, on January 5, 1779, was born the boy whose fame was later to spread over the entire civilized world. Amid these humble surroundings he spent his childhood days.

The building and all the land which formerly comprised the Decatur plantation have recently been added to the extensive nurseries of J. G. Harrison and Sons. These nurseries, from a small beginning less than twenty years ago, have grown to be small beginning less than twenty years ago, have grown to be among the largest in the United States. More than 1000 acres surrounding the Decatur home are in cultivation, in peach, pear, apple, plum and cherry trees and every variety of nursery stock.

From this historic place hundreds of thousands of fruit trees and plants are each year sent out to all parts of the country. The extreme care which is used in digging the trees, in preserving the roots, and in packing, enables the proprietors to guarantee delivery to any part of the United States in perfect condition.

Th trees from the Harrison nurseries are famous for their hardiness and for the quality and amount of fruit which they invariably bear. Their trees thrive in almost any climite, and every section of the country has large orchards planted in Harrison stock.

Visitors are always welcome at the Decatur plantation or any other part of the Harrison nurseries, of seeing at the same time an historical landmark, and the workings of a large, modern, perfectly appointed nursery.

Agricultural Uses for White Lead.

"White Lead and oil is a very common application to apple trees, both to the wounds where limbs have been sawed off and to the trunks of the trees. As to injury from this, I have never heard of a case of trees being injured by its application, and I have used it for eight or ten years continuously myself. I do not think there is any possibility of injury from the use of a mixture of pure lead and oil. Where commercially mixed compounds are taken with other ingredients, however, I would not like to say positively, although I think even here that the probability of injury would be very small," writes Mr. N. O. Booth of the Geneva Experiment Station, in the Rural New Yorker.

Purity in White Lead for apple trees is no more important than purity in White Lead for houses. The different substances in common use as adulterants for White Lead have no paint value whatever and are injurious inasmuch as they take the place of the pure lead that is necessary to insure perfect protection for the surface painted. The standard brands of strictly pure White Lead will be found to be both the best and cheapest paint that can be put on a house.

Gasoline Engines for Spraying Outfits.

The Weber Gas and Gasoline Engine Company of Kanssa City, Mo., whose ad appears elsewhere in this issue, have been in the gasoline engine business for the past twenty years and have aided the fruit-grower materially by introducing a small and reliable engine to be used in connection with power spraying outfits. This engine, which develops two and a half horsepower, is monnted upon a single base, with all pipes, valves and fittings intact, welghs but six hundred pounds, and can be safely fastened on the ordinary farm truck and used as a portable engine, or, secured to a floor, can be utilized for general power purposes.

It has reached a period where the successful fruit-grower and farmer recognizes the fact that he cannot afford to be without power and those dependent npon the old hand systems of performing labor find themselves so far outclassed that they should as a self protection, post themselves as to this feature of farm economy, and we know of no better way of doing so than writing for the Weber catalogue, which is complete in every detail and contains much valuable information.

For the requirements of larger power users, they manufacture gasoline engines, and producer gas systems; an apparatus for the cheap production of a gas from coal, to take the place of gasoline and other high priced liquid fuels.

Many of the thousands of farmers who visited the Louisiana Purchase Exposition will remember with pleasure the exhibit of the L. L. Olds Seed Company of Clinton, Wis. Those who have received the Olds' catalogne for 1905 have again been pleasantly reminded of their visit to St. Louis by the half-tone view on its first page. They will also notice that the exhibit by this concern captured a gold medal. The gold medal standard of seeds and potatoes—potatoes being one of L. L. Olds Seed Co.'s specialties—is certainly the quality that the farmer and gardener should plant in order to secure the best results.

A careful perusal of their catalogue shows what the L. L. Olds Seed Co. is prepared to do for those who will place their orders with them. Any who are not already posted in this regard should obtain a copy before making ont their orders for the coming season.

Quinlan, Hunt, Co., Texas, Jan. 18, 1905.
Messrs. Maher & Grosk:
Gentlemen:—I have used your knives continuously for 23 years, and shaved with one of your Jockey Razors 18 years. I now shave with one of your Trusty Razors, which is the best razor I ever used. Yours truly, C. S. LUCKEY.

The Fruit of the Vine.

Mr. Louis Roesch of Fredonia, N. Y., makes a specialty of fine grape vines. He has over 800,000 of them for sale including some 69 different varieties besides trees and small fruits. Anyone intending to set out vines or small fruits may obtain a descriptive price-list free by addressing Mr. Roesch who is a specialist in this line. We wish to call attention to his advertisement which appears in this issue and to suggest that those desiring anything of this kind send for his catalogue.

Throw Away Your GLASSES

You do not have to wear them and ought not to.

You can see again with your own eyes as well as you used to, by using

Eyelin

A tonic eye-food and sight-strengthener put up in the form of an ointment for convenient use, as harmless as cream, contains no atropine, no cocaine, no mercury or other poisonous drugs—not used in the eyes but **on the outside** of the lids. Restores to the eyes their natural strength and clearness. Cures weak, dim, painful, watery, strained, blurred, headachy eyes; astigmatism, myopia and other troubles of sight, eye-nerves and muscles; pteryglum, granulations, floating spots, films and scums; also opacities and cataracts in many cases, and "throws away" glasses in old and young. Thousands speak and write of it, like Mrs. Carr:

"Dec. 1, 1904. Dear Doctor: I have used two boxes of your Eyelin which has cured me of all trouble I had with my eyes. When I commenced to use Eyelin I had been wearing glasses for over twelve years, and the time had come when they gave me no relief and the Oculists said they could not do anything for me. I can now read and use my eyes for any kind of work for hours at a time. Find enclosed $1 for Eyelin. It will be my pleasure to answer any and all inquiries in regard to what Eyelin has done for me, I am, most truly, Mrs. B. M. Carr, care of Southern Hotel, Chattanooga, Tenn."

OUR SPECIAL PROPOSITION. Send us $1 and we will mail to you (in plain wrapper) a full-sized package of Eyelin (enough to cure most cases) with the doctor's instructions how to use it. Your money back if Eyelin doesn't suit you. Write for free advice, testimonials and plain talks.

THE EYELIN CO., 1424 Washington Blvd., Chicago, Ill.

$5.50 A GOLD WATCH OF MERIT $5.50

GUARANTEED FOR 25 YEARS.

This is a Genuine Gold-Laid Engraved Watch double hunting case, stem-wind and stem-set and fitted with high-grade ruby jeweled movement. Send your name, P. O. and Express Office address and we will send you the **Watch, Watch-Chain and Charm C. O. D. $5.50** and express charges. Examine before paying express agent a cent. If as represented, pay $5.50 and express charges and it's yours. Write if you desire **Ladies' or Gents'** size. Address

SAFE JEWELRY CO., Dept. 134, CHICAGO.

NEW GOITRE CURE

At Last a Cure is Found for This Humiliating Disease. YOU MAY TEST IT FREE.

Miss Anna Winter, Holland, Mich., writes,—"I am happy to say you have completely cured my goitre. For years before taking up your treatment I had tried all sorts of Doctors and Cures, but without success. I consider your treament quite wonderful and cannot recommend it too highly to those suffering with this horrible disease."

I have cured scores of goitres after all other treatments had failed to give even relief, and am so sure I can cure any case no matter of how long standing that I will send a full $2.50 treatment free as a test to any sufferer.

Many have been cured by this test treatment alone. Why not try it yourself and learn what it will do for you? It is free. Address Dr. W. Thompson Boho 65 Minty Block, Battle Creek, Mich.

WE CURE ECZEMA

Salt Rheum, Tetter, Piles, or any skin disease. This cure is permanent. We will send you a 25c box free. Send 10c to pay postage and packing. **Empire Remedy Co., 419 Kansas Ave., Topeka, Kas.**

Practical Lessons in POULTRY KEEPING

An Example of Journalistic Enterprise.

Beginning January 1st, 1905, in addition to the usual valuable matter given in the paper, FARM-POULTRY (semi-monthly) will, during the year, print a complete and systematic elementary course of instruction in POULTRY CULTURE, especially designed to be used in connection with practical work. No such opportunity has ever before occurred to learn poultry keeping systematically from A to Z. Costs only 50 cents a year. Write for particulars. Sample copy sent free on request.

FARM-POULTRY PUB. CO.,
Room "M" 232 Summer Street, Boston, Mass.

3 MONTHS FREE

If you are interested in any kind of an investment, Oil, Mining, Plantation, Industrial, Lands, Stocks, Bonds, Mortgages, etc., send us your name and address and we will send you The Investor's Review for three months free of charge. A journal of advice for investors. Gives latest and most reliable information concerning new enterprises. Knowledge is power. Great opportunities come and go. Great fakes also. Get posted before investing. Write today.
INVESTOR'S REVIEW, 1534 Gaff Bldg. CHICAGO, ILL.

QUEEN INCUBATORS

The Queen is truly the Queen of incubators. Has a system of diffusive ventilation of its own. It will hatch a larger per cent of strong, healthy chicks than any machine with other systems of ventilation. Send for catalogue. It's FREE.. QUEEN INCUBATOR CO., Box 14, HASTINGS, NEB.

Fruit Growers send 10 cents and 5 names of fruit growers for 6 months trial subscription to THE PEACH GROWER, Savannah, Ga. It is a practical paper for growers of all kinds of fruit, of peculiar interest to peach growers. Published in the greatest peach state in the world, it publishes much matter of interest to peach growers everywhere.

Address The Peach Grower, Savannah, Ga.

BEST FRUIT PAPER 10c

for 3 months. Stamps or silver.
NATIONAL FRUIT GROWER,
St. Joseph, Michigan.

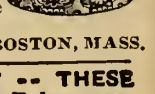
MONEY IN EGGS When you keep them until prices are high. Can keep two years if necessary, absolutely fresh. No work, no experimenting, no loss, no special place required to store them, protects against all atmospherical changes. Inexpensive. Write for free circular, also handsome Art Folder of my Imperial Poultry Farm. J. C. Heath, Valley Junction, Iowa, R. F. D. 2. Dep't M.

Dont Buy an Incubator—Get a New Thought Hatching Machine

and take off a hatch every 10½ days. No, it's not an incubator. It hatches and the CHICKENS LIVE. It is all metal—good as gold to people who want a business machine. Catalogue Y ready.
HASTINGS MANUFACTURING CO., Hastings, Nebraska

FREE GOLD WATCH AND CHAIN WITH RING FREE

Beautiful Watch, correct timekeeper, with maker's guarantee, American movement, **Solid Gold** laid case, equal in appearance to a **Solid Gold Watch Warranted 20 Years,** weighs, complete with case, only 2½ ounces. A splendid watch which any one will be glad to possess. The chain we send is of handsome pattern, heavily gold-plated and of modern design. The ring is 14 karat **Solid Gold-filled, Hand-chased,** and will wear for years. Send your name and address for 24 pieces of **Swell Art Jewelry,** consisting of **Gold-plated Jeweled Hat-pins, Perfumed Amulets** and **Brooches** (regular 25c. goods) to sell at 10 cents each. When sold return our $2.40 and we will send you all 3 premiums.



FRIEND SUPPLY CO., 42-44 Portland Street, Dept. 518 BOSTON, MASS.

TELESCOPE SALE AS LONG AS THEY LAST -- THESE ***20th Century Long Distance Telescopes***

93¢

NEEDED ON LAND AND SEA This is a remarkably powerful instrument and positively was never sold for this price before. These Telescopes are made by one of the largest manufacturers of Europe, measure closed 12 inches and open over 3½ feet in 5 sections. They are brass bound, brass safety cap on each end to exclude dust, etc., with powerful lenses, scientifically ground and adjusted. Guaranteed by the maker. Heretofore Telescopes of this size have been sold for from $5.00 to $8.00. Every sojourner in the country or at seaside resorts should certainly secure one of these instruments, and no farmer should be without one. Objects miles away are brought to view with astonishing clearness. Sent by mail or express, safely packed, prepaid, for only 93c. This is a grand offer and you should not miss it. We warrant each Telescope just as represented, or money refunded. Send 93 cents by Registered Letter, Post Office Money Order, Express Money Order or Bank Draft payable to our order. Write to-day.

RICHARDSON & CO., Dept. 97, 360 Dearborn St., CHICAGO.

The Brown Tail Moth.

This pest is coming to be one of the most serious which some of the New England states have had to fight. The Maine Experiment Station has just issued the following bulletin on the subject, which will give an idea of the pest and its work. Those sections which have not become infested should guard against it very carefully. The bulletin reads:

If the caterpillars of the brown tail moth only attacked trees, fruit, shade and forest, the case would be serious enough, but they are a menace to the comfort of the residents of the infested district and if they are allowed to remain undestroyed in our shore resort towns their presence will keep away the summer visitor. The residents of many towns in Eastern Massachusetts now make a practice of leaving home early in June to avoid caterpillar poisoning, and they will not go to places infested with the brown tail.

The caterpillars moult about five times. The hairs from the three last moultings are brittle and barbed. When they touch the skin, they penetrate it and give rise to a most uncomfortable irritation which lasts for many days. As a man said at a legislative hearing at the state house last week, "My wife thought the children had the itch. She was sure they got it from the Italians working on the railroad. It proved to be caterpillar poisoning. If that is to stay in my town I am going to move out." In some of the Massachusetts towns this has had a depressing effect upon real estate values, and it is difficult to rent houses in the infested areas. The question, "Do you have caterpillars?" is one of the first the would-be tenant asks.

There is no likelihood that the state will give much help; each town and in fact each citizen must undertake to keep his place clean from the pest. This can be done if all the nests are gathered and burned in a given locality. On an average each nest contains 200 or more caterpillars. Give the small boy one cent a dozen nests, and in the badly infested districts he will make a good thing of it. When you have paid him one dollar, and have burned the nests there will be a quarter of a million less caterpillars in your town next summer!

If you want to start a campaign of education against this pest write Commissioner A. W. Gilman, Augusta, Me.

If you want bulletins telling about the brown tail moth and how to destroy it, write Director Chas. D. Orono, Me.

If you want freedom from poisoning next summer get right to work and clean out the nests.

There is only about six weeks more before the caterpillars will be crawling out of their nests and they will then be far more difficult to fight.

Do it, and do it now.

DO THIS NOW

And I Will Give You a Pair of my Handsome

Gold Spectacles

Just send me five names of spectacle wearers and I will do this:—First, I will mail you my Perfect Home Eye Tester, free. Then (after you have sent me your test), I will mail you a

perfect-fitting five dollar family set of Spectacles for only $1, which will include a pair of my handsome Rolled Gold Spectacles, absolutely free of charge. This set will last a family a lifetime. I have never sold this family set for less than $5 and you could not buy spectacles anywhere near as good as these, even for $10 a *pair.* I am really charging you nothing for them now, as the dollar I will ask you to send with your test is only to help pay for this announcement. This very remarkable but honest offer (to send a five dollar set of spectacles for only $1) is open to everyone (my old customers also), but only for a short time, as I am just doing this to prove to every spectacle wearer in the world the following two very important facts: *First,* that my Perfect Home Eye Tester is positively accurate and reliable and with it you will be able to give your own eyes a perfect test in your own home and thereby I fit you with absolutely perfect fitting spectacles *by mail,* which could not be improved on even if you had undergone a personal examination in any occulist's office, at a cost of $10 or more. *Second,* and most important of all, that on account of my latest improvements, my spectacles have become known the world over as the "Dr. Haux Famous Perfect Vision Reading and Sewing Spectacles" and they are now greatly superior to all others on the market. With them you will be able to thread the finest needle and read the smallest print, day and night, with perfect ease and comfort, just as you did in your younger days, and this, even if your eyes are so very weak now that you cannot read the largest print in this paper. In fact the large number of physicians who have for years and years used and recommended my spectacles to their weak-eyed patients will tell you that they are the most perfect fitting, clearest and best in the world today, and I will give you your dollar back and let you keep the five dollar set of spectacles also, if *you yourself* don't find them to be the finest, clearest and best you have ever bought anywhere at any price. I can only send one set to a family at this price, and this only for a short time, so write me *right now* for my free Perfect Home Eye Tester, and address my company as follows:—

DR. HAUX SPECTACLE CO.,
Haux Building, ST. LOUIS, MO.

I WANT AGENTS ALSO And any man or woman (also storekeepers), without any previous experience whatever, can fit the weakest eyes with my Perfect Home Eye Tester, which is so simple that any one can work it and easily earn from $25 to $100 weekly selling my famous spectacles, either in their own homes, travelling or in stores. My agents need no license anywhere as I furnish the necessary documents with the Agent's Outfit

NOTE:—The above is the largest mail spectacle house in the United States and perfectly reliable.

Alabama State Horticultural Society.

The second annual meeting of the Alabama State Horticultural Society was held in Montgomery on Jan. 24 and 25. A large number of enthusiastic fruit-growers and nurserymen attended, and great interest was manifested, more sessions being held than were on the program. Many very instructive papers were read, and various phases of horticulture were discussed at length. Alabama fruit is winning an enviable reputation in the northern markets, and the industry shows a very gratifying growth, which the low price of cotton will still further increase.

The old officers were all re-elected, W. F. Heikes of Huntsville being elected president and Prof. R. S. Mackintosh secretary and treasurer.

The society accepted the invitation of the Thorsby Fruit and Truck Growers' Association to hold the next annual meeting at Thorsby, a young northern fruit-growing colony on the L. & N. railroad. This place was selected because it has given a successful demonstration of some of the possibilities of fruit-growing in Alabama and has, in consequence, attracted considerable attention throughout the state.

Saperdine as a Tree Paint.

The Fruit-Grower has a letter from Dr. H. O. Beeson, Noel, Mo., manufacturer of Saperdine, in which he says this preparation has been very effective in protecting apple trees against injury by rabbits borers, etc. He says the cost of the preparation is very slight, and he refers to numerous orchardists in that part of the state who have tried Saperdine. Dr. Beeson is president of the McDonald County Horticultural Society, and therefore ought to know what is needed in a preparation of this kind, and Fruit-Grower readers will do well to write to him in regard to his prepartion. When you do so, state that you saw his advertisement in The Fruit-Grower.

Easy to Get Subscribers for The Fruit-Grower.

The Fruit-Grower is the easiest paper to secure subscriptions for that I have ever handled, and I have canvassed for a number of different papers. All I have to do is to tell persons I am taking subscriptions, show them a copy of the paper, write down their address, take their money and pass on to the next.

Gentry, Ark. D. S. JAMES.

You are publishing the best horticultural paper I have seen. Those who care for the paper at all prize it highly, I know, and you may well be proud of your intelligent and appreciative list of subscribers.—E. E. Wilder, Norridgewock, Maine.

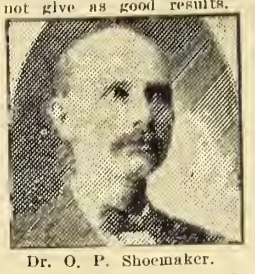
Intelligent farm help is very scarce; 50 young fruit-growers could find work in this section.—J. C. M. Johnston, New Wilmington, Pa.

The "Sure Hatch" Record.

The Sure Hatch Incubator Company started in a very modest way out at Clay Center, Neb., only a few years ago.

At that time they had a small factory and their output was limited to a few machines, but the success of the "Sure Hatch" was wonderful.

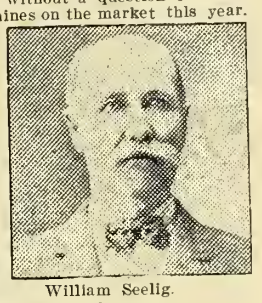
People who bought the "Sure Hatch" soon found that it gave good service, hatched chickens, was easy to run, took little oil and little attention, and yet sold for a lot less money than the older, more complicated machines that did not give as good results.


Dr. O. P. Shoemaker.

As a consequence the sales multiplied very fast, and the Sure Hatch Incubator became the most popular machine on the market. They have sold over 60,000 of these machines throughout the whole United States, and Clay Center, Neb., is known far and wide as the "home of the Sure Hatch"

The ownership of the "Sure Hatch" now is in the hands of Dr. O. P. Shoemaker and Wm. Seelig, the same gentlemen who financially backed it from the beginning. The management was changed two years ago. Dr. O. P. Shoemaker is now president. Mr. William Seelig, Vice-President and General Manager, has charge of the Indianapolis office. The owners now manage the business. The company's business methods are conducted on the Golden rule plan. Every Sure Hatch patron is absolutely assured of a "square deal."

The company has made money, and a hundred thousand dollars backs up the Sure Hatch Incubator. They have without a question of doubt one of the best machines on the market this year.


William Seelig.

The "Sure Hatch" is made to heat quickly with a small amount of fuel, and a very little trouble, because the amount of heating surface (138 sq. in.) on the water heater is sufficient to bring the pipes full of cold water to the boiling point in from three to four hours, in cold weather. Something no other incubator will do.

When the lamp's heat is being used, it is all used, and the egg chamber is heated to the proper temperature, regardless of the weather. When the temperature in the egg chamber gets to the proper point, it stays there, because when it is hot enough, the surplus heat from the lamp automatically escapes—a little, or all of it—just as may be necessary, and the temperature does not go higher. This great feature, this revolution in incubator heater manufacturing, is protected by patent and cannot be had on any but the "Sure Hatch."

"Sure Hatches" are good, they hatch and raise more chicks, that live and grow to the 100 eggs than any of their competitors. The "Sure Hatch" record says so. The "Sure Hatch" record is made up of the testimony of the persons who, during the past six years, have purchased 60,000 "Sure Hatches." The "Sure Hatch" record is reliable. Tens of thousands of the best citizens and wealth producers of this great country of ours, say the "Sure Hatch" is all right.

The Sure Hatch Incubator Company is offering the 100-Egg machine for $10, freight prepaid. In writing, always address their Clay Center, Neb., office, box 4724, if you live west of the Mississippi, or the Indianapolis, Ind., office, box 14724, if you live east.

Troublesome Parasites.

It would seem that everything possessing life has an enemy of some sort. Parasites attack both plant and animal with a persistency and destructiveness, which, if unchecked, works ruin and frequently death. The George H. Lee Co., of Omaha, Neb., manufacture a preparation called Lee's Lice Killer for destroying parasites on poultry, hogs and other stock. It is a liquid and is especially designed for killing lice and mites on chickens and hogs without handling, dipping, dusting or greasing fowls on animals. To do this requires a fluid of sufficient strength so that the gas or vapor given off from it will kill the lice without touching them with the fluid itself. At the same time it must be harmless to fowls, animals or operator and perfectly safe to handle. Lee's Lice Killer is placed on the market as a preparation meeting these requirements and is extensively used not only for poultry, but for horses and cattle as well. In their booklet describing this article it is said that one dollar's worth of Lee's Lice Killer will go further than twice that amount of any other lice liquid or powder in the world. There are also many testimonials as to its efficiency. Further information may be had by inquiring of your local dealer or writing directly to the George H. Lee Company who have had this preparation on the market for a number of years.

Use Food of Known Quality.

When sending away from home for poultry foods and supplies, etc., you should see that you secure the very best. There is a vast difference in the quality of the various commercial poultry foods now on the market. The only safe plan, therefore, is to deal with a house that is known to be reliable. Such a concern is Darling & Company, Union Stock Yards, Chicago, Ill. They manufacture and handle all poultry necessities such as beef scraps, beef meal, laying food, chick food, granulated bone, concentrated meal, oyster shells, mica crystal grit, lice killers, etc. In fact, a full line of the best poultry foods and supplies.

Darling & Company can be relied on for quality. When they say, for example, their beef scraps contain from 55 to 65 per cent of protein, their beef meal from 45 to 55 per cent of protein and that both run low in fat, you can depend on receiving goods just as represented. Protein, by the way, is the essential element. An excess of fat is not desirable. By adhering rigidly to the policy of manufacturing only high grade products, they have built up a great trade among the poultry raisers of the country. Their 100-lb. bag lots of foods have become a very popular line with large and small poultry raisers. We have no hesitancy in recommending the company and their products unreservedly to our readers.

Their poultryman's booklet, "Fill the Egg Basket," has become deservedly popular. It is a book all poultrymen should have. It, as well as their large and finely illustrated Poultry and Stock Catalogue, will be mailed free upon request. You will find their "ad" elsewhere in this issue.

Experiment Stations have found that goods like those manufactured by Darling & Company meet all the requirements so far as quality, manner of grinding, cleanliness, etc., are concerned. This means a whole lot to you. You cannot afford to use any but the best. The results obtained from inferior articles do not justify you wasting time on them.

Asthma

CURED TO STAY CURED.

Attacks stopped permanently. Cause removed. Breathing organs and nervous systems restored. Symptoms never return. No medicine needed afterwards. 21 years of success treating Asthma and Hay Fever. 58,000 patients. Book 351 Free. Very interesting.

Write P. Harold Hayes, Buffalo, N. Y.

"The Whole Thing in a Nutshell"

200 Eggs a Year Per Hen

HOW TO GET THEM

The fourth edition of the book, "200 Eggs a Year Per Hen," is now ready. Revised, enlarged, and in part rewritten. 96 pages. Contains among other things the method of feeding by which Mr. S. D. Fox, of Wolfboro, N. H., won the prize of $100 in gold offered by the manufacturers of a well-known condition powder for the best egg record during the winter months. Simple as a, b, c—and yet we guarantee it to start hens to laying earlier and to induce them to lay more eggs than any other method under the sun. The book also contains recipe for egg food and tonic used by Mr. Fox, which brought him in one winter day 68 eggs from 72 hens; and for five days in succession from the same flock 64 eggs a day. Mr. E. F. Chamberlain of Wolfboro, N. H., says: "By following the methods outlined in your book I obtained 1,496 eggs from 91 R. I. Reds in the month of January, 1902." From 14 pullets picked at random out of a farmer's flock the author got 2,999 eggs in one year—an average of over 214 eggs apiece. It has been my ambition in writing "200 Eggs a Year Per Hen" to make it the standard book on egg production and profits in poultry. Tells all there is to know, and tells it in a plain, commonsense way.

Price 50 cents, or with a year's subscription, 60c; or given as a premium for four yearly subscriptions to the American Poultry Advocate, at 25c each.

Our paper is handsomely illustrated, 40 to 75 pages, 25 cents per year, 4 months' trial, 10 cents. Samples Free. Catalogue of Poultry Books Free.

AMERICAN POULTRY ADVOCATE,
No. 11 Wesleyan Block, Syracuse, New York

$300,000,000.00 IN POULTRY

Do you know that the government census of 1900 gives the value of the poultry produced in that year at very nearly $300,000,000?

POULTRY SUCCESS
The 20th Century Poultry Magazine

is absolutely indispensible to every one interested in chickens whether they be beginners, experienced poultry raisers or only keep a few hens. It is without any question the foremost poultry monthly in this country and readers of its articles on pure bred chicks and their better care and keeping have come to realize that it is a plain truth that "there is money in a hen."

Poultry Success is 16 years old. Has from 36 to 80 pages every issue. Is beautifully illustrated and handsomely printed. Has best writers. Regular subscription price 50 cents.

Special Introduction Offers

If you keep chickens or are in any way interested in them we will send Poultry Success one year to new subscribers, and include a large illustrated practical poultry book free; or 10 cents for three months' trial. Address today, Poultry Success Co., Dept. 97, Springfield, Ohio.

Poultry & Fruit

go well together. The Poultry Topics is to the chicken industry what The Fruit-Grower is to fruit growing. We send Poultry Topics one year for 10 cents. Less than cost. This to prove its goodness. Sample free. Dime returned if you want it.

Poultry Topics, Lincoln, Neb.

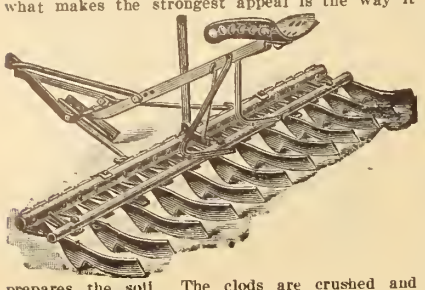
HAVE YOU RENEWED?
The "Five for $1.00" Offer
AND THE
"Three Years for $1" Rate
WILL BE
Withdrawn May 1, 1905

Until that date we will accept renewals and the names of four NEW subscribers one year for ONE DOLLAR.

FRUIT-GROWER COMPANY
ST. JOSEPH, MO.

The Pulverizing Harrow.

Every farmer wants to get his field in the best possible condition at sowing time. Other things being equal, the better the seed bed the better start the plants will make. And a good, quick start shows clean through the season and at harvest time. The desire to have the ground properly prepared for sowing and planting has caused farmers to welcome the Acme Pulverizing Harrow, advertised elsewhere, which, perhaps better than any other, accomplishes this purpose. Incidentally, it is a riding harrow, and this makes a strong appeal to farmers, as it does away with one of the most slavish pieces of work on the farm. But what makes the strongest appeal is the way it



prepares the soil. The clods are crushed and its backward slope, peculiar shaped coulters cut under, stir, turn and level the ground. It is not a harrow for a special purpose, but for all purposes. It does all that any other harrow will do and does it to better purpose. It is made of steel and hence there is almost no wear to it. Readers of this paper have frequently noticed the advertisement of it in our columns. The manufacturer, Duane H. Nash, Millington, N. J., makes a generous offer to our readers in his FREE TRIAL PLAN OF SELLING. We regard the Acme Harrow as a good investment, and have no hesitancy in commending the manufacturer's proposition to our readers.

A NEW METHOD OF GRAFTING.

To Secure a Hardy, Vigorous Root System.

A great deal of interest is being taken in the long scion, foster mother root, method of grafting, and it is believed by many prominent horticulturists that it will revolutionize the methods of propagating the apple, especially in the northern states.

All apple trees are propagated by grafting or budding on apple seedlings and in methods in ordinary use the seedling root makes the entire root foundation of the tree, thus leaving the tree entirely dependent upon it for its life and support. Now when it is taken into consideration that over 90 per cent of apple seedlings are known to be tender if left unprotected in any of our northern states, it will readily be seen that some better methods of propagation are badly needed.

After much experimenting along the line of propagating in various ways to secure hardier rooted trees Mr. Charles F. Gardner, who for several years was president of the Iowa State Horticultural Society, perfected the LONG SCION, foster mother root, method referred to above. By this method the seedling root is grafted on the side of a long scion, at about two inches from the bottom, making the completed graft as shown in the illustration. This graft is set into the ground to the depth of from six to eight inches, leaving several buds on the scion above ground so to enable it to commence active growth. During the first summer the scion will throw off roots around the bottom and also along up the scion to within a couple of inches of the top of the ground

and by the time the tree is ready for orchard planting it will be firmly established on its own hardy roots, for if the variety is of known hardiness then the roots are as hardy as the top, because growing from the scion they are necessarily the same.

Now it will be seen that during the first summer the foster mother or seedling root was of the utmost importance as a feeder to get the scion started, but if it proves to be tender and winter kill it will not affect the life and vigor of the tree in the least.

Another very valuable feature about this method of grafting is that it does away with the black heart so common to the piece root grafted trees. In inserting the root to the scion the cut extends only through the cambium layer and does not go into the heart.

Mr. Gardner is so interested in this method of propagation that he has authorized the Gardner Nursery Company, of which he is president, to offer 6 of these LONG SCION, foster mother root, APPLE grafts in best assorted varieties, entirely free to every interested property owner who will plant them and give them a fair show and report results after they get to fruiting. Postage on the bunch is 5 cents, which send if convenient; if not, a postal request will bring them to you.

We advise our readers to take advantage of this exceedingly liberal offer and get these valuable little grafted trees, which if properly planted and cared for, will produce many barrels of fine apples in a few years' time. Address your request to Mr. Charles F. Gardner, care The Gardner Nursery Company, Osage, Ia., and be sure and mention this paper.

Where Honesty Paid.

Near Shenandoah, in the famous Iowa cornbelt, lies Sleepy Hollow Farm. Here some eleven years ago a young market gardener concluded that instead of confining his efforts to gardening for the consumer he might as well be raising seed for the producer.

Having been raised a gardener, his early experience and training rendered him peculiarly adapted to the business of a seedsman; to anticipate the needs and avoid causing the trouble and annoyance which so often vex the patience of the truck farmer.

At the start he determined that only reliable seeds should be sold under his name and only those he could guarantee; that full measure, just weight and true description should be the rule. He began by making his neighbors his first customers and they soon discovered that in him they had a man who could always be depended upon to furnish nothing but honest goods. They spread the news to others and the ever-widening circle of pleased patrons necessitated the steady increase of his facilities, until now the name of Henry Field, Seedsman, or as he is often called, the "Ear Seed Corn Man," is known far and wide among farmers and gardeners throughout the Middle West.

His annual catalogue is a mine of information on seed subjects and a carefully prepared list of good things to be found in the "Red Packet" seed packages, red packet being the Mr. Field's method of identifying the seeds shipped from his establishment. Before purchasing seed it is worth while securing a copy of Mr. Field's catalogue, which he sends free of charge, and becoming acquainted with the good things he offers. The 1905 edition is now being sent out.

Successful Farmers and Gardeners.

The successful gardener is successful because he cultivates his brain while cultivating his garden. He must not only know soil conditions, the time to plant, be able to judge the best seed, and know when to cultivate, but he must be a judge of the tools he will use, and be able to select those which will give the greatest amount of service with least labor.

The Bateman Mfg. Co., of Grenloch, N. J., have for nearly seventy years made a special study of the manufacture of labor-saving, money-making tools. There is no point of excellence that their famous Iron Age farm and garden implements do not cover. The No. 6 Combined Double and Single Wheel Hoe, Hill and Drill Seeder, shown in the illustration, is a good example of the utility and completeness of the modern implement for gardeners who cultivate for profit. This tool is equipped in a most

satisfactory manner for all work on market garden or farm, where hand work is to be employed in seeding and cultivating, or where horse cultivation is to be employed after the plants arrive.

The seed-sowing device is very simple, and the change from sowing in continuous rows to that of dropping in hills can be instantly made. The hopper holds two quarts and will distribute uniformly whether full of seed or when only a small packet is to be sown.

It can be changed into a complete double or single wheel hoe by the most inexperienced in less than five minutes. The high wheels of this implement also make it easy to operate, yet do not give to inequalities of soil, as a low wheel.

The manufacturers issue a free book, "Iron Age," describing in detail this valuable combined outfit, as also a large line of garden tools, horse hoes, cultivators, potato planters, sprayers, etc. The book also gives considerable information of interest to every farmer and gardener. A postal card directed to the Bateman Mfg. Co., Box 506, Grenloch, N. J., will secure it.

Sends West for Stump Pullers.

It seems strange that the timbered east, where all manufacturing industries are so important, should look to the prairie country for stump pulling machines. This is called forcibly to mind by an order recently placed with the Hercules Mfg. Co., of Centerville, Iowa, by E. H. Harriman, the railway magnate, in New York. The order was for a Hercules Stump Puller, complete, with steel cables, improved power pulley and steel grub plow. The outfit was to be put to work on Mr. Harriman's farm at Arden, Orange County, New York.

This is the same stump pulling machinery that is regularly advertised in our columns. The placing of the Harriman order carries its own comment. He is able to afford himself the best and the order was placed after full investigation by his foreman. There are ample

reasons why the Hercules stump pulling machinery is considered the best of its class. A few of the reasons are briefly mentioned in the advertisement. If you have stumpy fields, or have clearing to do, it would be a good plan to correspond with the Hercules Company for full particulars. An illustrated circular giving all information will come promptly on request.

"Be sure you are right then go ahead." The successful farmer always looks to his seed corn. He knows how important it is to plant the right variety and the kind that will grow. The Nishna Valley Seed Co., of Hamburg, Ia., make it their business to breed, raise and properly cure just this kind of corn. You take no chances on their seed corn. It's sure to make a good stand and a full yield. The Nishna Valley Seed Co. are in the seed business to stay and would rather lose a customer than furnish one bushel of poor seed of either corn, field or garden seeds. It's enough to say that they have a fine reputation for reliability. Their free catalog will tell you the rest. Address Nishna Valley Seed Co., Box G, Hamburg, Ia.

TRUCK AND FRUIT LANDS
ALONG THE
IRON MOUNTAIN ROUTE
IN ARKANSAS AND LOUISIANA HAVE PASSED THE EXPERIMENTAL STAGE, AND IT IS POSSIBLE FOR ONE TO PAY FOR HIS FARM IN ONE YEAR'S CROP AND STILL HAVE A RESERVE FUND TO CARRY HIM TO THE SUCCEEDING YEAR. $5 TO $10 PER ACRE IS THE PURCHASE PRICE. THE MAN OF SMALL MEANS SHOULD BUY NOW AND SECURE THE BENEFIT OF AN EXCELLENT INVESTMENT.
THIS IS THE RAILROAD WHICH CARRIES YOU TO INEXPENSIVE AND COMFORTABLE HOMES—
CLIMATE IDEAL.
FARMING AND STOCK RAISING THE YEAR AROUND.
4—TRAINS DAILY FROM ST. LOUIS—4
QUICK TIME, BEST SERVICE, SPECIAL HOMESEEKERS' RATES, AND FREE RECLINING CHAIR CARS.
THINK THE MATTER OVER, AND WRITE US FOR LITERATURE AND DETAILED INFORMATION.
H. C. TOWNSEND,
GENERAL PASSENGER AND TICKET AGENT,
ST. LOUIS, MISSOURI.

Burlington Route
OWN A FARM; DON'T RENT
BUY AN IRRIGATED FARM for yourself or your son before the advancing price shuts you out. The time is fast coming in this country when the owner of a good farm will be a very independent man; the acreage of farm lands is limited, but our population is rapidly increasing.
THE BIG HORN BASIN has ample water, a splendid sunshiny climate and a soil which, under water, is as rich and productive as any in the temperate zone; send for our special Big Horn Basin folder, and keep that locality in your mind in looking into the future.
On the first and third Tuesday of each month the Burlington Route runs excursions to the farm regions of Nebraska and the Big Horn Basin. Exact rates will be furnished if you will write. Address
R. H. CROZIER,
Div. Pass. Agt., Burlington, Route,
ST. JOSEPH, MO.

Fruit Growers and Farmers
Thousands of the best fruit growers and farmers in all parts of the U. S. read the
SOUTHERN FRUIT-GROWER
because they find it the most helpful fruit paper published. Contains 24 to 40 pages of valuable fruit and farming information every month. 50c a year. Send 25c and 10 names of fruit growers and get it a year on trial. Sample free.
The Southern Fruit-Grower BOX 46. CHATTANOOGA, TENNESSEE

The Fruit-Grower for 1903 and 1904
We have on hand a few complete volumes of The Fruit-Grower for 1904 and thirty complete volumes for 1903. While they last they will be sold unbound at regular price.
Fifty Cents a Volume
Either of these volumes will be neatly and substantially bound in cloth and mailed postpaid for two dollars a volume. Write at once if you want them.
THE FRUIT-GROWER CO., ST. JOSEPH, MO.

The Seed Book of the Year.

Maule's Seed Book for 1905 is a surprise. It is a surprise every year for that matter. This time it is the absence of colored plates, except the two cover pages. Heretofore the Maule catalogue has led in its handsome colored plates. Now for the reason: The thousands of dollars which their omission saves Mr. Maule will be expended in a free distribution of choice seeds among his 1905 customers, each one receiving a 10-cent packet for each 50 cents of their order, and if the latter amounts to $5 or more ten 10-cent seed packets. We have no doubt that this will be a popular innovation. The catalogue is of the usual large size of the Maule catalogues, and its 152 pages are crowded with good things. It is business from start to finish, and no farmer or gardener will be properly equipped for the season without a copy.

Dr. Coffee's Famous Books Free.

Readers of The Western Fruit-Grower should remember that each subscriber is entitled to a copy of either one of Dr. Coffee's Medical Books Free. Read his advertisement on page 40 of February edition. People afflicted with weak or diseased eyes should write for his book on Eye Diseases. Deaf people should write for his book on Deafness. Just mention this paper. A copy of these splendid books should be in each house. Address Dr. W. O. Coffee, 816 Good Block, Des Moines, Iowa.

Are You Looking Ahead?

To the man looking ahead the Southwest has an urgent invitation. The opportunity is today when investment chances are good and homes can be purchased at from one-tenth to one-half the prices asked in the North and East.

To the Homeseeker.

Through the M. K. & T. Land Bureau, thousands of acres of rich farm lands (improved and unimproved), located along the line of the Missouri, Kansas & Texas R'y in Missouri, Kansas, Indian Territory, Oklahoma and Texas, are now offered for sale. The lands are especially adapted to the growth of corn, wheat, oats, fruits, vegetables, rice, cotton, sugar cane and for stock farming. The lands are well located as to markets, schools, etc.

To the Investor.

All over the Southwest, cities and towns are growing up, expanding, requiring more, demanding more, peopled by eager, pushing, wideawake citizens, who see the virtue of encouraging enterprises of every kind, the needfulness of getting more and better facilities, and more hands to develop the country.

The oil and gas fields of Kansas, Indian Territory and Oklahoma are practically new and offer wonderful opportunities for development along commercial lines.

BRIEFLY THE CONDITION IS THIS:

The Southwest is really in need of nothing save people. More men are wanted. In the Southwest are vast areas of unimproved land—land not yielding the crops of which it is capable. The same thing, in a different way, is true of the towns. Few lines of business are adequately represented. There are openings of all sorts—for mills and manufacturing plants, for small stores of all kinds, for banks, newspapers and lumber yards. Mechanics and professional men, both are in demand.

We are in possession of all sorts of information valuable alike to the investor and homeseeker. If you are interested, tell us what you want, how much you have to invest, and we will gladly furnish the information.

Write today for a copy of our book "Business Chances." It's free. Address

GEORGE MORTON,
General Passenger and Ticket Agent,
ST. LOUIS, MO.

The CHEAPEST FARM LANDS

In the United States today—soil, climate, markets, transportation facilities, and all considered—

Are SOUTHERN LANDS

They are the best and most desirable in the country for the truck and fruit-grower, the stock raiser, the dairyman and the general farmer.

Let us tell you more about them. The Southern Field and other publications upon request.

M. V. RICHARDS, Land & Industrial Agent, Southern R'y and Mobile & Ohio R'y, Washington, D. C.

CHAS. S. CHASE, Agent, 722 Chemical Bldg., St. Louis, Mo.

M. A. HAYS, Agent, 225 Dearborn St., Chicago, Ill.

Grand Island Route

Short Line Between

St. Joseph *and* Kansas City

DOUBLE DAILY SERVICE, with new 80-foot Acetylene Gas-lighted Pullman Chair cars (seats free) on night trains and Pullman high-back seat coaches on day trains, between Kansas City and St. Joseph, Mo.; Hiawatha, Seneca, Marysville, Kan.; Fairbury, Fairfield, Hastings and Grand Island, Neb.

Connections made at Kansas City for all points East, South and West.

At Grand Island direct connections are made with Union Pacific fast trains for California and the Pacific Northwest.

S. M. ADSIT,
Gen'l Pass. Agt, St. Joseph, Mo

RUPTURE CURED IN TEN DAYS By a Scientific and Never-failing Process. No Knife, no pain, absolutely no danger. IN TEN DAYS THE PATIENT IS SOUND AND WELL—cured to stay cured. Write for proofs, booklet, etc., FREE.
DR. O. H. RIGGS, 206-X. Altman Building, Kansas City, Mo.

The above illustration is a pointed object lesson on what careful selection and breeding will do in producing a standard variety of field corn. These samples were selected at random from the big seed warehouse of the well-known A. A. Berry Seed Co., Clarinda, Ia., and are but an average of the excellent seed-corn they are shipping to their customers all over the corn-belt. Their garden and field seeds are of the same standard of excellence and justify the statement that if you want sure crops and a bountiful yield of corn, vegetables, or general farm crops, send your order to A. A. Berry Seed Co., Clarinda, Ia. Their elegant new 1905 catalogue is free. It is a gold mine of seed planting information and contains the spiciest little tip on the side to seed buyers you ever heard of. Don't order until you hear from Berry.

For Lovers of Music.

You can now get a Victor Talking Machine and one dozen Victor records on free trial at your home. If not satisfactory you return the machine and the trial costs you nothing.

The lowest spot cash price of the instrument and one dozen Victor records is $20. Terms are $5.00 down and $2.50 a month.

"HIS MASTER'S VOICE"

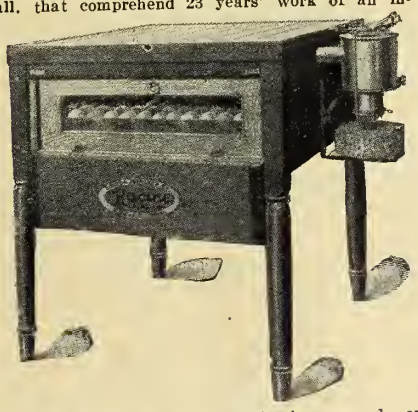
You need pay nothing for the free trial of the machine, for whatever payment you have made will be refunded to you at once if you return the instrument, and if you do keep the machine you need pay only $5 at once as you have ample time to pay the balance on terms named above.

This is a great opportunity to get a genuine Victor Talking Machine. The Talking Machine Company offers a chance to responsible people, because the company know when you get the Victor you get the machine that you will be proud of and will gladly pay the first $5 and the payments of the balance in monthly installments. No leases or chattel mortgages are required. You own the instrument when you accept it.

A free catalog of a list of 2,000 records will be sent on request to any one writing to the Talking Machine Co., Department 105, 107 East Madison St., Chicago.

The Racine Incubator.

We are reproducing here a cut of the Racine Incubator, manufactured by the Racine Hatcher Company, Racine, Wis. This is the incubator that has resulted from the continuous work on incubators of a man who has given 23 years over entirely to this single occupation. Our readers have doubtless been struck with the distinctiveness, we might say peculiarity, of their Incubator Book, rather than to the machine itself. We give the illustration, but must follow the same plan in this notice. The points made, the theories demonstrated and put into practice, the workings and the why of it all, that comprehend 23 years' work of an in-



cubator specialist, are not to be covered, or even hinted at, in a notice like this. The book itself must be read. The book is not sold. A postal will bring it, and aside from showing wherein the Racine differs from most incubators, it contains a fund of sound sense which every poultry-raiser must appreciate. The vital feature in the Racine, as in all incubators, is heat supply, regulation and ventilation. Of this problem the Racine Incubator presents what seems to be a well nigh perfect solution. The uniform good results produced by many thousand users, in all parts of the country, attest this fact. There is no question about the Racine being in the first rank of Incubators. We advise sending for the book and learning the theories of incubation, which it has reduced to practice. Consult the advertisement elsewhere and direct accordingly.

The Incubator an Educator.

It's not a question nowadays whether Incubators will hatch chicks. It's a question which one to buy. There are so many makes on the market that it is hard to give advice on any one special make.

Looking at the history of artificial incubation in America from a critical standpoint the name "Prairie State Incubator" stands identified intimately with its successive stages of progress.

The Prairie State system of incubation is an education. Any man, woman or child can apply the plain directions in the Prairie State book of directions.

The Prairie State Incubator is easy to run. A few minutes' attention every morning and night is all it needs. It is easy to learn from the book of directions how to test the eggs, how to turn and air them, how to get big hatches from fertile eggs, how to avoid the mistakes made by others, and to profit by their successes. The Prairie State needs little attention. Its regulator is trustworthy and unvarying. The Prairie State system of ventilation gives warm, fresh, vitalized oxygen to the eggs without endangering them by puffs of cold air either in center or corners.

The Prairie State has been a winner "from the start." From 1886, when Mr. Mix first put his Incubator on the market and won the first prize at the great St. Louis show, to the present date, the Prairie State has been forging ahead—a steady winner. Three hundred and twenty-six of these prizes are recorded in the new catalogue with dates.

The Prairie State Catalogue is a library of information on every point for the ducation of beginners or experts in poultry raising. Any one can get one free from the Prairie State Incubator Company, Homer City, Pa.

If We Can Only Convince You.

The idea of building your own incubator is a new one to most people. We are the originators and the first to offer complete, systematic plans for building trustworthy, modern incubators and brooders, containing all of the late improved fixtures. But when we once convince an inquirer and he builds a machine we never fail to have in him a strong supporter of our proposition. Wherever our machines have been built we have never failed to sell several more in that locality. For example: At the World's Fair at St. Louis, a gentleman entered our exhibit, and after carefully looking over the machines in operation, stated that he had been interested in our proposition for some time; had seen our advertisement, had written us and received our catalogue, etc., which he

admitted were very convincing; but, he could not convince himself that he could build an incubator. After thoroughly explaining our entire proposition, and showing him a machine open, displaying all the parts, I convinced him in five minutes, and sold him five sets of fixtures. He said he was satisfied that his boy, 10 years old, could build the machine from our instructions and fixtures, without the least trouble.

Now, we have tried in our ads this year to make them convincing, by sincere statements of fact. It IS EASY to build your own incubator. Try it, and prove it yourself.

Our catalogue, "HOW TO MAKE AND SAVE MONEY WITH INCUBATORS AND BROODERS," explains everything. It is also full of valuable information for all interested in poultry, and may be the cause of saving you many dollars. Remember, it is free for the asking. Write for one today. Address your letter to CHANNON, SNOW & CO., Dept. R, Quincy, Ill., and your request will be attended to immediately. Yours very truly,

HARRY A. SNOW.

A Seed Grower and Seed Seller.

If you want to be dealt with liberally, and at the same time buy your seeds from the man who grows them, R. H. Shumway, seed-grower, Rockford, Ill., is a good man to get into correspondence with. You will be assured of fresh seeds and the variety you select. That assurance is worth paying an extra price for, but Mr. Shumway is remarkably low in his prices, far lower than most seed sellers, many of whom buy their stocks to sell again. Of course they must all have a profit. Mr. Shumway grows and sells many seeds at a penny a packet. That's better than a nickel a packet when you know them to be of right varieties and fresh.

Onions, for example, are something of a specialty with him. Some varieties of onion seed he is now selling at only 50c a lb. He publishes a catalog of his home-grown seeds, and mails free to all applicants. It is a good seed book to send for.

The Better Way is the Best Way.

This is fully exemplified in the booklet issued by the N. B. Johnson & Co., of Kansas City, Mo., explaining fully their method of buying and selling property, no matter where located, to the entire satisfaction of their clients, making quick sales and purchases as the case may be. Their advertisements appear in many of the leading publications in the middle west, and their reputation for fair dealings with their clients is beyond question.

It's Free.

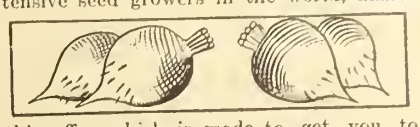
The new beautiful illustrated catalogue of the Kansas City Barber College, of Kansas City, Mo., will be sent free to young men who contemplate learning the barber's trade. Students who graduate from this school obtain well-paying positions. This school is the largest and best equipped and teaches a thorough practical course in the shortest possible time.

The A. A. Berry Seed Company whose advertisement appears in our columns are having a warm time these days filling orders for their popular brands of seed corn, garden and field seeds. The new assistant to Mr. Berry, Mr. W. C. Affeld, is finding ample scope for his fine business ability in helping to keep even with the avalanche of new orders that are already upon them. Good seeds, fair dealing and prompt shipments are appreciated by our farmers who are no longer buy seeds, but modern business men. Write for their new free catalogue. It's one if the very best and has a few extra features that every seed buyer ought to know. Address A. A. Berry Seed Co., Box —, Clarinda, Ia.

The Fruit-Grower is the best all-round paper I ever saw.—W. M. Ham Belle River, Ill.

Millions of Vegetables.

When the Editor read 10,000 plants for 16c, he could hardly believe it, but upon second reading finds that the John A. Salzer Seed Co., La Crosse, Wis., than whom there are no more reliable and extensive seed growers in the world, makes



this offer which is made to get you to test Salzer's Warranted Vegetable Seeds. They will send you their big plant and seed catalog, together with enough seed to grow

1,000 fine, solid Cabbages,
2,000 rich, juicy Turnips,
2,000 blanching, nutty Celery,
2,000 rich, buttery Lettuce,
1,000 splendid Onions,
1,000 rare, luscious Radishes,
1,000 gloriously brilliant Flowers,

ALL FOR BUT 16C POSTAGE,

providing you will return this notice, and if you will send them 20c in postage, they will add to the above a package of famous Berliner Cauliflower. [F.P.]

NOW READY

The
"Brother Jonathan"
Series of
Fruit Booklets

See large ad. for description and full information. Read proposition whereby you may get the five books FREE.

Best Thing on Wheels

FREE RECLINING CHAIR CARS
ON THE
Henderson Route
ALL TRAINS BETWEEN
ST. LOUIS, LOUISVILLE
AND KENTUCKY POINTS

SPECIAL RATES
One-Way Colonist and
Round-Trip Homeseekers

When you travel, why not be comfortable? The up-to-date equipment, the safe and convenient train schedules offered by the HENDERSON ROUTE and the direct connections made in St. Louis Union Station with all trains from the West and Southwest solves the problem.

If you contemplate a trip, take the time to write us.

Insist on your ticket reading via St. Louis and the Henderson Route. This will insure you comfort in travel.

ASK US FOR RATES.

F. G. CUNNINGHAM, - - T. P. Agt.
W. C. LINDSAY, - - - G. Agent.
206 N. Broadway, ST. LOUIS.

Cuba Florida New Orleans

Tourist tickets now on sale to the resorts of the South and Southeast at greatly reduced rates. Liberal stopovers allowed. The

Illinois Central R. R.

with its handsomely equipped trains offers exceptional facilities for reaching the Sunny South.

For particulars and copy of illustrated booklets, giving detailed information about Cuba, Florida and New Orleans, write

W. H. BRILL

D. P. A. Ill. Cent. R. R., Omaha, Neb.

WE WANT 5,000 AGENTS

One in every township. Position permanent. Nice income every month without interfering with your regular work. An honest proposition, and a money maker. Must send reference. No experience necessary.

R. E. LEE, Box 772, SIOUX CITY, IA.

In writing to advertisers always mention the Fruit-Grower.

The Story of a Success

HOW THE NAME "SPLIT HICKORY" BECAME A POWER IN THE VEHICLE WORLD.

Back of every great business success there is a story, if one can but get at it.

The success of the Ohio Carriage Manufacturing Co. of Cincinnati, makers of the famous Split Hickory Vehicles, with whose merits thousands of our readers are already familiar because they own Split Hickory buggies, is a striking instance of this truth.

A personal acquaintance with Mr. H. C. Phelps, the president of this concern, enables us to present from the inside the inspiring story of how a young man, acting entirely upon his own initiative and working along new lines, built up in a few years a business that today is the giant in the carriage manufacturing industry.

Mr. Phelps is a man of original ideas and during his years of practical training in all branches of buggy making, he thought out a plan of selling buggies that was so radical a departure from established methods that when he organized The Ohio Carriage Mfg. Co. and announced his policy, the "wise" heads of the carriage world said, "Phelps, you're crazy. If you persist in startiug your business on that plan your company will be bankrupt in a year." A few, more liberal in their views, gave him two years in which to make a business failure. "Just give the young man enough rope and he'll hang himself, sure," was the way they put it.

Phelps said nothing—just smiled.

That was many years ago, and H. C. Phelps is in business today—his company selling more buggies and better buggies by his "fool" plan than any manufacturer in the United States, and competitors are about breaking their necks in a fruitless endeavor to keep up with him.

What was the "hair-brained idea" that set the carriage world langhing?

Simply this:

Mr. Phelps, always a careful student of every phase of the carriage industry, saw that under the old methods of doing business the CONSUMER was being "whipsawed" between the manufacturer and the dealer, to the detriment of both manufacturer and consumer.

The manufacturer was compelled to CHEAPEN his product in order to meet the demands of the dealer, or the catalogue house buyer, for low-priced goods.

The consumer, on the other hand, was expected to pay a robber's profit to the dealer or catalogue house for buying the buggy for him.

If the buggy was offered him at a ridiculously low price, he found to his sorrow that its construction was even more "ridiculous" than the price—only there was no humor in the situation for him.

Mr. Phelps' bold stroke of business policy was nothing more nor less than to build good, honest, absolutely first-class vehicles, sell them to the consumer direct on what he termed a "30 days' free use plan," and to show his good faith by giving the purchaser, as an additional safeguard, a full two years' binding guarantee, covering every part of the vehicle, covering its WEARING qualities, covering the MATERIAL used in it, covering the WORKMANSHIP at every essential point.

On the success or failure of this policy he willingly staked his entire capital, his reputation—everything—and won. He won because the public recognized almost instantly the new element of FAIR PLAY in this policy, which afforded them a protection they had never before had, and gave them the immense advantages of buying at wholesale and from first hands. Mr. Phelps struck the keynote, and the public responded—"Send on your buggies."

Orders began pouring in from all parts of the United States. The business of the Ohio Carriage Mfg. Co. has a history of continuous and rapid growth that has few parallels in the manufacturing world.

The "fair play" policy of the house has won friends and kept them, during all these years. Mr. Phelps' contention that the average man could be trusted with his buggies, has been tested thousands and thousands of times, and found correct. The experience of the Ohio Carriage Manufacturing Co. shows that the customer does not abuse the confidence reposed in him in shipping any kind of a vehicle he wanted, to be "tried out" for thirty days, and sent back if not satisfactory. He appreciates this sort of treatment. And so it has come to pass that the "golden rule" is the real basis of the pleasant and satisfactory relations between the Ohio Carriage Manufacturing Co. and its many thousands of customers in all parts of the United States.

But we are getting ahead of our story. On every page of the history of this Ohio carriage manufacturer's remarkable success is written large the words "SPLIT HICKORY." At the very outset of his career as a manufacturer of vehicles Mr. Phelps laid as the corner-stone of the business, "Quality."

The use of SPLIT HICKORY in wheels and running gears was decided upon, and from that day to this every Split Hickory buggy has had wheels and running gears made entirely of Split Hickory. Small logs of second growth Shellbark Hickory are split with the grain, and the pieces that split straight are selected, all cross-grained wood being discarded.

These pieces, split to the size of a rifle ramrod, can be bent until the ends come together without breaking.

Here is the secret of the wonderful wearing qualities of Split Hickory buggies. The great elasticity of the parts that must withstand the wear and strain of hard usage, not only adds to the life of the buggy, but to its easy riding qualities as well.

There is another interesting point in connection with this company that merits attention, namely, the question of competition. Encouraged by the success of the Ohio Carriage Mfg. Co. in dealing with the consumer direct, others have, as they express it, "gone into the game."

And in that expression they unconsciously disclose one of the reasons for their failure to win—they make the fatal mistakes of regarding selling buggies by mail as a "game."

The Ohio Carriage Mfg. Co. have always held strictly to the lines of straightforward business policy. They keep their vehicles up to the highest standard of Split Hickory Quality always, regardless of the competition of rattle-trap buggy makers or the "scrap heap" catalogue houses. They employ skilled labor, and pay good wages. You will not find any boy painters in their painting department, or $3.00-a-week girls in the trimming department. Every vehicle that they turn out is built from the ground up in their own great factory, and is just as good as modern methods, up-to-date equipment and skilled labor can make it.

We have carried the advertisements of the Ohio Carriage Mfg. Co. in our columns for years and have never had a complaint from a single subscriber.

Those of our readers who think of buying a buggy or a vehicle of any kind, should send for a free copy of their beautiful 1905 catalogue, containing 192 pages, and showing their entire line of Split Hickory Vehicles and Oak Tanned Harness. A postal card request will bring it. Address The Ohio Carriage Mfg. Co. (C. H. Phelps, Pres.) Station 46, Cincinnati, Ohio.

Protected by Block Signals

The first railway in America to adopt the absolute Block System in the operation of all trains was the

Chicago, Milwaukee & St. Paul Railway

It today has more miles of road operated under block signal rule than any other railway company. The St. Paul Road was the first railway to light its trains by electricity, and it now has more than 400 electric-lighted passenger cars in daily service. This is a considerably great number than operated by any other railway. The St. Paul Road was also the first to adopt the steam-heating system, and its passenger trains are today the best heated trains in America.

The Southwest Limited leaves Kansas City, Union Station, 5:55 p. m., Grand Ave., 6:07 p. m. Arrives Union Station, Chicago, 8:55 a. m. This is the train that has taken first place between Chicago and Kansas City in its first year, *and holds it.*

G. L. COBB,
Southwestern Passenger Agent,
907 Main St., KANSAS CITY, MO.

Are You Interested in the South?

DO YOU CARE TO KNOW OF THE MARVELOUS DEVELOPMENT NOW GOING ON IN

THE GREAT CENTRAL SOUTH?

OF INNUMERABLE OPPORTUNITIES FOR YOUNG MEN OR OLD ONES—TO GROW RICH?

Do you want to know about rich farming lands, fertile, well located, on a Trunk Line Railroad, which will produce two, three and four crops from the same field each year, and which can be purchased at very low prices and on easy terms? Abont stock raising where the extreme of winter feeding is hut six (6) short weeks? Of places where truck growing and fruit raising yield enormous returns each year? Of land where you can live out of doors every day in the year? Of opportunities for estahlishing profitable manufacturing industries; of rich mineral locations, and splendid business openings?

If you want to know the details of any or all of these write me. I will gladly advise yon fully and truthfully.

G. A. PARK, General Immigration and Industrial Agent

LOUISVILLE & NASHVILLE RAILROAD CO.
LOUISVILLE, KENTUCKY.

How I Make the Blind See and Cure Eye Diseases.

Dr. Oren Oneal, the noted Chicago eye doctor, explains his method.

"People," said Dr. Oneal to a representative of The Western Fruit-Grower, "are beginning to realize the folly of attempting to restore sight and cure eye troubles by the use of the knife. You know of people who have been made blind and caused untold suffering by the use of the knife on the eye. Every one is familiar with such instances. I have been preaching against the use of the knife for over twenty years. The eye is too delicate to be submitted to such barbarous treatment. Twenty-five years ago I advanced the theory that Cataracts and all other eye diseases which cause blindness, are caused by impaired circulation of the blood in the eye, the result of strain. Eye strain is wonderfully frequent, though not always recognized. This strain weakens all the nerves and muscles, and this weakness finally results in disease; then the average doctor take a knife, if you will let him, and tries to cut away this weakness. Think of the folly of such a procedure. Suppose you overtax and starve your system until you are attacked by some disease, as you surely will be, would you think of resorting to the surgeon for relief? Certainly not. The proper method would be to restore your strength and health by proper food, exercise and other hygenic measures. I discovered, many years ago, a method of restoring the natural circulation of blood to the eye, which is so simple that a child might apply it. By this simple method I have restored sight to thousands in all parts of the world. It does all of this by removing all strain on the nerves and muscles, thereby equalizing the circulation and assisting nature in restoring the eye to its normal functions. I will be glad to send my book and free advice to any reader of The Fruit-Grower who is interested enough to write to me. My book contains much valuable advice on the care of the eyes, it is handsomely illustrated and cointains names and addresses of many who have been cured by my method in their homes at small expense." The doctor says a postal card will get the book, and we advise our readers who are interested to write for it.

Address Dr. Oren Oneal, Room 926, 52 Dearborn St., Chicago.

Free to the Deaf.

Deafness is a trouble that brings untold sorrow and privation to mankind, and those who suffer from this cruel and grievous affliction will indeed rejoice to learn of the great strides made of late by science in the conquering of this ailment. We earnestly advise all readers of The Western Fruit-Grower who are sufferers from deafness or whose hearing is failing in any degree, to turn at once to page 51 of this issue and read the announcement of deafness Specialist Sproule, of 324 Trade building, Boston, Mass. This eminent physician, who is well known as the discoverer of the best cure for deafness yet found, will gladly give to all sufferers from deafness the most valuable medical advice, absolutely free of charge, on the cure of this ailment. We urge our readers who suffer from deafness to write to him for the information without charge, and they may be sure of receiving in reply a friendly and helpful letter that will be of the greatest assistance to them.

READERS WHO WERE CURED

Of Kidney Disease, Bladder and Urinary Trouble and Rheumatism. You, Too, Can Try It Free and Be Cured.

We would like to have every reader of The Western Fruit-Grower who suffers from any disease of the kidneys, bladder or rheumatism and earnestly desires to be cured, secure a free trial of the well-known discovery by Dr. Edwin Turnock that seems to have such a wonderful quick effect in curing these diseases. You will doubtless remember Dr. Turnock as the famous specialist in uric acid diseases whose original discoveries some years ago startled the medical fraternity of both hemispheres when they were made public and brought to light a newer and better system for the cure of these diseases. These discoveries are now embodied in the famous treatment bearing his uame and which is accomplishing such remarkably prominent cures in Bright's disease, diabetes, dropsy, gravel, weak back, stone in the bladder, frequent desire to urinate, albumenuria, sugar in the urine, cystitis, pains in the back, legs, sides and over the kidneys, swelling of the feet and ankles, retention of urine, getting up nights, pain in the bladder, wetting the bed, and snch rheumatic affections as chronic, muscular or inflammatory rheumatism, sciatic, rheumatic neuralgia, lumbago, gout, etc., which are now known to be due entirely to uric acid poison—in short, every form of kidney, bladder or urinary trouble in man, woman or child.

To show that really wonderful things are being done by this treatment the case of soldier H. C. Hamilton can be cited. He is 83 years old, a veteran of the Civil War, living at the Soldiers' Home, Togus, Me. The trial alone, at 83, banishes all his pain and kidney and bladder disease from which he had suffered since the war. G. G. Rector, of Marshall, N. C., was all crippled from rheumatism, and a test of the treatment not only cured his rheumatism, but made him stronger by thirty pounds. Mrs. Albert Stegemann, of Whitney, Ont., Can., had not known a healthy day in years until she took this discovery and was permanently cured in two weeks. The same can he said of Mrs. Henry Bloom, of Gatesburg, Pa., and Mrs. Cynthia I. Osborn, of Sweetwater, Mo., who was cured at 73. Mr. Henry Matsinger, 1624 N. Snydenham Street, Philadelphia, though a life-long sufferer, needed only the trial to cure him of urinary trouble. The cures of Mrs. W. J. Kelly, of Loda, Ill., Mr. William Hollister, of Halsey Valley, N. Y., and numerous others are too well known to need retelling. If you would like to try such a treatment without cost, it is easily done by sending your name and address to the Turnock Medical Co., 2483 Bush Temple, Chicago, Ill. It puts you under no obligation whatever, so do not hesitate to write at once and it will not be long before you are happily cured.

FRISCO SYSTEM

FRISCO SYSTEM

Chicago & Eastern Illinois R. R.

Double Daily Trains BETWEEN St. Louis & Chicago

MORNING AND EVENING

From LaSalle Street Station, Chicago.....9:50 a. m.—9:10 p. m.

From Union Sta. (Merchants Bridge) St. Louis, 9:30 a. m.—9:46 p. m.

Morning or evening connection at both termini with lines diverging.
Equipment entirely new and modern throughout.
A DOUBLE-TRACK RAILWAY.
Equipped with practical and approved safety appliances.
Substantially constructed.

RUPTURE

YOU PAY NOTHING UNTIL CURED.

A permanent, quick and lasting cure guaranteed. No cutting, no pain and no detention from business. Consultation and examination free. Call or send for free book, which tells all about rupture or hernia, with testimonials.

Dr. Ernest Henderson, 103 W. 9th St., Kansas City. Mo. *N. B.—I am also an expert truss fitter.*

PILES

NO MONEY TILL CURED. 27 YEARS ESTABLISHED

We send FREE and postpaid a 232-page treatise on Piles, Fistula and Diseases of the Rectum; also 108-page illus. treatise on Diseases of Women. Of the thousands cured by our mild method, none paid a cent till cured—we furnish their names on application.

DRS. THORNTON & MINOR, 1003 Oak St., Kansas City, Mo. and 3969 Olive Street, St. Louis, Mo.

Ruptured

Send for our RADICAL CURE **TRUSS** *On Free Trial*

"THE ONLY PERFECT TRUSS." Totally unlike anything made. You Pay When Satisfied. WE TAKE ALL RISK.

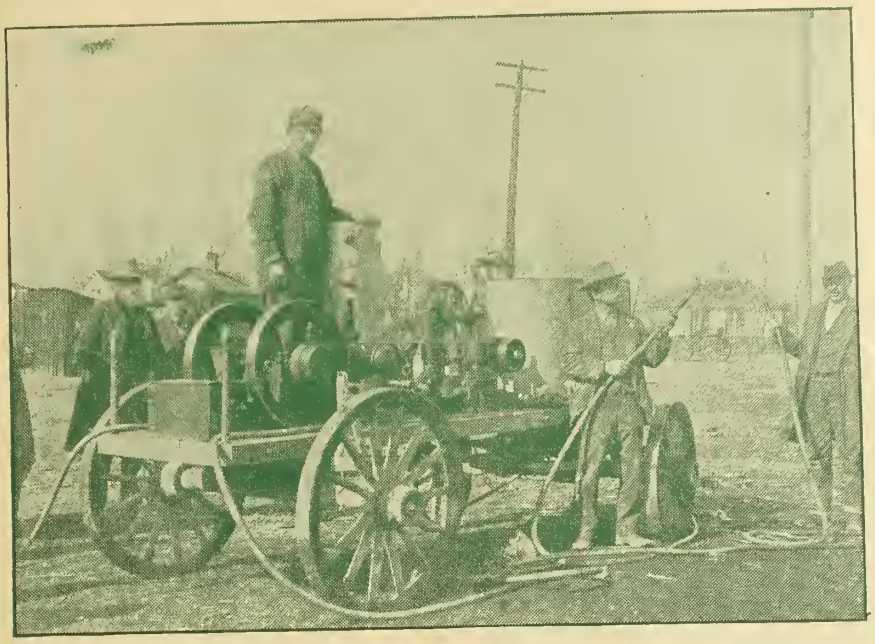
P. BUCHSTEIN CO., 608 R 1st Ave. S., Minneapolis.

Big Presents Free.

On page 38 of this issue our readers are given an opportunity to earn some most valuable prizes. The complete list of prizes offered by Successful Farming includes among other things six pianos, fifteen incubators, half dozen guaranteed 17 jewel gold watches, buggy, harness, elegant bed room furniture, complete set of parlor furniture, besides many other valuable articles and a large list of cash prizes.

Successful Farming is a most handsome agricultural paper and is as instructive as it is handsome. The publishers are perfectly responsible and our readers may depend upon their offer being carried out to the letter. We would like to see our readers win a large number of these prizes and they can if they count and plan better than others. Look up the offer on page 38 and send in your counts at once. This is really an opportunity you should not fail to take advantage of.

A Saving of $15.00 Per Day



To the up-to-date Fruit-Grower, it's not necessary to define the advantages of spraying. It's only a question of

How to Spray in the Most Economical and Effective Manner

He must admit the defects of all hand power systems; then it's

Power Spraying

That must be given his attention. **Reliable, Economical and Steady Power** that will maintain a constant high pressure. This can be obtained with any good spray pump

If the Weber Jr. is Used

HIGHEST AWARD ST. LOUIS WORLD'S FAIR 1904

Grand Junction, Colo.

Gentlemen:—We have purchased five of your 2½ H. P. engines this season and have attached three of them to the Deane Pump for spraying fruit orchards. The other two have been attached to the Myer Bros. new power pump.

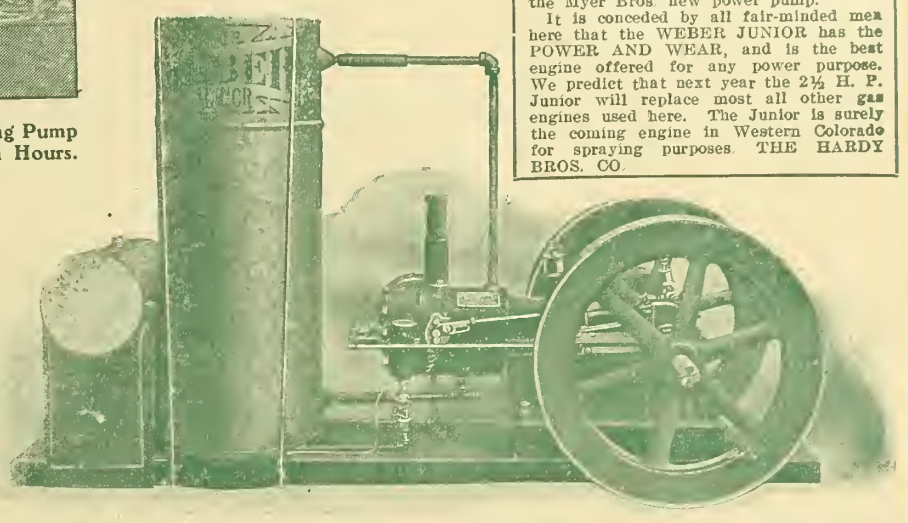
It is conceded by all fair-minded men here that the WEBER JUNIOR has the POWER AND WEAR, and is the best engine offered for any power purpose. We predict that next year the 2½ H. P. Junior will replace most all other gas engines used here. The Junior is surely the coming engine in Western Colorado for spraying purposes. THE HARDY BROS. CO.

The Weber Jr. 2½ Horse Power—Operating Power, Spraying Pump Two Gallons of Gasoline Operates it Ten Hours.

Only necessary to set on your trucks or farm wagon, fasten securely, belt to sprayer and you are ready for business.

Saves the time of one man. A good investment for the small fruit-grower, as he can secure a good revenue spraying for others in his vicinity. Another advantage. The engine is not on the toy order and after the season is over it can be used for general power purposes; operating the wood-saw, cream separator, churn, feed grinder, feed cutter, etc.

OTHER SIZES UP TO 300 H. P.
DESIGNERS AND MANUFACTURERS OF WEBER SUCTION GAS PRODUCERS.



WEBER JR. 2½ H. P.—Just as it appears when taken from the shipping crate mounted on a single base, adjusted, ready for use. Weight, 600 lbs.

Weber Gas & Gasoline Engine Co.

Box 340 KANSAS CITY, MO. U. S. A.

Dixon's Superior

Strawberry Plants

ARE IN FINE SHAPE

We have begun to fill orders and we find that our plants are in first-class condition. Our trade is much larger than last season and our old customers are coming back with larger orders, which proves that our plants are second to none. If you have not tried our plants get your order in now. Our prices are right and we will treat you right.

While we have a large number of orders booked, we have a large supply of strawberry plants and feel sure that we can fill all orders to the end of the season.

24° BELOW ZERO

And the **Cardinal Raspberry** canes are in good condition, also the **Mercereau Blackberry**. Even the Snyder Blackberry, the hardiest of all, was damaged a little.

Our supply of all small fruit is large but to be safe, get your order in now. Promptness in filling orders, first-class plants true to name is our motto. Our Catalog deals in facts only and we appeal to your common sense. Write for our COMMON SENSE Catalog at once.

Address

F. W. DIXON, HOLTON, KAS.

Attention—Nurserymen

"Preparation is Half the Battle"

PLENTY of ammunition at critical times has won a good many battles. The ammunition of the nurseryman is nicely printed stationery, a neat, attractive Catalog or price list, and advertising matter of all kinds. We are in a position to furnish you the sinews of war at prices that will command your attention. Have your Catalog copy prepared early and your printing done before the opening of next season and you will be ready to secure the first orders. We will have a proposition to offer you in a short time, regarding special cover designs that will interest you. Write us for estimates on printing of all kinds. Do not hesitate to ask us for suggestions or information. Sample Catalogs sent on application. Address

PRINTING DEPARTMENT

The FRUIT-GROWER COMPANY
ST. JOSEPH, MISSOURI

STARK TREES BEAR FRUIT

A Record of 80 Years

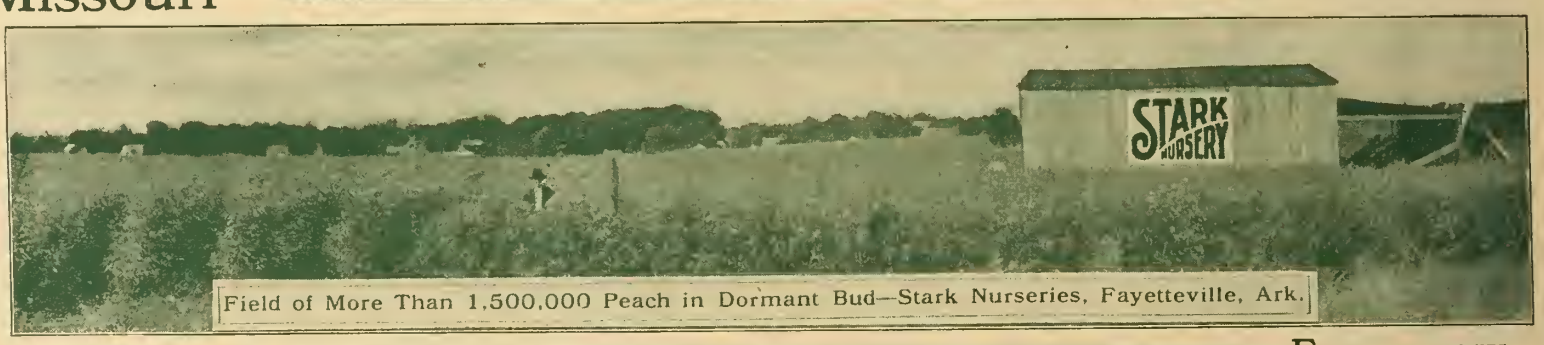
Is Behind the Reputation of

STARK BRO'S NURSERIES & ORCHARDS CO

Capital Stock $1,000,000--Paid Up

General Offices, Nurseries, Packing and Storage Houses, Louisiana Missouri

Branch Nurseries:
Starkdale Missouri,
Fayetteville Arkansas,
Portland New York,
Dansville New York,
Atlantic Iowa,
Rockport Illinois



Field of More Than 1,500,000 Peach in Dormant Bud—Stark Nurseries, Fayetteville, Ark.

STARK STORAGE HOUSES, with a capacity of 1,938,700 cubic feet (1,000 car loads), were filled last Dec. to their utmost capacity. Every tree and plant reserved for our spring '05 trade was fall dug and stored.

Customers are guaranteed stock free from "Black-heart," frosted roots and all other forms of winter injury

From a very small beginning in 1825, the Stark Nurseries have steadily grown and expanded until now they are the LARGEST IN THE WORLD. This success has been attained solely by giving customers their MONEY'S WORTH—splendidly rooted, well grown trees of the BEST sorts, TRUE to NAME and at lowest possible prices

STARK FRUIT BOOK "WORLD'S FAIR FRUITS" shows in natural colors and accurately describes 216 varieties of fruit. Send 50 cts. and we will send the book, postpaid, and a REBATE TICKET permitting its return within 60 days when the 50 cts. will be refunded. Or the Rebate Ticket is good for $1 part payment on a $12 order for trees

WE PAY FREIGHT on Orders of $12 and up, Box and Pack FREE

WE PAY CASH Weekly and Want MORE Home and Traveling Salesmen

Volume Fifteen APRIL, 1905 Number Four

THE WESTERN FRUIT-GROWER

ST. JOSEPH, MISSOURI

"Dro. Jonathan"—Trade Mark

Small Fruits Number

Copyright, 1906
By The Fruit-Grower Company
St. Joseph, Mo.

Fruit Carriers by the Car Load

Quart Strawberry Baskets
8-lb. Climax Grape Baskets
5-lb. Climax Grape Baskets
4-qt. Peach Baskets
3-qt. Peach Baskets

THE MERGENTHALER-HORTON BASKET COMPANY announces its goods to large dealers and manufacturers. Favorable rates are quoted on application by mail or otherwise at the factory, Paducah, Kentucky. This factory is now turning out nearly a million baskets each week, and during the month of April is doubling its productive capacity. Orders are booked ahead for several months and early inquiry should be made by those whose needs for 1905 are not fully provided for.

Manufacturers of Grape Baskets who are in a better position to supply covers and handles than basket bodies, can make arrangements which will enable them to handle their trade with greater care and efficiency. The basket bodies produced by the Mergenthaler-Horton Basket Company are made on the celebrated *Horton Machines* and are of excellent workmanship and uniformity. This is a class of business specially invited by the Company, and good prices will be quoted.

Dealers in all kinds of Fruit Carriers, by establishing relations with the Paducah factory, will be in touch with the *largest source of supply in the world.*

ADDRESS INQUIRIES TO

Mergenthaler-Horton Basket Company

Paducah *Kentucky*

Government Lands FOR Settlement

Irrigable Big Horn Basin Lands Going Rapidly

Copyright, 1905, by J. W. Gregory.

The Homeseekers' Excursion, on March 7th, which I accompanied into Big Horn Basin, was a significant illustration of the "land hunger" that pervades the people of this country. There were two sections of the train, on the main line, twelve coaches each, every coach crowded. Some two hundred went down the Cody branch into the Big Horn Basin, swamping hotel and livery accommodations for the time being. By having made arrangements in advance, we fared well compared with some. One party of 24 loaded onto a hayrack on a farm wagon, drawn by four balky bronchos, started for a 55-mile drive into the "Land of Promise." They were in our sight at intervals the first half day, most of them footing it cheerily in order to get on at all.

ALL WANTED LAND.

Our party was made up from widely scattered localities and was, perhaps, more than ordinarily critical. Yet it is significant that **every one of my clients in the party located the quantity of land he had set out to take, and a majority took up tracts for neighbors.** This fact says more than could be said in many words and is strongly emphasized by the fact that we were all much discommoded by inadequate hotel accommodations and by traveling the whole time through the worst weather of the whole winter—experiences tending to give a tourist the most unfavorable impressions of the country.

ABSENCE NO DISADVANTAGE.

I had many more applications and location fees, for people who will go out later to see the land, than I had persons present to choose for themselves. And those who were absent suffered no disadvantage by their absence; for while **all got absolutely first-class land—none finer anywhere**—I located some persons absent ahead of some present, adhering to the rule to make locations in the order of the receipt of the location fee.

VIEWS MODIFIED.

I find that while it is true that the mercury does not often go below zero and does not stay long, it went as low as 34 for a few hours last winter and has gone lower. This fact, along with the scant time for experimenting so far, owing to the newness of the country, raises a question as to it being a peach country, etc. All the residents with whom I talked state that the coldest weather is of so short duration and the atmosphere so dry that trees never have been killed or injured and a letter just received by The Fruit-Grower from an old resident of the Basin, states that he has grown all sorts of fruits, peaches and all sorts of berries included.

PLENTY OF GOOD SAFE CROPS.

There are, at times, late and early frosts sufficient to shorten the corn season. Good crops of corn have been regularly grown, however, and the crops of alfalfa, wheat, oats, barley, potatoes, and a vast assortment more, far more than answer for any deficiency in corn. Heavy yields of sugar beets are produced, carrying 17 to 22 per cent of sugar and preparations are under way for the installation of beet sugar factories.

There are two or three roller mills in the Basin. Wheat is also being shipped out at a profit and the local demand for oats and barley is ahead of the supply; and this demand should be largely strengthened by the extensive railroad and canal work now beginning.

It is certain that two lines of railroad will be built into and through the Basin in the immediate future—the Burlington and Northwestern extensions. A third line is considered certain.

The distance to Government lands and to sawmills from most of the Basin is such that lumber sells at $24 to $35 per thousand. While some are convenient to fence post timber, most who undertake to cut and haul for themselves must take three to five days for a trip. Coal sells for $4 to $5 a ton, also at most pitmouths instead of $1.50, as I had been informed. Not a great deal of coal is required, however, as shown by the fact that more or less plowing has been going on since early in February.

CHEAP IMPROVED LANDS.

A few settlers who early located on lands on small and cheaply constructed ditches, which are now a part of large and vastly more expensive, and as much more reliable systems, now find themselves in possession of improved land that they can sell at a little above the price of unimproved land, and make a good profit. Not realizing the immense and rapid increase now beginning to be felt in values, some of these land-holders have sold their holdings at such prices. I have taken steps to list such properties, for the benefit of those of my clients who may desire anything of the kind. The improvements, as a rule, consist of adobe buildings, trees planted, good wire fencing, the land under ditch and mostly under cultivation and largely in alfalfa, ready for immediate and profitable cropping. Payments on such properties will, in most cases, necessarily be largely on a cash basis. For such as would prefer land of this sort, I will try to secure what is wanted. Such tracts will double in selling value within the year and every such tract which passes into strong hands hastens such increase in value, for those cheap tracts are few—and, in fact, such settlers themselves are beginning to realize the advance in values and are rapidly increasing their selling prices.

GOING RAPIDLY.

It develops that scarcely a third as much land remains available as we had counted on, so eager has been the demand for land. So closely have locations crowded the surveys that we may be compelled to file applications in the order of the receipt of location fees and locate them in the order of receipt, as fast as suitable land is staked. Surveying forces are to be increased, but it is doubtful whether the increase can keep much ahead of the constantly growing demand.

STILL GOOD LAND.

We have exclusive right to locate applicants upon a considerable tract of these lands, of the very best; hence can take care of all those whose applications come in anyway soon. Although much preferring that every person should first see the land and choose for himself, the rush is such that until hotel and team accommodations can be improved it may be uncomfortable trying to get over the ground. The $15 rate for round trip has been extended to the 4th and 18th of April, and there is hope that further extensions will take place until all who desire may see the land.

FIRST MAN WHO MEANS BUSINESS.

In all cases, the man who has paid his location fee will have preference in transportation as well as location. Whoever has paid his fees means business. He is looking for land and, if not suited, gets his money back, hence loses nothing. If he has paid no location fee, he may be looking for a place to start a grocery, or blacksmith shop, for all we know, or may be a sightseer, or visiting on the cheap rates. Room is at a premium on excursion days now. We will arrange for all we can accommodate on each excursion, until all who wish to go can be accommodated.

By parties of 25 to 30 taking Tourist Pullman accommodations for the round trip ($8.50 St. Joseph to Cody and return, good for 4 days in the Basin) we could arrange for large parties, because the Pullman car becomes home and hotel of the passenger from starting until return. It is sidetracked at destination and each has his sleeping apartment awaiting him every night of his stay, thus practically saving its cost in hotel bills, beside insuring each plenty of room and best accommodations no matter how crowded the rest of the train. Those desiring to go on any excursion and wishing Pullman accommodations should send me the fare, so berths can be reserved, as such coaches have to be fully paid for in advance.

Make up parties and send one of the number to see the land. Prompt action is advisable. I will mail printed matter to any address you furnish.

J. W. GREGORY,
Locator for Big Horn Colonization Co.,
St. Joseph, Mo.

40 Acres of good irrigable land equal 160 acres first-class non-irrigated.

160 Acres good irrigable land equal a square mile of first-class non-irrigated.

Any and every acre of good land, with perpetual water-right, is worth $100 at least, each.

The average value of such land is now $300 per acre, and steadily increasing.

The Irrigable Public Lands described in this article will rank above the average.

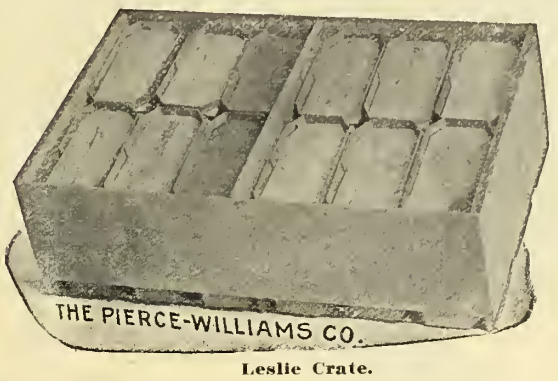
YOU have a chance to get 40, 80, 120 or 160 acres at $30.50 in full for land and water-right and on easy payments. A payment of 50 cents per acre will get you contract for such a tract. Plenty of time to arrange further payments.

When these irrigable tracts are disposed of no such opportunities can ever again be offered, because the land does not exist. Land is growing scarcer and more valuable every year. Prices will increase more rapidly from now on, because public lands are practically exhausted. The only mistake one can make about this land is not to locate a piece of it, if he has the 50 cents per acre location fee.

Fruit Packages

We make all kinds of Boxes and Crates for berries and other small fruits

4-Basket Peach or Tomato Crate.



Leslie Crate.

Also Climax Baskets. Bushel Stabe Baskets and other styles of Fruit Packages

Special Prices on Carloads

The highest quality and the lowest prices. We make prompt shipment. Large catalogue free. Send for it.

The Pierce-Williams Co.

South Haven, Mich. Jonesboro, Ark.

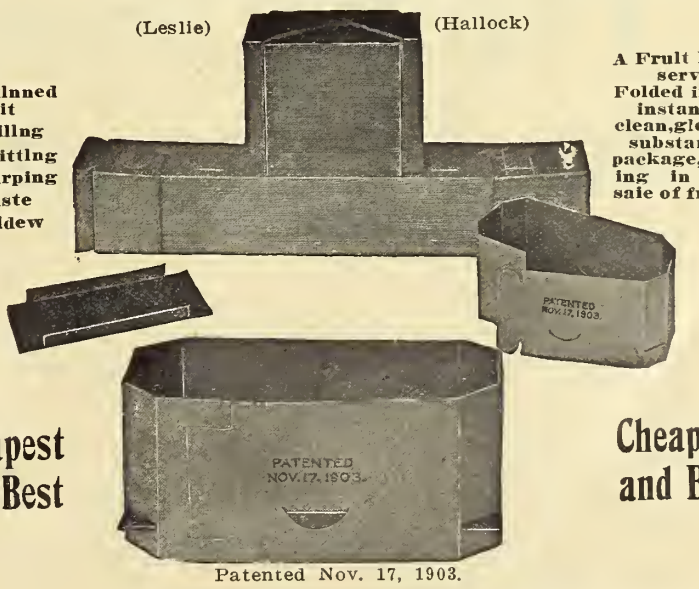
NATIONAL BERRY BOX

OBLONG OR SQUARE STYLE

(Leslie) (Hallock)

No Skinned Fruit
No Nailing
No Splitting
No Warping
No Waste
No Mildew

A Fruit Preserver—Folded in an instant—a clean, glossy, substantial package, aiding in the sale of fruits



Cheapest and Best **Cheapest and Best**

Patented Nov. 17, 1903.

THE IDEAL IN REALITY

Made of tough folding paper stock coated with parafine wax on both sides, is water and juice proof. Will not mildew in any atmosphere or climate. The paper stock used is always smooth, therefore will not break the tender skin of the berries, (so often in wooden boxes), causing prenature decay of fruit, (hence a fruit preserver). To lose one crate of berries, will cost nearly as much as one thousand good cups. So consider, buy the best, the only cup and the coming one. Known, within one year's existence all over the Union, and universally admired. No Trust. Boxes always to be had at right prices. No excuse to have fruit spoil in fields, if cups ordered in time.

Price, $3.00 per 1,000 in carload lots, f. o. b. Kansas City.

Order early to avoid rush and possible disappointments. Address

NATIONAL PAPER BOX CO.

KANSAS CITY, MISSOURI

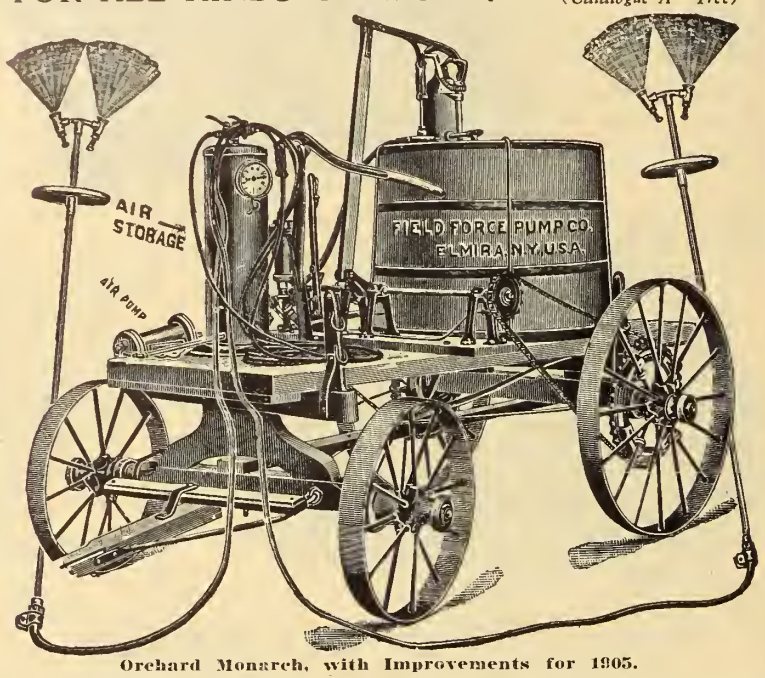
Leaders in Printing, Paper Folding and Made-up Boxes.

SPRAY PUMPS

With All Brass Working Parts

Mechanical Agitators that *agitate* and
Automatic Brushes for keeping *suction strainer clean*

PUMPS AND APPLIANCES OF ALL KINDS FOR ALL KINDS OF WORK. (*Send for Illustrated Catalogue "A"—Free*)



Orchard Monarch, with Improvements for 1905.

The Orchard Monarch is the most powerful sprayer made. Tank of large size (150 gallon capacity); mixture is vigorously agitated; power is furnished by sprocket wheel on wheel of wagon, with special air chamber, which will hold enough air to spray a tree after the wagon stops. It will pay large orchardists to investigate.

Tell us the size and age of your orchard and we will recommend style of pump best suited to your needs. Better send in your order now, before the rush.

WRITE FOR CATALOGUE "A" AND NAME OF NEAREST AGENT.

Field Force Pump Co., Elmira, N. Y.

JOHN DEERE PLOW COMPANY
KANSAS CITY, MO., GENERAL WESTERN AGENTS.

Specimen plants characteristic of uninoculated and inoculated field of Alfalfa, on farm near Bynum, Harford County, Maryland. The uninoculated plants turning yellow, though sown on ground richer and better than the inoculated field. Gain from inoculation with Nitro-Culture nearly 500 per cent by weight.

Bacteria

AND

Fruit Trees

It has been demonstrated by experiment that if Clover, Alfalfa, Beans, Peas, or any other leguminous crop has been inoculated with **Nitro-Culture Bacteria** and planted under fruit trees, that the nitrogen (gathered from the air by the Bacteria) will finally be carried to the roots of the trees, providing them with an abundant supply of nitrogen (the most expensive of all fertilizers).

Nitro-Culture

Also keeps the soil in good condition and free from weeds. This means of increasing the growth and productiveness of young trees is highly recommended by the

U. S. Department of Agriculture

Save expensive nitrogenous fertilizers and write for free Booklet to

Inoculated clover on the right, uninoculatel on the left, grown in the same plot, from the same seed. (Taken from a Photograph.)

National Nitro-Culture Co.

West Chester, Pa.

Excursion of Fruit Growers to Texas in June

The big annual event—a trip through the wonderful fruit and truck district of East Texas in June. An opportunity to study conditions at the height of the harvest and shipping season—the right time to ***see results.*** Picking, packing and shipping peaches, plums, tomatoes, potatoes, etc. The whole process from the tree and vine to the refrigerator car. A week of sightseeing and study of the great orchards and truck farms of East Texas.

Extremely low rate for round-trip by special train from St. Louis, The big growers, officers of State horticultural societies, experiment station experts, editors of farm and fruit papers in the North will be in the party.

This is your chance to see the East Texas fruit and truck country under most favorable auspices and be in good company.

Write for copy of East Texas fruit booklet, itinerary and cost of trip, and full particulars, or fill out and mail coupon below.

E. W. LaBEAUME

General Passenger and Ticket Agent of Cotton Belt Route

St. Louis, Mo.

E. W. LaBEAUME, G. P. & T. A.
St. Louis, Mo.

DEAR SIR:
Please mail me a copy of your FRUIT BOOKLET. I am interested in the East Texas country. Myself and.....others might be induced to join your June excursion.

My Name .....

My Town .....

County ..... State .....

FILL OUT, CUT OUT AND MAIL THIS COUPON TODAY

The Western Fruit-Grower

An Illustrated Monthly Magazine For Progressive American Farmers.

Volume Sixteen | ST. JOSEPH, MISSOURI, APRIL, 1905. | Number Four

Growing Raspberries in Minnesota

By B. T. Hoyt, Superintendent Hoyt Plant & Seed Company, St. Paul, Minnesota

Raspberries can be successfully grown in any part of Minnesota and should be planted in every family garden. There are tender and hardy varieties, like many other plants, so that a knowledge of the best and hardiest varieties for the north is very essential. A variety that would thrive in Iowa might fall in Minnesota; hence it is best to find which varieties are doing the best in one's immediate vicinity before ordering plants, and get plants from as far north as possible if for Minnesota planting. This same principle applies to nearly all our fruits, trees, etc.

Varieties.

We have tested nearly all the leading varieties and have found the Loudon red raspberries to take the lead in both hardiness and productiveness, with the Marlborough second. These are both good varieties, being good shippers and market varieties, but we prefer the Loudon as a table berry, also as a canner, and they also ship well and make a fine appearance in the box, as they have such a beautiful dark red color which does not fade when canned.

Preparation of Soil and Planting.

Raspberries are good feeders, requiring a liberal amount of plant food, responding readily to good treatment, so that if soil is not naturally in a good state of fertility, rotted barnyard dressing or other fertilizer can be applied and the ground deeply plowed and thoroughly cultivated or broken up with a harrow or clod smasher. In a small way the ground should be thoroughly spaded up, working in dressing, when you are ready to set plants.

Setting Plants.

In setting raspberry plants keep the roots moist. Some plow furrows with a two-horse plow and set plants in the furrow, while others use a line and a spade, opening holes where the plants are to go, and in any case care must be taken not to break off the small white shoots coming up from the crown or roots, as these are to be your future plants. Do not set plants too deeply, as these small white shoots will not have a chance to get to the surface, and care must be taken not to tramp the soil hard just above the crown, but more from the sides and a little distance away from the plant. The new shoots can then have a much better chance to come to the "top." We always use young plants from new propagating beds, the same as in setting strawberries, because older bushes from fruiting beds are not desirable, being in many cases exhausted to such an extent as to render them unprofitable. Here is where a great many fail, as they will go to a neighbor and dig up plants from some old run-out fruiting bed, instead of getting strong, thrifty young plants which are not exhausted.

PACKING HEADQUARTERS, HOYT PLANT & SEED CO.

There are many systems of planting, but will suggest a few, and any one can select which is the most fitting. One way is to plant bushes five feet apart each way, if to be cultivated with a horse both ways, allowing about five shoots to grow from each hill. On a large scale we set plants in rows six to seven feet apart north and south, and from three to four feet apart in the row. We plant potatoes every other row, north and south, the first year, and after that the whole space is given to the bushes. In a small garden way the plants can be set in narrower rows and plants about a foot apart in the row where the work is done by hand, but would recommend that rows be not nearer than four feet, and the farther the better. Four or five of the thriftiest canes are enough to allow to grow and mature each year. The fruit is borne on the two-year-old wood.

FIELD OF LOUDON RASPBERRIES.

Cultivation.

Cultivation is very important to secure the best results, although many people plant raspberries and let them go, expecting them to bear just the same. One can usually tell a successful grower by simply driving by the patch, and especially during the picking season, as the careless man will have one thick mass of canes, and weeds, while the successful grower will have straight rows well cultivated and free from weeds, with plants not too thick in the row.

Picking, Marketing and Canning.

The picking season is the most critical time in the whole, and especially if on a large scale. No matter how large a patch of raspberries or how well they have been cared for, if there is no system used in the picking, crating and marketing there is a big chance for a loss. One has to figure on the market demands, style of packages, whether quarts or pints, etc. We use pints for raspberries in St. Paul and Minneapolis exclusively, while many other growers bring their berries in quarts, and with what results? Every one knows that a full quart of raspberries jolted over a road for five or ten miles after being picked will not represent much more than a pint when it reaches market, as there is too much weight and the bottom berries are often crushed so the juice will run out. Not so with the pints, for there is only one-half of the weight and the berries are not crushed as in quarts. A great many figure there is a saving in expense by using quarts, as the expense is only about one-half as great, but our Loudon raspberries have usually retailed for from 12c to 15c per pint, while other red raspberries were bringing from 8c to 12½c per quart in the same stores, but of course they were not the quality of the Loudon, and did not have a "wax label." If people demand pints put your berries in pints every time.

Now that you have decided on the boxes, the next question arises, how many and when are you going to get them or make them up?

My advice is, if your crop is promising and you have enough to warrant getting many boxes, to get them as early as possible and work at them at odd times or rainy days, as at the last minute every one is rushed and you will find a few thousand boxes very acceptable. We use box machines which sew them with a wire staple and find them very satisfactory and much more so than nailing them by hand; also considerably faster. A good hand can make several thousand boxes a day, and they hold much better than when nailed with tacks.

Picking of berries is extremely im-

Has Your Subscription Expired?

The subscriptions of a large number of our readers have expired, and letters to this effect have been mailed to all delinquents. We know that it is an easy matter to overlook small items of this kind, but we hope that every subscriber will realize that to us, these small sums run into a very large figure and assist us by renewing promptly.

It required about eleven tons—22,000 pounds—of white paper for the March number of The Fruit-Grower, and the editions during the past three months have been almost as heavy. This, however, is only a small part of the cost in publishing the paper, and the heavy expense at this season makes it necessary to ask all our friends to assist us by remitting at once.

The Fruit-Grower is sent to all subscribers until ordered stopped and all arrearages paid, unless we are notified not to do so, and if you do not write us we take it that you want the paper continued.

We recognize the fact that it is sometimes inconvenient to send even the small sum due us and if you are not prepared to remit now, and want the paper continued, **write us**, before May 1st and we shall be glad to advance you three years, charge you $1.00 and allow as much time as you like to pay up. This will enable us to take your name from our delinquent list.

Please remember that in handling a list of 40,000 names mistakes are likely to happen, and as we are human, we do make errors. If you find we are in error in your case, **don't get mad** about it, but write us a postal and the matter will be adjusted to **your satisfaction.** Your word is all we want. We **guarantee a square deal to all.**

Many of our readers say that a single issue is worth a year's subscription. Are not twelve numbers worth 50c to you?

OUR

Blocks of Five For $1 Offer

WILL BE WITHDRAWN

May 1, 1905

Any reader of The Fruit-Grower may send in his renewal and the names of four **new** subscribers, for a year, for $1.00, if remittance reaches us by **May 1st.** Speak to your friends and neighbors about this and see if you cannot add a few new members to "The Fruit-Grower Family." This will be the **last chance** to secure a dollar paper for 20 cents.

OUR

Three Years For $1 Rate

WILL BE WITHDRAWN

May 1, 1905

Every reader of The Fruit-Grower, even if now paid in advance, will be allowed to take advantage of our three years for $1.00 rate, if remittance reaches us by **May 1st.** After that time 50 cents a year straight will be charged. Next year The Fruit-Grower will be greatly improved and the price advanced to **$1.00** a year, so an investment of that sum now will pay you good interest.

If your subscription is not in arrears, according to your date tag, please ignore this notice. If the date tag on the wrapper in which this paper is mailed reads "April '05," or an earlier date, we hope to hear from you promptly. We wish all our friends good crops and prosperity for 1905.

THE FRUIT-GROWER CO., ST. JOSEPH, MO.

portant. We have our pickers sign a contract, so that they know what to expect if they do not live up to the rules. Each picker is numbered and each row is numbered, so that when a picker is given a row he or she is held responsible for same, so there is not putting it "onto some one else." Then, too, every picker numbers every box he uses with his or her number, so that it is easy to find any crooked work. After a picker has been docked a few times he usually takes the hint or is discharged and a new one taken, as good pickers are as important a part of the work as anything else. We pay more to pickers who are regular than to those who just come for a little "outing," and they are more deserving. A good picker is one that is always on deck and does not get the backache about 9 a. m.

System of Picking.

Of course every one has a different system of picking, but simply mention ours, which may be applied in some cases or part of it at least in handling pickers. We have over one hundred pickers, besides our regular help on our largest days, but find no difficulty whatever in handling them. They know they will be caught if they do not do good work. Every picker uses a six-pint carrier, and is supplied with a card from which numbers are punched, to keep record of work done.

Label Your Berries.

We label all of our "No. 1" berries with wax paper labels, which are almost transparent, and these set the berries off like a necktie on a person, and further let people know whose brand of berries they are buying, and if they are every one perfect, they are very apt to try that brand again, and if they are not, they are through, perhaps forever, so any one can see it is up to the man who labels his berries to see that they are right.

Canning Raspberries.

We can our second grade berries, or what we call No. 2's, as they are just a little off by either being too small, too soft or too crumbled to be put in the "firsts." Remember, these No. 2 berries are not bad, but are very good indeed, and we put them up fresh as picked, thus there is no waste. No one sees anything but the No. 1 fresh berries, and we simply cannot supply the leading leading trade. It is the No. 2 class of berries which a great many growers are "succeeding" in growing, and they never fail to get the No. 2 price either. Then, it may be asked, what about the canned berries? Well, they are pronounced A No. 1 by every one who has tried them, and they have won in nearly every leading store in the Twin Cities and sell by the crate of twelve quart bottles at $7.80 per crate; and at 45c per pint and 65c to 75c per quart in most of the leading stores. Does that pay? Just try it and see. It is the poor fruit which gluts a market every time, so do not let any one see any but your "very best." Our Loudon red raspberries we consider the finest canner on the market, and they are just a perfect color and keep it after being canned, without any coloring, which a great many jars of canned goods contain. In fact, there was considerable of the cheaper grades of canned goods on the market that was either doped up or colored, and the inspectors are after them hard. There is always a demand for clean, fresh canned goods, and there always will be. Canning berries will also prevent gluts on the market, as there is no use throwing several hundred crates on a market that is already supplied, as it would demoralize the price of all the berries. There is a fruit growers' association in Minnesota that ships thousands of bushels of fruit annually, and they are also figuring on putting in a canning plant which will be used in case of gluts on the market, no doubt, or for inferior fruit.

Renewing Fruiting Beds.

After the fruit is picked the old canes are all cut out close to the ground with a regular steel hook on a three-foot handle, also weeds or grass, and the patch kept cultivated. Sometimes we sow down the space between the rows with oats after the picking, if the season is wet, and cultivate seed in. The oats takes up a large amount of the surplus moisture and plant food and the canes are ripened up in fine shape. This, however, is not necessary in a dry fall, as the canes usually ripen up much better then. The oats only grow about eight to twelve inches high when the frost stops them, and they also act as a fine mulch for winter and add humus to the soil, as it can all be cultivated in the following spring and nothing is lost. We sow the oats quite thickly, or three bushels or more per acre.

FANCY LONDON RASPBERRIES.

Covering.

Some varieties of respberries need winter covering in Minnesota, but we never have covered our Loudons and have never had a failure yet. Where raspberries are laid down by hand the canes are bent to the north, one man holding the tips down while another covers or throws on some soil. They work southward until the rows are all laid, when they are covered still more by back-furrowing with a plow.

There is a new machine for covering strawberries, which consists of right and left-hand plow, and works fine. In the spring plants are uncovered by using a six-tined fork and raising the bushes. Grow varieties for the north that do not need covering and save one-half the expense.

Advertising Columns Helped Him.

S. A. Stone, Chillicothe, Mo., recently subscribed for The Fruit-Grower, and now writes that he at once sat down and wrote to a lot of our advertisers, and from their catalogues he has received enough information to more than pay his subscription. He says he believes he has been able to save at least $50 on a lot of stuff which he will buy from our advertisers.

That's right. The advertising columns of any reputable publication are valuable parts of the magazines. Read The Fruit-Grower advertisements, and when you answer any of them, say you saw the advertisement in this publication. Will you do this, please?

Our 4-Gal. Sprayer at work in an Orchard.

Cut This Ad Out—Send Cash With Order and Save Delay

$5.00 SPRAYER FREE

To have you introduce Ripley's 4 and 5-gal. Compressed Air Sprayers in your localities, we want you to canvass for us. Write at once for our 100-page Sprayer Catalogue, as we want you to sell THREE ONLY of our 4 or 5-gal. Sprayers to your neighbors at prices below, and we will give FREE a $5.00 No. 15, 4-gal. Galvanized Sprayer, complete as shown in cut.

$1.50 OFFER EXPLAINED, $1.50

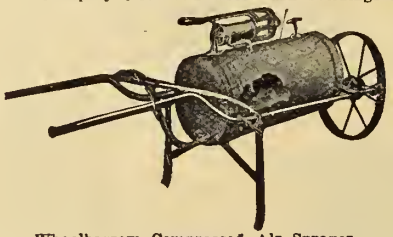
If you are not in a position to take advantage of our $5.00 Free offer, we will upon receipt of $1.50 in stamps, money or express order, ship by express, C. O. D., subject to your inspection at express office, one of our No. 15, 16, 17 or 18 Sprayers. When you find it as we represent, you pay agent balance, and if not as represented, we will forward another Sprayer free of charge.

DON'T EXPERIMENT—Buy the best Sprayers. They prove the cheapest in the end. We don't claim to manufacture the cheapest Sprayer on the market. We do claim and have demonstrated for the past five years that we manufacture the best.

OUR CHALLENGE—At any time we will enter a test, with any manufacturer of a similar price Compressed Air Sprayer, and prove that our Sprayer is more substantial.

WHAT IT IS GUARANTEED TO DO—To spray solution in the form of a mist, and to force a greater distance from the nozzle than any other 4 or 5-gallon Sprayer on the market.

To spray trees and whitewash buildings 25 feet high or more, by using extension poles to elevate spray.



Wheelbarrow Compressed Air Sprayer.

To spray more vegetables, bushes, trees and plants with less labor and with less solution, and to last longer than any other 4 or 5-gallon Compressed Air Sprayer on the market.

Our Improved 1905 4-Gal. Sprayer.

What It Is Used for—For spraying trees, almost any height, spraying flowers, potatoe vines, cotton, tobacco, and nursery stock. For spraying Lice Killer and Fly Remover on stock, and liquid disinfectants in vaults and army camps. For whitewashing poultry houses, barns, fences, etc.

Ripley's Combination Compressed Air Sprayer and Wheelbarrow.

Price complete as shown in cut, $20. With 8-ft. bamboo rod, $21.00.
Price complete less frame of Barrow, $16.00.
Add $1.00 to prices above and we pay freight.

Description: Compresser holds 15 gal. The heads are made of No. 12 steel, 13 in. diameter, 30 in. long; has brass cylinder pump; size cylinder, 3x12 in.; has safety valve; tested to 85 lbs. pressure; fitted with two leads of hose, and 2 single Vermorel nozzles; 20 in. steel wheel; frame hollow steel piping, very strong; will spray two rows of plants at a time or more if you wish. Weight 85 lbs. Will spray trees any height by using extension rods. Compresser can be removed and you can fit a bed to barrow, if you wish. We recommend this Sprayer as one of the best we manufacture. It is fitted with an Agitator.

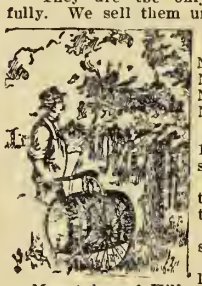
WHY THEY ARE THE BEST COMPRESSED AIR SPRAYERS—Are made of much heavier material and much stronger than any sprayer on the market. They have a safety valve and are tested to 60 lbs. pressure.

They will force a finer spray a greater distance than any other Sprayer.

They are made to strap to body, and a person can walk and spray at leisure by simply turning the pet cock off and on.

They have a better brass cylinder pump. The air being forced in at the bottom, thoroughly agitates the solution; and after air is pumped in according to directions, no more labor is required, excepting holding the nozzle. More air can be pumped in without taking Sprayer from body.

They are the only Compressed Air Sprayers that will whitewash buildings successfully. We sell them under a guarantee to be as represented, or make good our guarantee.



Mountain and Hill Sprayer—can be pulled by horse.

PRICE OF COMPRESSED AIR SPRAYERS.

No. 15. 4-gal. complete, galv. steel $5.00
No. 16. 4-gal. complete, heavy copper or brass 7.00
No. 17. 5-gal. complete, galv. steel 5.50
No. 18. 5-gal. complete, heavy copper or brass 8.00

If you wish us to pay express or freight to your city on No. 15, 16, 17 or 18 Sprayers, add $1.00 to above prices of each sprayer for any shipment in United States.

Extra hose, per foot, 8c. Nozzle, $1.25. Bamboo Rod, Copper Tube through center, to elevate spray in high trees, suitable to attach to these Sprayers, 4-ft., 75c; 5-ft., $1.00; 8-ft., $1.25; 10-ft., $1.50.

A COMPLETE FOUR-GALLON Sprayer includes two feet of hose, strap, and one Single Vermorel Nozzle, for making fine or coarse spray.

ECLIPSE ORCHARD SPRAYERS—We carry a full line of the best large orchard and field sprayers on the market; also Spray Mixture Cookers, Carts, etc.

PREPARED SPRAYING MIXTURES—Are highly indorsed and are cheap. By using them, and our Sprayers and following our Spray Calendar, telling when to spray and what to use you will meet with success. 100-page Catalogue mailed FREE.

RIPPLEY HARDWARE CO., Box 117 Grafton, Ill.

MANUFACTURERS OF SPRAYERS ANR PREPARED SPRAYING MIXTURES.

Turn Fruit into Gold

Orchards, sprayed three times a year with the

SPRAMOTOR

produce 80% more revenue than those alongside of them that have not been sprayed. The Spramotor is an Insurance Policy that meets its own payments. Absolutely prevents Insect and Fungi Pests.

The Canadian Government used two power Spramotors last year to demonstrate the benefits from Co-operative Spraying.

Write for booklet "A". It's free and gives full particulars about Fruit Spraying and its benefits,

SPRAMOTOR CO.

Agents wanted. **Buffalo, N.Y., London, Canada.**

"Absolutely Safe and Reliable—Ask Your Friends"

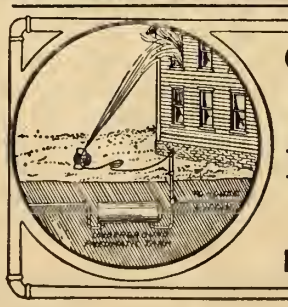
PROGRESSIVE FLORISTS AND NURSERYMEN EVERYWHERE ENDORSE

Caldwell Cypress Tanks *and* Caldwell Steel Towers

They know they can depend on having an ample supply of water at a uniform pressure. Careful construction by skilled mechanics and the best materials preclude all possibility of leaks or collapse.

You will be interested in our CATALOGUE and PRICE LIST.

W. E. CALDWELL CO., LOUISVILLE, KENTUCKY.



CITY WATER SUPPLY

FOR COUNTRY HOMES

Fire protection—throws stream 150 feet—and water in all parts of house, in stables and yards. No costly high tanks to blow over and disfigure landscape. The

Kewanee Pneumatic Tank

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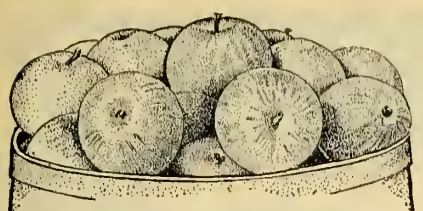

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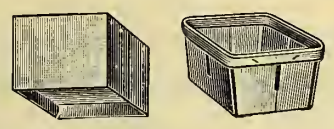

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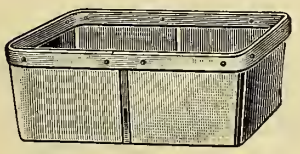

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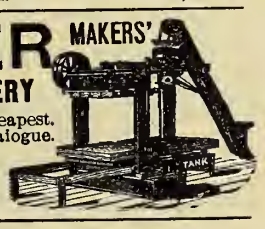

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Mulching Raspberries.

I will give my experience in raspberry culture, hoping it may be of benefit to the readers of The Fruit-Grower.

We grow the Climax raspberry almost exclusively, a new variety which originated on our farm about eight years ago, and has proved in every way to be a fine berry, the fruits having reached the large size of 1⅛ inches in diameter under ordinary treatment, an account of which I give here.

Our plants grow on a mixture of yellow and red clay soil, part of which is sandy, and brings the best yields. The ground was planted to potatoes, 2½ feet being given to each row; every alternate row being set in raspberries when the potatoes were planted. A fine growth was the result of good surface tillage. Top the canes the first year at 2 feet, increasing six inches in height each year. I have topped 6,000 canes in two hours with an ordinary pocket knife. Prune the lateral branches in the spring to spurs about four to six inches long, then you have a first-class fruit stalk for the coming season. The Climax berry treated in this way produces from 400 to 600 gallons per acre the first year, and 1,200 to 1,600 gallons the second year.

After the first year no cultivation is given, but mulch of any kind procurable is used; spreading it as soon as the berries are off and the old vines removed in July. This is repeated each year. The soil is poor, but we have applied only about 300 pounds per acre of ground bone, depending upon the mulch for the remaining needed fertility. Some of the advantages of the mulch are as follows:

It prevents the growth of weeds.

It retains moisture in the soil.

It adds humus, one of the necessary elements.

It keeps the fruit clean and prevents mud at picking time.

It saves labor, the cost of mulching an acre with forest leaves or straw not exceeding $15.

It prevents deep freezing.

It makes the fruit more solid than cultivation and better for shipping purposes.

It improves the texture of the soil and prevents baking of the soil caused by tramping at picking time.

It has the disadvantage of encouraging mice and establishing a surface root system. However, we have not noticed any serious damage from either of these effects.

The cost of growing raspberries by nature's method, as I like to call it, is not very great. Picking is a nice job where there is no mud, no weeds and where the canes have been prop erly pruned.

Don't leave any old canes standing in the field.

Don't fail to cut out and burn any canes infested by insects and diseases.

Don't fail to top the canes at the proper time; they grow very rapidly.

We don't stake our canes. They winter kill if we do.

Don't try to grow raspberries and other fruits together.

AUBREY G. ZINN.

Philippi, W. Va.

How I Grew Over One Gallon to the Hill of Blackcap Raspberries in 1904.

Soil, clay loam of medium fertility, well surface drained; variety, Cumberland; number of plants set, 50, of which number 47 survive; date of setting, May 2, 1901; distance apart of the rows, 6½ feet; in the row, 3 feet or 2,180 plants to the acre. Between the rows in 1901 we planted soy beans, which were cultivated in the ordinary way. New growth was pinched back at height of 18 inches. It was an unusually hot and dry summer, but all of the plants lived except three.

Spring of 1902 canes were pruned by cutting laterals to about 5 inches. Cultivated often but shallow, permitted no weeds to grow; pinched out terminal of new growth at height of 3 feet (higher than necessary). Had a good yield of large berries. About a dozen hills gave a pint to the hill. After berries were picked, cut out old canes and burned them. No indicationss of anthracnose or insects.

Spring of 1903 pruned, but left laterals longer than in 1902. Cultivated once as soon as ground was dry enough, then mulched heavily with rye straw. Again pinched back new canes at height of 30 inches. Yield 6 pints of nice berries per hill. Many were eaten by the birds. Noticed anthracnose on three hills, which were partially destroyed. After berries were all picked, cut out and burned old canes. Last week in October sprayed with Bordeaux mixture.

Spring of 1904 sprayed again with Bordeaux mixture, pruned as before—neither mulched or cultivated. The very few weeds that appeared were hand pulled. First berries ripe June 22, 6 quarts; last picking July 16, 9 quarts; last berries July 21; total yield of 15 pickings, June 22 to July 16, inclusive, 191 quarts, besides what our family, neighbors and birds ate, not less than 20 quarts. Rainfall, May 31 to July 21, ½ inch. Many of the fruit spurs were 30 inches in length, with berries at each axil and an enormously large cluster at terminus.

In conclusion, the essentials in raspberry growing are, viz: the man, the soil, the transportation, and the market, and of these the man is the corner stone.

LOWELL ROUDEBUSH.

Clermont Co., O. Lat. 39.

Growing Strawberries.

No other small fruit is so easily influenced by environment as the strawberry, hence no iron clad rule is applicable as to varieties on different soils in different latitudes for home or distant markets. Our preference is a clay loam soil of high fertility. Clay, because it will hold moisture; loam, because it is friable and easy to till. For general crop we like a level site, with good surface and underdrainage. For early berries, a southeastern exposure; for late, a northern. Would disc site as soon as ground could be worked in the spring and immediately plow, fine, firm and set the varieties best suited to your soil, climate and market, whether they all be perfect or both perfect and imperfect bloomers. Select healthy plants of the previous year's growth. They have light colored roots—two year-olds have dark. Trim roots to even length and pinch off dead leaves, stems and runners. Width of rows will depend on your plan of growing, whether by hill method, half matted or whole matted row. For commercial purposes we prefer rows four feet apart, furrowed shallow, with plants set eighteen to thirty inches in the row, according to variety. You can either set plants with a tobacco setter or by hand. If by hand, use a dibble or a long bladed spud of light weight. The operator knowing the distance apart in the row can push it into the soil and by a slight movement of the handle make an opening for the plant. The soil should be firmly pressed about the roots. If plants are set too deep the heart is covered and dies; if too shallow it dies from drying out. As soon as plants are set begin cultivation with any implement that will stir all the surface to a depth of about two inches, and repeat as often as a crust is formed, weeds appear and there is growth of the plants.

When blossoms appear the first year the fruit stems should be cut off or pinched out. The first runners should be allowed to grow—may not have any second. As a rule each parent plant should be permitted to set eight plants (which will make your rows about 18 inches in width), then which is the most important, the eight or the one? If on a steep hillside or where you cannot get wheat straw for mulching, sow oats between the rows about August 10 to 15. If ground is dry after killing frosts, mulch; if not, wait until first hard freeze. Put more straw between the rows than in them—just enough to hide the plants, and then it is not necessary to remove it the following spring.

Each individual has a different method of handling the berries. A few things must not be done: Picking when the berries are wet from dew or rain; long exposure to the direct rays of the sun; pruning and short packages. Berries for home use or shipment must be handled carefully, conscientiously. You can't fool your commission man any time or your local consumer all the time. Healthy plantations and those comparatively free from weeds can very often be worked over by first mowing and then burning the cured tops and mulch and throwing the dirt away from the rows of old plants until the row or ridge left is about a foot in width and then cultivation as with a newly set plantation. We spray twice with the Bordeaux mixture. First when the fruit buds appear, second when growth has ceased in the fall. Our plantations are healthy and our yields have been very high.

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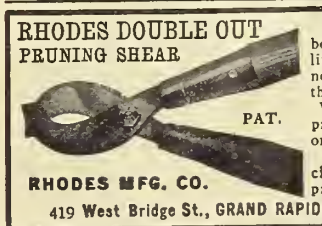

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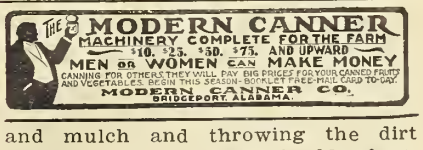

Strawberry Experience from an Iowa Grower

Last spring, 1904, my wife said one day that she wished I would take some dirty lye soap in the shed and throw it out; but instead of throwing it away, I reduced it one-half or more by adding clear water.

Now, I had a patch of Clyde strawberries set out the year previous, and after the mulching had been raked off in the spring I took this thin soap and I poured it along the row, right over the plants on several rows, and I waited and watched results. The vines were not injured in the least, neither were they benefited that I could see, neither were the berries on those plants any larger or smaller than on the rows not treated so.

After the berries were gathered the whole patch was mowed close to the ground, raked off and cultivated the same as a new patch. I paid no more attention to them until about the middle of September; on examination I found many small green berries and blooms on the rows treated with the soft soap solution, but none worth while on the rest of the patch. In fact, some of the fertilized plants were loaded with fine berries. Most of these berries came to perfection and ripened and we had ripe berries off and on till a hard freeze cooked them all.

Now, the point I wish to make is this: The potash that was in this soap was the main cause of producing the second crop of fruit that season. It is my belief that if young and vigorous plants are given some good available fertilizer early in the spring, and then after fruiting take off all top growth, cultivate well, they can be made to produce a paying crop the coming fall, if other conditions are favorable. The earliest or second earliest varieties should be selected.

Mulching or Covering Strawberries.

From long experience I am satisfied that the best time to put on mulching or covering is early in the fall, for this reason: It is much pleasanter to work then than to do it in cold and blustery weather; and if the fall should be a dry one, the mulch holds the moisture, and it keeps the strong winds from blowing the plants around and drying them out. I commence putting it on as soon as cultivation stops, and the full row is formed with new plants. I use straw, slough hay or very coarse stable manure from barns where lots of bedding is used, clear of all kinds of seeds. If I have plenty of it I put plenty of it on. I do not place it on the plants, but between the rows and up close to the plants. In this shape it remains until the ground is well frozen, say four inches deep, then with a hand rake we pass along the rows, drawing a portion of the mulching over the plants, just enough to slightly cover the plants, for the plants need some air and light, even in the dead of winter. I have lost more plants by over-mulching than I ever did by no mulching. If a snow falls and covers all before this covering is done, we take no worry, but as soon as a thaw somes and the snow goes off, then the mulching is put on the plants as described.

In the spring when the proper time comes—that is, when the plants show signs of growth—we pass over the rows again with a steel hand rake, and all this mulching, dead leaves, old runners, dead weeds and grass, if any, are raked off clean. And if the rows are thickly set with plants, with such varieties as Warfield, Crescent, Bederwood, Senator Dunlap, Johnson Early, we bear hard on the rake, sinking the teeth in the soil; but those of large crowns, such as Clyde, Brandywine, Bubach and others of that kind, we are more careful not to injure the crowns. By leaving the mulching remain on the plants you make the crop some later, but not as productive, and more apt to suffer from drouth. I am advising now for this latitude, southwestern Iowa. The rakings off of the plants is allowed to remain between the rows as a summer mulch and a clean place for the pickers to tramp on. After the crop is gathered, all top growth is mowed off close to the ground, raked off, and cultivated as a new patch, cutting rows down to about eight inches.

A Bit of Advice to Beginners in Strawberry Growing.

To the inexperienced it may seem out of place and out of order. Nevertheless the reasons offered are based on past and long experience, and they are true, and it is this: To any one who may read this article who contemplates planting and growing strawberries for a home trade, to sell to his neighbors in the country and the people of a country town, never to give away or sell any plants for love or money to any one within a radius of at least ten miles, if you wish to retain their friendship and hold your trade on berries. A next door neighbor at one time consisted of two old people, man and wife, who said they were too poor to buy strawberries, when the fact was they were too stingy. But being good neighbors, I made them a present of enough plants to set a small patch in their garden. They kept enlarging it until they had a patch large enough so that they were able to furnish berries to other neighbors, their relatives and sell some to some of my regular customers. They never thanked me for the plants or showed any gratitude for them. Again, I had another neighbor, who owned some four hundred acres of land; he was very obliging and accommodating to lend and to assist in time of need, but was so close and stingy that he never purchased a berry for his little ones, of which he had a house full. Because he was a good neighbor I selected three of my best varieties and sent him some two hundred plants and told him these were to grow berries for his children. The next season after fruiting time I asked him how the strawberries did. His answer was, Oh, they didn't do much good. From that time on that man grew cool and distant towards me, and I came to the conclusion that he had always considered that I gave him of my poorest kinds, when the fact was they were planted on poor ground, poorly cared for, and the consequence was poor berries.

People by the score would come to my patch, and seeing my large crops of fine berries would insist on a few plants, just for their own use. Nine times out of ten they proved a failure, and I got the cussing.

So if you are growing berries for a home market, don't sell plants, unless they are to be sent a good way from home. You are sure to hurt your home market if you do it. Tell them there are men who make a business of growing plants to sell, go and buy of them.

What I Grew on Six Acres the Season of 1904.

275	bushels strawberries, sold for	$750
50	bushels raspberries	187
75	bushels blackberries	150
60	bushels Early Cherries	81
40	bushels gooseberries	80
10	bushels currants	20
300	bushels seedling peaches	150
40	bushels apples	35
300	bushels sweet potatoes	200
50	bushels Irish potatoes	12
100	bushels turnips	25
1,000	pounds grapes	25
1,000	heads early cabbage	80

One hundred and fifty dollars' worth of asparagus, early tomatoes, beets, onions, puarsnips, early sweet corn, etc. This is a total of $1,935.

I will state in way of explanation that the peach trees and strawberries occupied the same ground. The cherries and currants the same ground. The turnips grew on an old strawberry bed that was plowed up after picking. Now, if this produce had been sold in a larger and better market, like St. Joseph of Kansas City, instead of a small country town, it would have brought more money.

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E. P. Lincoln, Kewanee, Ili., writes that the Cardinal raspberry has stood severe weather with him, while Columbian, Shaffer's and Loudon, alongside, were injured. Dyehouse comes first in his cherry orchard. Other varieties which do well are Early Richmond, Wragg, Ostheim, English Morello and Windsor.

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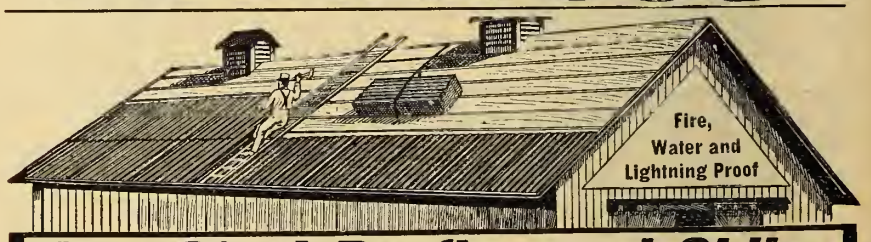

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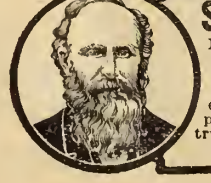

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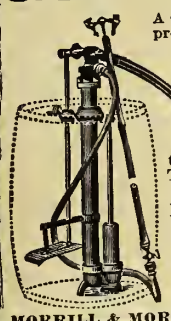
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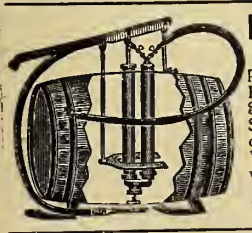
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How to Make Bordeaux Mixture.

The directions for making Bordeaux mixture are printed every season, and yet many persons either do not read them or do not remember what they have read. The matter cannot be too well understood, however, for many of the failures of spraying are due to the improper making of Bordeaux mixture. It has been found by the chemists that it will not do to make fifty gallons of copper sulphate solution, and then add four pounds of lime; nor will it accomplish the results to make twenty-five gallons of copper sulphate solution, and into it pour twenty-five gallons of milk of lime. Instead, the best results are obtained where the mixtures are poured at the same time into a third vessel. Here is the plan of making good Bordeau mixture which is recommended by the experiment stations:

To prepare fifty gallons of Bordeaux mixture, weigh out six pounds of copper sulphate (bluestone) and place it in a sack; suspend the sack from a stick laid across the top of a barrel, so that the bottom of the sack hangs clear of the bottom of the barrel. Pour in enough water to cover the bluestone. As soon as all the bluestone has dissolved take out the sack and add enough more water to make twenty-five gallons. Bluestone is readily dissolved in hot water, and the use of this will facilitate rapid preparation when work is rushing. The bluestone solution should contain twenty-five gallons of water and six pounds of bluestone.

Now, for the milk-of-lime: Slake four pounds of good quick lime in a barrel, taking care to do it in such a manner that when the lime is all slaked the mass will be a smooth paste, free from small particles of unslaked or burned lime. In order to get the best results great care must be taken. After placing the lime in the barrel, add enough water to wet it thoroughly, and when the lime begins to dry and crumble add more water, being careful not to add enough to chill it. By pouring on a sufficient amount of water to keep the lime from burning a smooth paste is formed, free from grit and small lumps, provided a good quality of lime has been used. Having slaked the lime, add enough water to bring the mass up to twenty-five gallons. Stir the lime thoroughly through the water, and it is then ready for mixing with the bluestone solution. Two me nare required to do this mixing properly. The solutions of lime and bluestone should be poured together slowly, and in such a manner that the solutions will mix in falling. When mixed, stir thoroughly, using a wide wooden paddle. After straining, the mixture is ready for use.

There is some little danger of not having sufficient lime to unite chemically with all the bluestone—it is best to test the mixture to see if sufficient lime has been used. Fill a saucer with the solution and add to it a few drops of ferro-cyanide of potassium (one ounce to a half pint of water). If a brown color appears, add more lime paste to the mixture, stir in thoroughly and test a second time. Add lime until the brown color does not appear when test is made.

An Enemy of Codling Moth.

In a number of papers have appeared articles stating that California apple growers are going to discontinue spraying against codling moth, and that instead of trying to poison this pest the growers will depend on an insect enemy wrich has been introduced into the country. The Fruit-Grower recently wrote to Mr. William Barry, of the board of horticultural commissioners for Alameda County, California, asking about this enemy of the codling moth, and he replies:

"The so-called codling moth 'wasp' belongs to a species of the ichneumonich fly, and was found by Prof. Compere in southern Spain. The climatic conditions of its habitat are identical with the climate of California, and for that reason it is doubtful if it will prove of benefit to the orchardists of a colder climate. That matter will have to be tested later on. At present the insects are being hatched out indoors, and none have been distributed as yet in open orchards, and it will take a year or more to determine their value.

"These insects are peculiarly constructed, like the rest of the family, and are larger than the general run of the species. The ovipositor is about one and a half inches in length, enabling it to reach the larva of the codling moth in its hiding place. It lays its egg in the larva and kills it with its sting at the same time. As soon as the egg hatches it lives upon the dead larva. This is about all that is known of this insect at the present time."

Thus it will be seen that this new enemy has not been thoroughly tried in California, and even if it is effective there in holding the codling moth in check, it does not follow that it will be of value elsewhere. Don't prepare to throw away a spray pump yet. This new insect will have to demonstrate its value.

Bridge Grafting.

Field mice have beaten all previous records the past winter. Tree protectors failed to protect where snow was deep. Mice went above protectors and got in their work to the extent of over 300 trees for us.

Bridge grafting is the only remedy if bark is gnawed to the wood, but if only outer bark is gone tree will usually live, although it's a good idea to bank with dirt the first year. If girdled place is more than one foot in length, better pull up tree or saw off below girdle and graft with a hardy variety, as a graft of this kind is liable to winter kill first winter. Scions used for bridging should also be of the hardiest varieties. Girdled trees should be attended to as soon as discovered—either bridged, grafted or wrapped with something to prevent drying up until person is ready to graft. Bridge grafting is easy. Use from two to six or eight scions, according to size of tree. Dig dirt away from tree so as to get plenty of bark for butts of scions. Use large scions of previous years' growth and cut them about four inches longer than girdle. Whittle both ends of scion similar to wedge, but in such manner as to fit tree, which is seldom straight. Make cleft in bark clean to wood above and below girdle. Put scions about one inch apart all around tree. Next, with strips of waxed cloths, same as used for saddle grafting, begin at lower end of scions and wind up, drawing very firmly so scions will be close to wood. Cover scions with this waxed bandage the entire length. If tree has much top, it should be staked to prevent swaying, or scions may break out at tops first or second year. Wax should be taken off last of August. For preparing waxed cloths see article on saddle grafting in March number of Fruit-Grower. If job is well done tree will seem to suffer no check in growth and wound will be healed over in a few seasons.

HARRY W. LITTLEFIELD.
Brooks, Maine.

"Something Doin' in Texas."

Of all the farm papers I take—and I take a number—I have never seen one which will come up to The Fruit-Grower. I would not take 50 cents for the January number alone, if I could not get another. I inclose names of five new subscribers which I picked up right here at home. Just as soon as I get over our rush there will be something doing in Texas for The Fruit-Grower.

C. E. ORMSBY.
Head Gardener Valley View Truck Farm .

Bordeaux mixture is the remedy to apply for blight of potato tops, a disease which often causes the loss of half the crop in some sections. Spray three times, when the plants are about six inches high, and again in two weeks, and a third time two weeks later. The Minnesota station found liquid Bordeaux more effective than the dry Bordeaux, but the latter was decidedly better than no spraying.

In most farmers' gardens the plants stand too thick. They do not have room to properly develop. Plant the seeds thickly, perhaps, but thin the plants while very small, so that each will have a chance to reach its best development.

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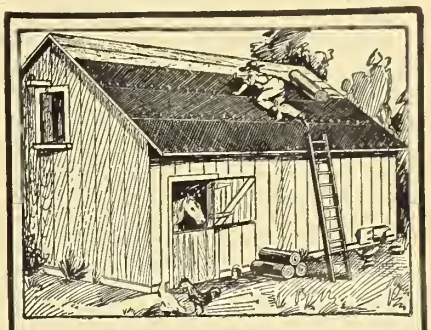
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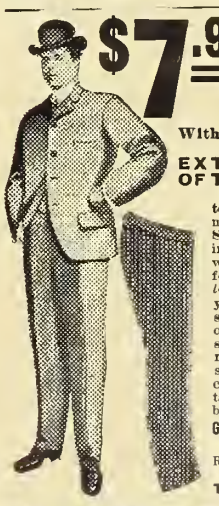
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W. G. Campbell, Jr., General Manager James M. Irvine, Managing Editor

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In compiling a list of Forty Thousand subscribers it is an easy matter to make mistakes, but we guarantee fair treatment to everyone. If you find an error in your address tag, or do not receive paper promptly, write us and we will trace matter up at once.

Entered as Second-Class Matter in the Postoffice at Saint Joseph, Missouri

Vol. 16. APRIL 15, 1905. No. 4

The Fruit-Grower has often claimed that farmers who grow fruit are among the very best of our rural population—that they stand among the very highest type of farmers. Others are of this same opinion. A writer in the Country Gentleman recently remarked that in a given section of any state would be found farmers who were up-to-date, progressive and intelligent; who have good homes and take a pride in all that concerns their farms. Yet in a neighboring community it will be found that the farmers are of a much lower type. This writer had been unable to account for this difference in the social standing of these two classes of farmers, especially when it was considered that the two were so close together. Now listen to this writer's theory of the difference:

"After some thought and consultation with others, I have come to believe that the most enlightened and contented farmers are to be found in the fruit districts and in those places where a long established Grange has maintained an active life. There are good reasons to account for this. To begin with, for some years past fruit growing under skilled management has given comparatively large financial returns. Many orchardists have found themselves with yearly incomes which render rigid economy unnecessary. There has been money for the so-called luxuries of life—for books, for superior school advantages for the children, and for generous household expenditures. Unquestionably a fairly liberal income does smooth some of the rough places in life and make the wheels run with less friction. Then, too, while there are certain seasons of the year when the life of the special fruit-grower is quite strenuous enough, yet in the winter he has an amount of leisure unknown to the dairyman. Then he has time for reading and thought and the finer arts of life. He goes to the village entertainment, the church or the institute more readily when he does not have to think of the necessity of returning home in time to help with the chores and milk a dozen or twenty cows. Besides this, there is the fact that the business end of specialized fruit-growing does call for a special type of man. The question of varieties means careful study, modern spraying operations call for especial promptness and thoroughness, the picking, packing and marketing when done upon a large scale demand executive and business ability of a high order. Your successful fruit grower is, by the law of the survival of the fittest, a selected man. The audiences with a large proportion of horticulturists show this."

The Fruit-Grower has frequently called attention to the so-called seedless apple which is being advertised throughout the country. Heretofore we have simply stated that even if the apple were entirely seedless, this is not the only quality which is to be considered in an apple. A seedless apple should have quality, appearance, shipping qualities, and the tree should be a good one; with these characteristics, a seedless apple would be entitled to consideration. But not otherwise, for it is of much greater importance that we try to breed quality into an apple than to try to breed the seeds out of it. But this Colorado apple is not what is claimed for it. In this issue the facts concerning it are given by competent and reliable people. A number of papers have boomed this thing to the skies, and have even used pages of space to tell about "seedless" apples which were given to King Edward of England, with a great blowing of trumpets. Therefore these statements from competent persons in this issue will be appreciated by Fruit-Grower readers. Let the seedless apple alone, until it has "made good."

In a number of state legislatures during the past winter it was found that the farmer members had an understanding, whereby they acted together on measures which affected the farming interests of the state. And how the railroads "viewed with alarm" this plan! It certainly bodes no good for certain grasping institutions when the farmers get together. In the legislatures where this plan was followed this winter, the farmer members met as farmers, and not as members of any political party. In discussing any proposed legislation they simply considered its effect upon the farming community, and did not consider for a moment the matter of party expediency. This is a most hopeful sign. May the time soon come when not only farmers, but all other classes of citizens, will think less of their party organizations than they do of the welfare of the whole people. The farmer legislators are to be congratulated upon the fact that they are rising above partisan politics.

Efforts are being made to unseat a certain United States senator who is reported to be more interested in the welfare of the express company in which he is a large stockholder than he is in the welfare of his constituents. It is reported that he said he was opposed to the parcels post, as it would be against the itnerests of the express companies. It should hardly be necessary to make much of a fight to keep this gentleman from going back to the senate. But as long as United States senators are so far removed from the people, just so long will certain rich and influential persons be able to buy their seats. When the senators are elected by direct vote of the people, it will be an easier matter to secure senators who will represent the interests of their constituents, instead of looking after their own private interests.

Never before, perhaps, have farmers paid so much attention to the selection of seed corn as they have this season. In nearly every state in the corn belt there has been an interest in this subject which has been unknown before. In many of the states the railroads have sent out special trains, with samples of good seed corn, and accompanying the train were experts in corn culture, who talked to the farmers about increasing the yield of this cereal. Corn shows have been held, and fabulous prices have been paid for especially fine ears. All this means that farmers are going to pay more attention to these standard crops, and it augurs well for the future of agriculture. There will be a revival, too, along this line in fruit culture—if, indeed, this revival is not already here. Fruits will be bred for a special purpose, and more attention will be given to the improvement of the crop. The work will be slow, but it will be done—it must be done.

The May issue of The Fruit-Grower should be one of the best we have ever issued. It will be devoted to the subject of leguminous crops, which, as is generally known, have the power to take the free nitrogen in the atmosphere from the air and store it in the form of nodules on the roots of the legumes. This subject of conserving the supply of nitrogen in the soil, thus adding to the supply, is one of the most important which confronts the farmer of today. Nitrogen is the all-important element in crop production; it is the highest-priced of all the elements which are added to the soil artificially, and the world's supply is being exhausted very rapidly. Everyone will remember the prediction of Sir William Crookes of a few years ago, that within thirty or forty years England would experience a wheat famine, due to the exhaustion of nitrogen in the soil, that would be appalling in its effect. In all parts of America, at the present time, farmers are studying this question of conserving the supply of nitrogen in their soils. Fruit-growers should be especially interested, for fruit plants, as a rule, are liberal feeders, and their wants must be supplied. Our May issue, therefore, which will have some special matter on the subject of growing leguminous crops for the purpose of adding nitrogen to the soil, should be of the greatest interest to all our readers. If you have had any experience along this line which you feel will be helpful, send it along.

No railroad legislation was enacted at the late session of congress along the line of the president's recommendation and in response to the demands of the shippers of the country. As a result a special session will likely be called early next fall to take up this subject, which President Roosevelt declared to be the most important one before the late session of congress. It is well known that there is strong opposition in the senate to any legislation which will bring about the reforms desired, and the railroads are ver frank in their statements that no bill not satisfactory to them can be passed. It is remarkable how short-sighted are the railroads in this matter. They claim they are not opposed to a number of plans of reform, but they oppose any plan which will give the government anything to say about freight rates. The rate-making power, they claim, must not be interfered with. They act on the assumption that the government would be arbitrary and unreasonable in fixing rates, and claim their property would be ruined. But this is foolishness. No sensible person believes that, even if the government had the power to fix rates, these rates would be below a point where they would yield a good profit to the roads. Of course, there are some roads with such a large proportion of watered stock that they could hardly expect to pay dividends on this fictitious valuation. But the roads which are not over-capitalized, and which are managed properly, would have nothing to fear. The government has never used any of its powers to oppress any institution whatever and certainly could not afford to use any such power against the railroads. The trouble with the roads, of course, is that they do not want their rates investigated, nor do they want them adjusted on a fair basis. But their policy is short-sighted. Every railroad magnate views with alarm the increase of socialistic sentiment in this country, for the first move of the socialists would be to place the railroad and telegraph systems in charge of the federal government. And yet, by their action in opposing even the faintest semblance of government supervision, these men are doing more to create socialistic sentiment than all the socialistic orators have done in a quarter of a century. The conservative business men are coming to the conclusion that government ownership of these public utilities would not be a bad idea, after the stand of the railroads. Note that the Standard Oil Company tried to take advantage of its monopoly as an oil refiner in the Kansas district, and as a result the state will establish a refinery of its own. A distinct step towards socialism, and yet it was caused by the action of the trust itself. If the railroads are not careful they will bring matters to a point where the government will either own the roads or will exercise the closest supervision of their rates, both passenger and freight.

We recently received a letter from a man who has put in a number of cold storage plants for farmers, who either wish to store their own apples or who wish to hold it until they have time to dispose of to better advantage than at picking time. This gentleman writes that there has been much interest in this matter in Western New York, and doubtless many more of these plants will be installed. Some growers, where help is scarce, advocate picking apples and placing at once in storage, without sorting or careful packing. Then, when there is more time, after the picking season is over, the fruit can be graded and packed in barrels or boxes. Of course, under this plan the storage house would have to be near the orchard, and if a commercial house is not available the grower would have to provide his own. This subject is worthy of careful consideration.

What They Say About The Fruit-Grower.

Every day The Fruit-Grower receives dozens of letters complimenting the paper very highly, and of course these letters make us feel good. Extracts from a few are published from time to time, but we want to publish in full two testimonials we have just received. Farm Journal of Philadelphia, whose advertising space is worth $42 per inch—note that we say it is **worth** that sum, which is the regular rate charged—uses an inch or more space to say the following nice things concerning The Fruit-Grower:

"It isn't often that we can find room for book or magazine notices, but we are so impressed with the merits of The Fruit-Grower, published at St. Joseph, Mo., that we feel called upon to bring it to the notice of our readers. Our Folks who are specially interested in fruit culture should subscribe for it. It is sent three years for $1."

Isn't that high praise, from high authority? Listen to this letter from S. L. Chesnutt, Jr., Concord, Tenn.:

"I just want to send you a word of congratulation on your excellent paper A dozen horticultural papers come to our reading room, but when I want something on the subject I usually go to The Fruit-Grower for it, and I notice the students do the same thing. I believe that if The Fruit-Grower were in every farm home in East Tennessee, our poorly developed fruit possibilities would in half a dozen years double our rural wealth."

This is from the professor of horticulture of Farragut School, "a model rural school." The letter shows that The Fruit-Grower fulfills its mission—it helps people who are trying to grow fruit.

The Fruit World, published at Melbourne, Australia, has the following to say of The Fruit-Grower: "We get The Fruit-Grower regularly in exchange, and can say it is the best we have seen. It is a revelation. We put this journal before us as an ideal for fruit journalism in Australia to work towards, and that is saying a great deal."

This Australian paper, by the way, has changed its name to The Fruit World and Journal of Horticulture; the name formerly was Australian Culturist. In working toward the ideal, which it has set, the paper has been enlarged and improved in many ways. It covers the Australian field in good shape.

One issue of The Fruit-Grower is worth to me all I pay for a year's subscription.—H. J. Bailey, W. Va.

The Family Circle

This is the last opportunity we will have to urge our renders to send in "blocks of five" subscriptions. This offer, as well as all other special subscription offers, will be withdrawn May 1, so that this is indeed the "last call."

If you have been intending to send a block of subscribers, send it at once. Next month will be too late.

And another thing: If you have been intendlng to send $1 to renew your subscription for three years, this renewal must be sent before May 1. After that date subscriptions only two years, instead of for three. There is quite a difference, you will see—certainly enough to justify every subscriber sending his $1 at once to secure the extension of his subscription for three years.

Is that clear now? All special subscription offers to be withdrawn May 1. Afatr that date subscriptions must be pald at rate of 50 cents a year.

It is due our subscribers that we explain the reasons which lead to this change. We were compelled to make the change simply because we could not afford to continue the low rates which have been in effect for some time. The increasing cost of production rendered a continuance of this rate impossible.

And even the announcement of the withdrawal of the special rates is but a preparation for another change which will be made about the first of next year. At that time the subscription rates of The Fruit-Grower will doubtless be advanced to $1 a year. The paper will be improved in many ways; more illustrations and special articles will be printed; a better grade of paper will be used, and some other new features will be added. But of this due announcement will be made later.

Why is this change made? For this reason: When The Fruit-Grower was established, eight years ago, it consisted of sixteen pages; no increase in pages was made for a number of years, and the subscription rate was thought to be a fair one for the character of paper furnished.

But now the paper has been increased in size until it is many times its former size. Our readers get more for their money than they formerly did—many times more. Of course our advertising patronage has increased during that time, but the pages of reading matter now often number twice as many as were contained in the entire paper a few years ago.

During this elght years the cost of white paper has been increased, wages have advanced, so that the cost of production has been increased in many ways. Thus a change has been made necessary.

But enough of this for the present. The subscription rate will not be advanced until next January, anyway. Sufficient now to know that all special subscription offers will be withdrawn May 1.

At intervals notices are sent to those persons whose subscriptions are in arrears, and these notices were sent April 1. A great many persons have sent their renewals, but others have not. If you received one of these notices, or if the date on the wrapper in which you receive The Fruit-Grower shows that your subscription has expired, will you not send your renewal at once? Have we not a right to expect this of you?

We know that every member of The Fruit-Grower Family must have enjoyed the papers they have received since the first of the year. We know, too, that any person who grows fruit for home use or for market, or who has a home garden, has received the value of at least a year's subscription from these numbers. This being the case, do you not think you ought to send your renewal at once? Is it not due us?

Do you remember the time when the commission merchant did not send remittance for your fruit just as promptly as you thought he ought to have done? Do you recall what you said about his honesty, or at least his lack of business methods?

Then consider the case of The Fruit-Grower. The sum due us in your case is not much, of course—but if everyone who owes that much were to withhold his remittance, can you not see what the effect would be to us? The total sum withheld would be enormous.

Realizing this, will you not do your part? Will you not renew your subscription today?

Occasionally we receive letters from scribers criticizing our policy of continuing subscriptions after the time has expired. Of course, there are two sides to this question, and lots of good people believe that we ought not to so continue subscriptions.

It was formerly our policy to discontinue all subscriptions when time was out. This was our rule for a number of years. But so many persons complained of this policy and asked for the change, that we adopted the policy of continuing subscriptions until ordered discontinued. It frequently happened, under the old plan, that the names of persons were taken from our list who had either overlooked the matter of renewing, or who did not have the money to spare at certain seasons. Later, when these persons renewed their subscriptions, they asked that the papers they had missed be sent them, and we were seldom able to do this. Therefore the change was decided upon, for under our present system, any person who derises his paper stopped when the time is out can have this done. It is only necessary that he notify us to this effect.

Under the circumstances, we feel that no one is justified in finding fault with our policy, for they can have their subscriptions stop at expiration, if they will simply notify us of this fact when renewing.

We receive ten letters from subscribers who thank us for continuing their names on our list after their subscriptions have expired, to one letter which does not approve of this policy. This explains why we have adopted it.

Of course, it is not our desire to force The Fruit-Grower upon any person who does not want it. We simply ask that such persons send us instructions to discontinue their subscriptions. So that everyone who receives a notice of his subscription being delinquent is urged to write us at once. In writing, these subscribers should do one of the following things:

1. Should renew the subscription.
2. If not prepared to renew now, should ask us to continue the subscription until it will be more convenient to send the money, and this we will be glad to do.
3. If there is an error in the account, should call our attention to the same, and it will cheerfully be corrected.
4. Should ask us to discontinue the paper, if no longer wanted.

There is no reason why every person who receives a delinquent notice should not write us at once for one of the above purposes. Honest now, is there? Have we not a right to expect that everyone will do this? If you receive a notice, write us now. We shall expect to hear from everyone.

How have the members of The Family liked our special numbers? Many have written us congratulating us upon them. The Garden special seemed to be especially popular. We want to make this an annual feature, and suggest that every member of The Family keep a record of their gardening operations this season, so they will have something good to offer next year. And if they can secure some good photographs, they will be appreciated, for we want to have some illustrated articles in the next Garden special.

Next month we shall talk about leguminous crops. If you have grown any of them, or if you have failed in growing any of them, send a brief report of your experience. Boil the matter down into the fewest number of words which will express your meaning, and send to us so that the letter will reach us by May 1. Let us make the May number a great paper along this line.

Now a word about our Brother Jonathan booklets. Five of these are ready, as follows:

"Propagating Trees and Plants."

"A Treatise on Spraying"—how to make and use insecticides, with descriptions and illustrations of insects which attack the fruit and plant of apple, peach and strawberry.

"How to Grow Strawberries."

"The Home Garden."

"Packing and Marketing Fruits."

These are good books, well written, well printed, well illustrated. They are intensely practical for the members of The Fruit-Grower Family. The books sell at 25 cents each, or the set of five for $1.

They can be secured free as premiums under the following conditions: Any subscriber can send the name of a new subscriber and 50 cents to pay for same, and claim one of the books free as a premium. Two books for two new subscribers at 50 cents each, and so on. Note that they must be new subscribers, and subscriptions must be at 50 cents each.

These booklets are valuable, and we are sending out a great many of them. Get some new subscribers today and secure the booklets you want.

BROTHER JONATHAN.

The Color of Fruit.

The following is taken from a bulletin of the Department of Agriculture:

A large proportion of the poorly colored fruit from old orchards is caused by dense-headed trees and close planting, which prevent the free access of air and sunlight and delay the maturity of the fruit in the fall. The fundamental corrective in such cases lies in judicious pruning, by which means the fruit may be exposed to the sunlight.

In other cases the poor color may be due to a combination of heavy soil, tillage, frequent turning in of nitrogenous cover crops, spraying, etc. These conditions stimulate the trees to aoctive growth the foliage increases in health, size and quantity, and as the water holding capacity of the soil is enlarged by the incorporation of the cover crops and is retained by the tillage, the trees grow late in the fall and the fruit does not properly color before the picking season arrives. It is often possible to overcome the difficulty by severely pruning the top to let in more air and light. If this treatment does not prove efficient, the cover crops may be withheld when the fruit will usually mature earlier in the fall, unless the season is wet. As an additional treatment, where necessary, the growth of the orchard may still further be checked by seeding it down until the desired condition is attained.

It is impossible to secure a uniform degree of maturity and size when all the apples on a tree are picked at one time, as fruit in different stages of growth is mixed together on the same tree. The apples differ in size and maturity in relation to their position, the upper and outer branches producing the large, highly colored and early ripening fruit, while the apples on the side branches and the shaded interior branches ripen later. Greater uniformity in these respects is approached by proper pruning and by other cultural methods, but the greatest uniformity can be attained when, like the peach or the pear an apple tree is picked over several times, taking the fruit in each picking that approaches the desired standard of size and maturity.

Summer apples, like the Yellow Transparent, Astrachan and Williams, are usually picked in this manner, and fall varieties, like Twenty Ounce, Oldenburg and Wealthy, are sometimes treated similarly. In recent years a few growers of winter apples have adopted the plan for the late varieties, with the result that the size, color and ripeness of a large proportion have been uniform. This method of picking is not usually adapted to the apple merchant who buys the crop of a large number of orchards, and who cannot always secure efficient or abundant labor, but for the specialist, who is working for the finest trade and who has a storage house near by or a convenient refrigerator car service to a distant storage house, the plan has much to commend it.

Hardy Trees by Double-Working.

In the January issue reference is made to the double-working, or top-working, of fruit trees to secure hardy trees. Up here, in the extreme northern part of Illinois, where the frost goes down six feet deep, as it did in 1899, the roots of tender apple trees are killed, as are cherries on Mazzard and Mahaleb stocks, plum on Myrobolan, and French pear and crab roots. I lost 221 Wealthy trees, large enough to bear, on tender roots. I also lost Duchess trees on tender roots. But Duchess, Wealthy and Longfield came through on their own roots. So did the Kieffer pear. I find that the tender appies, top-worked on hardy roots and stem, will produce more and better fruit. I am not prepared to give a scientific reason for this, but I believe that the roots and trunk, being hardier and better adapted to the soil and climate, impart a portion of their hardiness to the more tender variety. For instance, Grimes' Golden, grafted say, three feet above the ground on Virginia crab, will bear heavy crops, while if it is grafted on tender roots it will not live long enough to bear at all. One year ago last spring I planted an Orient plum. As I planted it I trimmed it, and one of the trimmings was grafted on one of my native (Chickasaw) trees. One year ago the tree grafted on Myrobolan root froze to death, while the graft on the native bore a crop of nice plums. And how nice they were. California could not beat them. Remember this graft was only a yearling.

Now, will some of The Fruit-Grower's wise people tell me why the tree on Myrobolan stock winter-killed and the same variety on our native plums bore fruit? Now, don't all speak at once.

Kent, Ill. D. T. THOMPSON.

Double-Working Apple Trees.

Recently a writer in The Fruit-Grower said that Minkler apple trees had proved to be free from root rot with him, and asked if this has been the experience of other growers. L. J. Gibson, Dixie, Okla., writes that Minkler is not free from rot with him. Mammoth Black Twig is a better stock to resist root rot than Minkler. Mr. Gibson adds:

"The long scion graft is the best way to grow apple trees to get them on roots which will resist root rot. Use a long scion, which will put out its own roots, and then the piece of seedling root can be removed from the stock, which will make a better tree without it. We have had experience growing them in this way. We had twenty grafts, from which we removed the piece of seedling root at one year old, and found that these trees made as good growth as other trees from which the piece of seedling root was not removed. The plan of using long scion to get good stocks is the way to get good trees for this

Record-Breaking Nursery Business.

A letter from Stark Bro's Nurseries and Orchard Company, Louisiana, Mo., gives us some very interesting facts relative to the nursery business for this season. That letter states that all previous records in volume of sales for the month of March were broken last month; that is, that the sales for March, 1905, were several thousand dollars heavier than for any previous March. Report for this company shows some interesting things regarding the class of orders from tree planters. In the first place there has been a marked falling off in the demand for Ben Davis trees, and this year's experience would indicate that the continual pounding old Ben Davis has received has resulted in greatly curtailing planting of that variety.

Another fact noted this season that, following the shortage of the apple crop in the middle west, not so many very large commercial orchards are being planted. Instead, the chief planting of apple trees is being done this season by farmers who are putting out orchards for home use, and in many cases they are large enough to furnish some fruit for market. But the big commercial orchards, where fruit-growing is to be an exclusive business, are not so much in evidence this year as usual.

Stark Bros. report that their office and packing force has been greatly increased for the season's business, but the early opening of spring has helped the firm materially, in allowing orders to be filled earlier than usual ,thus relieving the rush later to some extent.

Altogether the season has been a most satisfactory one, planting for the coming season opened early and was finished in good time.

Of nine papers which come to our country home, The Fruit-Grower is the best; most pages and best information.—W. D. Mayfield, Denison, Texas.

Strawberry Questions

A multitude of other duties has caused a break in our discussion of the strawberry questions which were sent in so long ago. Many of these questions are such as cannot be answered without a long and careful series of experiments or by the combined results of observation on the part of practical growers. Unless, therefore, we can have the experience of readers we can hope for little light at the present time. I have been somewhat disappointed in not receiving more discussion of these questions.

Question No. 9 on the list sent me by the editors is this: "How close to the fruiting season should berries be cultivated?" It seems to me that two points are involved in this question. One is that of injury to the roots and the other is the cleanness of the berries at picking time. Deep cultivation, which breaks the roots, is always injurious when plants of any kind are called upon to do their best work, as at fruiting time. If we cut or tear away a portion of the roots of the strawberry at this time we reduce the water supply taken from the soil by those roots, and which is so much needed in the leaves to elaborate the food and fill out the berries. We must thereby reduce the yield. On the other hand, light, shallow cultivation, by preserving a surface mulch and preventing the loss of moisture, may prove beneficial. My own impression is that so far as yield and size of fruit is concerned I should prefer frequent light cultivation right up to and during fruiting. The difficulty with this, however, is that the berries become so covered with earth at each rain as to be seriously injured in quality. It is a slow and laborious process to so mulch them as to prevent this after cultivation has been carried on in spring. It is all right for the production of specimen fruits for exhibition, or for the amateur's home garden, but hardly feasible for the commercial grower. We have been accustomed to keep up the cultivation in our experimental beds, but our fruit is often badly soiled as a result. Practically the same conditions apply to spring hoeing as to spring cultivating.

10. "Does late spring cultivation delay maturity?" I do not know, but I am under the impression that it does. I know that our old beds, which do not receive cultivation, usually ripen ahead of the newer ones which do receive it. It seems to me that the cultivation is an important factor in this, but perhaps not the only one. It may be that there is diminished fertility the second year, which may tend to hasten maturity.

11. "Does late fall irrigation hasten or delay maturity?"

12. "Does early spring irrigation hasten or delay maturity?"

13. "Does frequent irrigation in spring, before fruiting season, hasten or delay maturity?"

These questions I must refer to readers who have had experience with irrigation. My own impression is that unfavorable conditions generally tend to hasten maturity. A peach tree suffering from borers may ripen its fruit sooner than a healthy tree. In accordance with this law, so far as spring irrigation replaces unfavorable conditions with those more favorable, it may be expected to delay maturity, but I should say that the amount of such delay is not likely to be great.

14. "Do rows running north and south mature better than rows running east and west?"

15. "Do rows running north and south yield better than rows running east and west?"

Can any of our readers give facts bearing on this point? If any difference exists I should expect it to be influenced by climate and location. On the plains, with their hot, dry winds and intense sunlight, I think I should prefer rows running north and south, other conditions being equal. In the moist climate of our sea coast country, with its high humidity, frequent fogs, and tendency to rotting of the fruit, I should expect rows running east and west to possess the advantage, if either, since thereby a little more sunlight might reach the plants. As a matter of practice we have never considered this question and I do not know whether it has any appreciable influence or not.

16. "Does wind delay maturity?"

Some readers must have opportunity to compare the ripening of fruit in a sheltered location with that in an exposed place where it is subject to full sweep of the wind. Will they not give us the benefit of their observations? The day temperature in a location protected by wind-breaks, where the air is still, often rises higher than in the open field. This should tend to hasten maturity. On the contrary, the night temperature often falls lower, which might tend to retard maturity. What the resultant outcome would be I cannot say, probably not the same under all conditions, but I should expect the tendency to be for fruit to ripen slightly earlier in the sheltered location if any difference at all were found.

17. "Does wind affect yield?" It seems to me very probable that it does. I do not know how far wind is responsible for pollination of the strawberry, but I believe it to be due chiefly to the work of wild bees.

Bees not only prefer to work in still air, and avoid wind, as far as possible, but wind tends to scatter the pollen so that there is less to be carried by the insect workers. It seems to me quite probable, too, that the stigma of the flower may pass beyond its receptive condition, and the pollen may lose its vitality sooner when exposed to drying winds than otherwise. Wind greatly increases evaporation and evaporation would seem to be unfavorable to these delicate tissues long continuing in an active condition. Imperfect pollination means "nubbins," and "nubbins" mean reduced yield.

18. "Should phosphate, potash, bone meal, nitrate, tankage and dried blood be applied in fall or spring?"

This combines several questions in one. What are the principles involved? In general, fertilizer should be furnished to the plants when they need it. That is when they are growing or producing fruit. Not all these fertilizers are available to plants in to form in which they are applied. In that case time is required for the solid organisms to change them into available forms. Phosphate is largely available at once, but is liable to be changed into less available forms in the soil. Spring is therefore the best time to apply it, unless it be specially needed in midsummer to force a fall growth after fruiting or in case of August setting. Potash is carefully held by the soil, and not easily lost, so that there is less danger from applying it before it is needed. Since it is readily available, nothing is gained thereby, and it, too, had best be applied when the plants need it, usually in spring. Bone meal is more slowly available, not easily lost, and it therefore matters less when it is applied. Nitrate of soda, it should be remembered, dissolves as easily as common table salt, and is as easily washed out of the soil. It is in just the form in which plants need nitrogen, and they may feel its effects within forty-eight hours. If not used at once it is likely to be washed away or to be changed into less available forms and much of it be lost. It should therefore be applied just when the plants need it, and not in large applications at one time.

A smaller proportion of the phosphoric acid of tankage is directly available than in the case of acid phosphate. It is readily fixed in the soil and it therefore matters less than with most of the materials mentioned, if it is applied sooner than needed. The nitrogen in both tankage and dried blood is i nthe form of organic nitrogen. This means that it must undergo at least three changes, brought about by three different classes of soil organisms, before it reaches the form in which it is most readily available for plants. These organisms work most vigorously at high temperatures, that is, in warm weather. When applied in spring, therefore, we may expect the nitrogen of these substances to gradually become available and supply the needs of the plants during the summer and latter part of the growing season.

19. "What is the best basic formula for spring application?"

20. "What is the best basic formula for fall application?"

I do not know. Our fertilizer tests have been very confusion. For our soil and conditions I should feel safe in using 400 pounds sulphate of ammonia, 400 pounds sulphate of potash and 1,200 pounds of acid phosphate or basic slag per acre for a spring application. Under other conditions, with different soils, this might be all wrong. For an application to force plant growth in fall I should use chiefly nitrate of soda, applied at intervals, with perhaps a light dressing of bone meal and potash early in the period of fall growth.

21. "What effect does phosphate, potash, bone meal, nitrate, tankage and dried blood have on berries?"

Who can answer this question? We have sought to find an answer regarding the effect of some of these, but thus far have been unable to detect any difference.

22. "What fertilizer or combination of fertilizers, or system, will hasten maturity?"

23. "What system of cultivation will hasten maturity?"

I should be glad to have any reader who can answer these questions.

24. "What is best for berries, muriate o rsulphate of potash?"

Under our conditions sulphate has given better results.

25. "Should fertilizer be applied broadcast between rows or in drills along the side of vines?"

My opinion is that sowing it broadcast over the rows, with little between them, except near the plants, will give best results. Strawberry roots are generally thought not to extend far from the plant. If this is true, as it seems to be, the place for the fertilizer is near to the plant.

FRED W. CARD.

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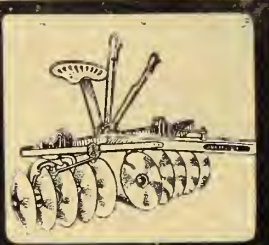
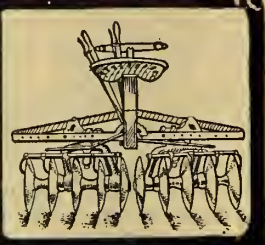
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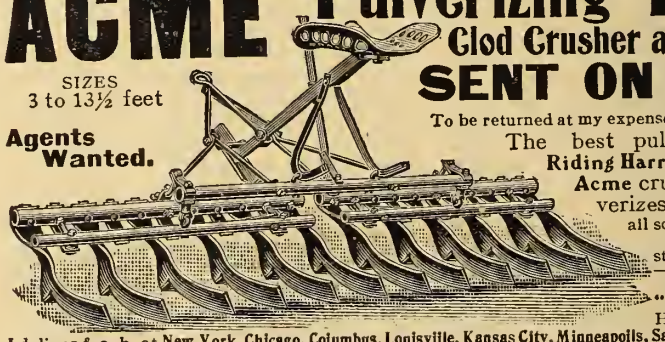
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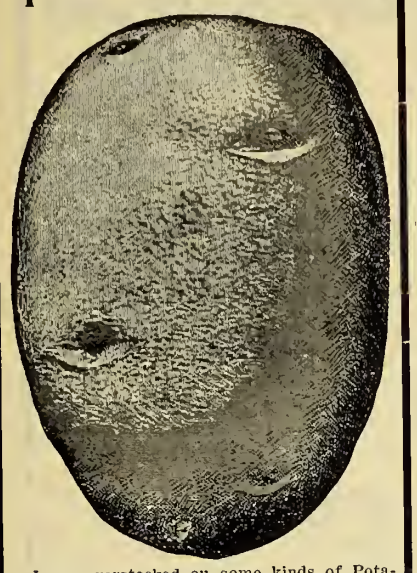

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The May Fruit-Grower.

Next month The Fruit-Grower will contain some special articles on the subject of growing leguminous crops. Particular attention will be paid to the crops which should be grown by fruit farmers to maintain, or to increase, the fertility of their soils. Cow peas, soy beans, etc., can be sown late in the season, after the season for cultivating an orchard has passed, and will make a good growth before frost. Cow peas, too, are best suited to precede a strawberry plantation, so that these crops are of especial interest to our readers. Next month we expect to publish some special articles which will be helpful.

Readers who have had experience in growing these crops as cover crops, as hay crops or for turning under to enrich the soil, are urged to send brief reports of their experience. Write briefly, for there will be none too much room for the articles. Have the articles to reach this office by May 1, at latest.

Tell how you handle cow peas or soy beans: Do you save the hay crop; do you turn it under, do you pasture it—tell us which plan you find best, and why.

In February we announced some awards for the best articles for our gardening number. The persons to whom the articles were referred have announced their decision as follows:

First prize—Mrs. Etta B. Stewart, Oregon, Mo., R. F. D. No. 3.

Second prize—Mrs. John L. Wilson, Centerville, Iowa.

Third prize—Albert Stuff, Route 35, Peoria, Ill.

Checks for the cash prizes have been sent to these persons, and a set of the "Brother Jonathan" booklets has been sent to each of the other contestants whose articles were published.

Awards for the articles in this issue will be announced in May. Many articles could not be used this month, as was the case in March, on account of lack of room. We only regret that all of them could not be published, for they were all good ones.

Don't forget to report, very briefly, your experience with cow peas, soy beans and kindred crops, for May number.

The Seedless Apple.

So many inquiries have been received asking about the so-called seedless apple, and so many articles have been published in other papers in regard to the wonders of this new fruit, that The Fruit-Grower presents the following letters, one from Prof. John Craig, of the horticultural department of Cornell University, and one from Mr. W. H. Ragan, of the division of pomology, Department of Agriculture, Washington, D. C. We think these letters tell the truth concerning the "seedless" apple:

I do not feel that I can approach this subject with the calm and judicial spirit which should characterize a discussion of any important pomological creation. The reason is that this particular production has been the creature of excessive advertising and apparently a deliberate system of booming. If seedless apples were absolutely new to the fruit-grower, the matter would take an a different complexion; but as already pointed out by other writers on this subject, the seedless apple has been known for a couple of centuries back. Again, from what we can learn of this variety, it has no transcendent merits aside from scarcity of seed; and from the best information at hand, it can not even be called seedless, because many specimens examined have yielded up seeds. If seeds are developed at all, then the core characteristics are certain to be present; and to my mind, these cartilaginous flakes which surround the seed cavities are the objectionable features. Are they not, after all, the things that make up the small boy's core? And would not the urchin's satisfaction be largely lessened if that important feature (the core) were to disappear from the apple?

But pleasantry is not argument. My point is that we should examine, test and know something about the qualities of a fruit before lauding it to the skies and foisting its merits upon the uninformed public long in advance of the actual date of its introduction.

The articles written about this apple are in many cases absurd and ridiculous. The fact that it has secured an entree to the scientific journals obtained for it the comment of the literary periodicals. The new and the novel are the things which attract the editorial eye, and so the story of the seedless apple goes on its travels. If the promoters are sure of their prize and in earnest in their desire to give the public a real acquisition, let the apple be examined and passed upon by competent authorities in pomological circles. Let the trees be tested at the experiment stations, and when the value of the fruit has been established beyond peradventure, then let the public have it as speedily as possible. In the meantime, those interested in apple planting should proceed with much caution and should accept with considerable reserve the rather extraordinary tales that are circulating in the periodicals and public press of the present day in regard to the qualities of this so-called coreless creation. JOHN CRAIG.

Cornell University.

Referring to inquiries concerning the seedless apple from Colorado recently exhibited at the Louisiana Purchase Exposition at St. Louis, I would say in answer to your several questions:

1. It is not wholly seedless. Two specimens were cut, in cross section, in one there was an immature seed and in the other a perfect one with a starchy kernel which was cut through by the knife;

2. It is, or was not of good quality, the flesh being very hard, dry and comparatively flavorless. Of course, the specimens were immature, but I cannot think it will ever be really good—certainly not very good or best;

3. It was not of good size, at least not for commercial purposes.

4. It was really attractive in appearance, being symmetrical in form and of bright coloring, though the latter characteristic prevailed among Colorado grown fruits, as exhibited at the same time and place.

5. I cannot say that it did not possess merits of its own, but certainly not equaling many well-known varieties.

6. There have been so-called seedless varieties known from away back. Several are of historic record within the past hundred years, which practically covers the period of the American literature of the apple.

7. No one of this class, which is an abnormal form occasionally met with among seedling apples, has as yet proven itself to be of intrinsic value, as compared with our standard varieties.

8. Many additional suggestions occur to the writer: No strictly coreless variety seems to have yet made its appearance. The Colorado variety has the core formation prominently conspicuous, though, in the entire absence of seeds, which, so far as examined, appeared to be the rule, the pericarp was not so objectionable as in the ordinary apple with perfect seeds. A specimen of the Spencer (Colorado) seedless apple, now in solution in the museum of the United States Pomologist, in this city, exhibits the peculiarity of having decayed (before being placed in solution) in such a way as to give down in all its parts excepting the core, so that that part stands alone in its entirety, thus showing that the objectionable features, as urged against the normal apple, is its most enduring characteristic. Horticulture, as an art, has wrought many changes in the apple, as it came to us from the hand of the Creator, but the seedless apple, as it has appeared from time to time, to the generations that have gone before, has always been a freak of nature, just as abnormal forms, or better, monstrosities, make their appearance in animal life. The Colorado variety, notwithstanding claims to the contrary, is not the creature of art. Like all its kind, it is a lussus naturae, nothing more. W. H. RAGAN.

Dept. of Agriculture.

Washington, D. C., Feb., 1905.

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When you get estimates on painting your house this spring, insist upon every painter figuring on the use of strictly PURE WHITE LEAD. This will put them all on an even footing and will insure your getting best possible results, if you employ a good workman.

It will pay you to go even farther than this and to name the brand of White Lead to be used. In these days of adulteration, it is not safe to assume that White Lead is pure because the label or brand says so.

For the benefit of those people who do not know what brands of White Lead are pure, we have printed a booklet "What Paint and Why." It tells why PURE WHITE LEAD is the Best Paint and names the brands that are purest and best. This is valuable information for every house-owner, because while all White Leads sell at practically the same price, there is great difference in the value of different brands.

We will send this booklet, free, to any one who will ask any of our offices for it. Architects and painters are invited to send names of customers interested in house-painting. "What Paint and Why" will be valuable to them.

NATIONAL LEAD CO.

Largest manufacturers of White Lead in the world

NEW YORK BOSTON BUFFALO
CLEVELAND CHICAGO
CINCINNATI ST. LOUIS
NATIONAL LEAD & OIL CO, Pittsburg
JOHN T. LEWIS & BROS. CO., Philadelphia

Best Peach Basket Covers

YOU, MR. PEACH GROWER, like all business men, desire to secure the highest prices for your product. Therefore you owe it to yourself to investigate the claim we make.

WE CLAIM that our TARLATAN PEACH BASKET COVERS enable a grower to pack his fruit in such a manner that it will reach the consumer in PERFECT CONDITION, and thereby command the highest prices.

Think a Moment

what this means to you—it means getting the hard-to-get few cents above the ordinary price, the few cents which spell

Extra Profit

Not something for nothing, but more for everything—for all the labor and expense required before fruit can he marketed. We will convince those who write.

SEND FOR A SAMPLE COVER AND PARTICULARS.

JAMES THOMPSON & COMPANY
16 Green St., New York.
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$1500 Yearly easily earned by Christian man or woman as Manager Pictorial Biographical Engraving of President Roosevelt's Career from Boyhood to Presidency. Send addressed envelope for particulars to Hon. Robert Doan, Ex-Member Congress, 173 Colorado Building, Washington, D. C.

When writing to advertisers always mention The Fruit-Grower.

Our Specialty **BOXES** FOR PACKING Green or Dried **FRUITS** Our Specialty

If interested, write us for prices. CALIFORNIA PINE BOX & LUMBER CO., Rialto Bldg., San Francisco, Cal.

Maj. Holsinger's Department

First Asparagus, March 26th.

We enjoyed our first asparagus Mch. 26th. My man "Friday" astonished me by saying, "You can get a nice mess of asparagus in the upper patch." I had set him to cleaning it up for cultivation; what was my surprise to find the asparagus 12 to 18 inches in height this the 26th day of March. By reference to my book, I find last year first asparagus was on our table April 6th, so you perceive we are 12 days earlier than a year ago. How any one can do without a bed of this most excellent vegetable, passes my comprehension.

Rabbits.

Where do they stay? Today I ran two out of my grounds. When it is remembered that I live in a city of 5,000 people, including many rabbit hunters (for there are at least 300 Africans in town and all rabbit fiends), the question remains, where do they stay that the crop is not abated? I normally detest the hunter, but as long as they confine themselves to the rabbit, I say, "go it."

Last winter there were car loads of bunnies sent here from the surrounding towns. They added much to the comfort of many poor families who were unable to provide meat for their families. The Salvation Army were the recipients as well as the distributors of many thousands of the "apple peelers." Without this wholesale destruction one must wonder what the orchardist would do in the growing of an orchard. From this wholesale destruction of bunny I had thought we should have a curcease of the rabbit evil.

Raspberry Anthracusse.

I took a run out into the country among the vines to pick up a few items perchance whereby I could give some information available to use on others as well as being useful to myself. I found the anthracnose in all the raspberry fields, save one. Those in which the disease was notable I found grown to grass and weeds, none of which had received late cultivation. They are a sorry lot indeed. The one plantation was clean of all weeds, having been cultivated throughout the season. The canes were bright, fairly glowing with health and promising a bounteous crop of fruit. From present indications I don't believe there will be over one-tenth part of a crop of raspberries.

Blackberries.—All of the Early Harvest type are killed down to the ground. I find on low ground even Snyder is badly injured. My sons have cut down and ploughed up some six or eight acres of such berries. This was the second time we have lost a crop of Snyder, because of their being planted on bottom land. Hereafter we will stick to the hills in planting our blackberries. This will not apply to the Early Harvest, as they are susceptible to freeze, even upon our hills, when themercury falls to 15 degrees below.

Bees.

Are you interested in bees? Do you care to have any? Some years ago I met an old-time friend, who, knowing I had been an enthusiastic bee culturist, asked the usual question: "How are your bees doing?" I told him I had quit the business on account of my multitude of cares piling up so that I had no time for bees, but that as age was creeping upon me and I loved the busy bee, I though of again taking it up.

"Have you any large trees near your house," he asked.

I told him I had.

"If you wish any bees, put your hives up in your trees and you can get all you wish, they coming to you. I had none and now I have seven colonies, all captured in that way."

On my return home, although late in swarming season, I put up three boxes and first week caught two. Last year I caught two more out of three boxes up. A friend whom I induced to put up a box in a cherry tree (he had no forest trees), not over four feet high, caught a good swarm. Try it. It's a sure pop.

Kieffer Pear.

The Kieffer is worth all the other pears. Why? Because it is a sure bearer and comparatively free from blight. My first planting of Kieffer was in 1882, twenty-three years ago. I planted five trees, all of which still do business. They have never entirely failed to bear fruit since coming into bearing. The only blight shown has been some among the twigs. The trees have broken badly with the loads of fruit. The value of these trees has exceeded any that I have ever planted. I think I am conservative when I say that these five trees have produced at least $625.00 worth of fruit that has been sold. Possibly much more, as the crop from these five trees has rarely fallen below 40 bushels during the past twelve to fifteen years and sometimes we have sold them at more than $4.00 per bushel. One sale recorded netted 90 cents for ten-pound baskets. I have often been asked: Why did you not go into the Kieffer pears more extensively? At the time I purchased these trees it took $1 per tree to purchase them. Then it was an experiment, and dollars were as scarce as the proverbial hen's teeth in those times. We have since planted several thousand of them. They are doing nicely, but the price has not kept pace with our planting.

The only drawback in our experience was in the very low temperature of 1899, which registered with us 32 degrees below. Many of our trees were killed in the heart-wood, but all have recovered below the frost line, so that our trees are in fine form.

Individually I have never entirely lost a Kieffer with blight. I have seen, however, whole orchards killed by blight. On prairie and very rich alluvial land they are not immune. Our land on which our Kieffers do best is a thin soil of shale.

Now, how to grow a Kieffer orchard? This I believe was the question given to me to discuss in the April number. First, having selected the elevation, on thin soil, on highest point obtainable, the ground having been duly prepared for the planting about the same as for corn, select good, stocky trees of one or two years' growth. I prefer those one year old, as they require no cutting back. Plant 16 by 16 feet. You can cultivate in berries or corn for three years, after which I would sow to clover and allow the trees to shift for themselves. I don't believe in cultivation for pears after three years. I feel certain the rapid development of pear growth more than anything else will cause your trees to blight.

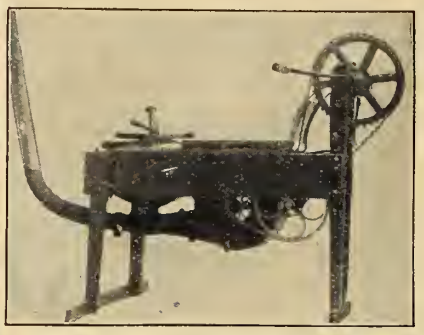
You say you want an edible pear? If the Kieffer is properly handled it is an edible pear. How to secure this property in the pear? By picking early, just as soon as the seeds are colored they should be picked and put away in some warm place (if for early use) and ripened. If for late keeping, they should hang until frost and then placed in the coolest possible place. They can thus be made to cover a range of four or more months. Those first picked will be quite smooth and buttery—being picked early, the stone cells have not formed in the pear and are much better than those that have been allowed to hang until late. Last year our early Kieffers sold readily at $1.25 to $1.50 per bushel in our Kansas City markets, while late Kieffers were a drug at almost any price in our market.

This was still worse in the St. Louis market, as by Nov. 1 I noticed nice large Kieffers offered at 50 cents or less per bushel. The question now is will it pay to raise Kieffers at these low prices? That will depend. If near a good market and can be sold without the loss so often occurring by rot and the frequent handling, yes—if you have to ship and consign, no.

Seedling Peaches.

Occasionally I receive the experience of someone who has the independence to cut loose from the traditions of the fathers and try for himself. See what the experience of Mr. Joseph Gerardi has been. I hope it won't cause a chill up the vertebra of our Manhattan professor who so stoutly proclaimed against our championing growing seedless peaches. Throw on the light. Experience is what we want. We have had theories enough to make us tired:

"In the March number of The Fruit-Grower you ask others for their experience with seedling peaches. We have grown Late Crawford peaches from seed for several generations, and the last generation has stood 22 below zero and borne a good crop. I also received a bunch of small seed-



Do You Want the Best?

IT IS THE

WHIRLWIND

We are the only manufacturers of Dust Spray Machines who have for several years used the dust spray exclusively in our orchard of 10,000 trees. Therefore, the information we can give you on the subject of dust spraying is from our actual experience as fruit-growers.

We have what the people want in a dust machine. The only up-to-date, latest improved, strong and simple of construction, complete and easy to operate. 90 per cent of the dust machines in use are the Whirlwind. We are headquarters for practical information on the dust spray. Our system is the only practical system. A satisfied customer is the best advertisement. Write us for catalogue and prices.

Anti-Pear Blight

We are agents for it—Write us for particulars. Address

The Kiser Whirlwind Duster Mfg. Co., STANBERRY, MISSOURI

BUY THE BEST

To Protect Orchards, Vineyards, Flowers, Potatoes. Cotton, Poultry, from Insects and Fungi.

The Best, Cheapest, Lightest and Easiest Operated Dust Sprayer on the market. Capacities 3 and 8½ quarts. Sells on sight. **Agents Wanted.** ($20.00 a week and expenses.) Address for testimonials, terms, etc.

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Strawberry Plants

Our trade has been unusually heavy, but we are still prepared to supply a general list of varieties. Plants were never finer.

Rush Orders Filled Promptly

At this season we make special preparations to fill orders immediately, so that if you send your order at once, the plants will arrive in a few days. Do not delay, but attend to this immediately. We will rush the plants as soon as order is received.

F. W. Dixon, Holton, Kan.

SALZER'S SEEDS Never Fail

600,000 planters scattered the world over are willing to say under oath that **Salzer's Earliest Vegetables** are from six to twenty days earlier than the earliest of their kind produced from other seedsmen's seeds. Why? Because for more than one-third of a century Salzer's Seeds have been bred up to earliness.

For 35c

1 big pkg.	Salzer's Scorcher Pea	10c
1 " "	Early Bird Radish	10c
1 " "	Salzer's Earliest Lettuce	10c
1 " "	Earliest Cucumber	10c
1 " "	Earliest Beans	10c
1 " "	4th of July Sweet Corn (Six days earlier than Peep O'Day)	10c
1 " "	Six Weeks Verbena	15c
	Total	75c

Above seven packages of earliest vegetable and flower novelties positively have no equal on earth for earliness. If you wish the earliest, finest vegetables for your home garden or for the market, Salzer's seeds will produce them every time. We mail you above seven big packages, together with our great plant and seed catalogue for **35c Stamps.**

FOR 16c. POSTPAID

We mail to you our big catalogue with sufficient seed of cabbage, celery, lettuce, onions, radishes and turnips to grow 900 luscious vegetables and a package containing 1000 kernels of beautiful flower seeds besides!

JOHN A. SALZER SEED CO., La Crosse, Wis.

THE $50,000,000 WORLD'S FAIR, ST. LOUIS 1904

BOUGHT BY THE CHICAGO HOUSE WRECKING CO. Millions of Dollars' worth of material will be placed on the market for quick sale by us at prices that will mean an enormous saving to purchasers. Now is your opportunity to put into execution your long contemplated improvements.

100,000,000 FEET OF HIGH GRADE LUMBER FOR SALE

The time to buy Lumber is today. Even if you do not need any Lumber today, it will pay you to purchase it now and store it for future use. It's better than money in the bank. Buy quick, because the price at which we will offer this material is bound to sell it as fast as we can make delivery. The finest grades of Lumber were used in the construction of this Grand Exposition. We have everything needed in the construction and furnishing of a building for any purpose.

SEND US YOUR LUMBER BILL FOR OUR ESTIMATE

YOU CAN SAVE FROM 30% TO 50% IF YOU BUY AT ONCE. This is your opportunity to build or improve your Home, Barn, Warehouse, Church, Elevator, Tool Shed, Granary and Crib, Store, School House, and in fact any kind of a building. We can furnish you anything in the line of Manufactured Articles, Roofing of all kinds, Wire Fencing, Pipe, Furniture and thousands of other items. **ASK FOR OUR SPECIAL CATALOGUE 399.**

CHICAGO HOUSE WRECKING CO., EXPOSITION GROUNDS, ST. LOUIS, MO.

SEED CORN

All the leading and best varieties of choice selected, thoroughly tested seed corn, which have yielded 75 to 215 bushels per acre. Costs Only 25c Per Acre for Seed. Large descriptive catalogue of Corn and all kinds of Farm and Garden Seed mailed free if you mention this paper. **IOWA SEED CO., DES MOINES, IOWA.**

lings, gratis, from Stark Bros. three years ago, and last summer one of them had about a dozen of as fine peaches as ever grew in Illinois; while such budded varieties as Heath Cling, Elberta and the Crawfords were nearly all killed. I am convinced that peaches become hardier if grown from seed for several generations. The Crawfords will often reproduce true to name, but occasionally there will be a tree that is worthless as to fruit, while others will be superior to the parent. Our experience is that fully one-half the seedlings will be as good and some superior to the parent tree. Heath Cling produces too many inferior trees from seed, while Salway, Crosby and Krummel seedlings are nearly all good and many better than the budded trees.

"JOSEPH GERARDI.

"Jerseyville, Ill."

The Fruit-Grower expects to have some special articles during the summer on increasing the fertility of the soil—or maintaining the fertility, if the soil is already fertile. As the first step in that direction, we will have some special articles in the May issue on the growing of leguminous crops, to add nitrogen to the soil. Nitrogen costs about 15 cents a pound, but $25 worth can be grown on an acre, if the right crops are planted. We want to tell about this in the May issue.

How to Grow Celery.

Either grow your own seedlings or buy plants to set. Work the ground fine to a depth of at least a foot a couple of times before plants are ready to set. Make an extra fine seedbed for two rows of celery. Mark off two rows ten inches apart. The best way to do that is with your feet; push them along in the dirt to a depth of two inches, allowing your weight to compact the soil under the plants. Set plants ten inches apart in each row. Work fine dirt with your fingers among the roots, leaving bed level when set. This puts the roots in the warm sunshine to grow. Do not dig a ditch to set plants in; they will not grow fast in the deep, cold ground. Next put a mulch three inches thick, compacted tightly, between the two rows. This way be a mixture of manure and straw. Leave this mulch during the season to hold dampness and to water plants in, if the season is very dry. It also saves half the cultivation and makes the plants grow vigorously. Do all the cultivation on the outside of each row. Planted in this way two rows are grown as easily as one. Simply cultivate as you would a cabbage plant till knee high before banking up. To hill up sooner retards growth. Or a few plants may be tiled or banked up for early use sooner than this.

To prepare celery for hilling, tie binder twine around each plant to keep out dirt and air from center. It will bleach better and handle better. In banking lean tops of each row together and both rows are banked as easily as one. Bank within six inches of the top. Make bank higher each week as celery may grow till danger of freezing. Then remove to cellar. Do this in this way: First dig down bank on outside of each row, then with a potato fork lift out each bunch, retaining as much good mellow dirt as possible. Remove to cellar carefully. If a very dry time, pour some water around each plant before lifting out, and dirt will stick better to roots.

Bank in the cellar as follows: Use no box, but set first bunch in the corner of the cellar against the cellar wall on the cellar floor. Press the roots of each bunch as close together as possible, filling in fine mellow dirt taken from the ridge at least two-thirds the height of the bunches. This dirt must be watered to dampen it thoroughly about every two weeks. Do not wet the tops when watering, as it will cause it to rot. Use a large funnel to conduct water. Make the dirt wet, not muddy. Pour the water principall y by the wall. Treated in this way each bunch will bleach white and force a growth in the center of each of the most crisp and delicious quality. It will be the voice of all who eat it, "I never atte such before." Be sure to keep it moist, be sure to keep it from freezing, and you will be sure of success. H. M. RANDEL.

Greencastle, Ind.

SOME TRUTHFUL STATEMENTS ABOUT

CREAM SEPARATOR AWARDS

The shouting of our "Would-be Competitor" reminds us of the old story of the running thief who, in his efforts to direct the attention from himself, cried louder than any one else, "Stop thief," but it will not work this time, for he is known too well in the Rogue's Gallery.

Our "Would-be Competitor" flatters himself that he is the "Only can on the ash heap," and we are perfectly willing to concede him that distinction, for that is appropriate to his station and methods, but when he claims to be the "Only pebble on the beach"—that is too clean for him, as there are other pebbles much cleaner and brighter.

Our "Would-be Competitor" is continually misrepresenting and bluffing, in order to detract attention from the merits of the case. We have repeatedly offered to forfeit large sums of money if our statements are not correct, provided they would give the same amounts if our statements are correct. We know that our statements are correct. We know that our "'Would-be Competitor" has continually made false claims.

We now offer the following amounts, to be given in premiums to any State Dairymen's Association if the following statements are not correct, provided our "Would-be Competitor" will give the same amounts if our statements are correct.

$5,000.00

That there was no test of cream separators made at the St. Louis Exposition. That the claimed awards on cream separators at the St. Louis Exposition are among some of the worst scandals at that Exposition, which is now becoming noted for its scandals and grafts.

$5,000.00

That in the four different months' scoring of Dairy Butter at the St. Louis Exposition, every highest score was given to the **United States Cream Separator Butter.**

$5,000.00

That the **United States Cream Separator** made the **world's record** for the most thorough separation of cream from milk in the Model Dairy at the Pan-American Exposition at Buffalo in 1901, beating our "would-be competitors" and every other Separator that dared to enter that contest.

$5,000.00

That the **United States Cream Separator** was awarded a Gold Medal at the Pan-American Exposition, 1901.

$5,000.00

That the **United States Cream Separator** was awarded a Gold Medal at the Paris Exposition in 1900.

$5,000.00

That our "Would-be Competitor" did not receive a Grand Prize or any other prize at the Paris Exposition, according to the official list. They have admitted this in the papers in days gone by, and have tried to palm off a fac-simile of a certificate awarded an insolvent concern which they got possession of by purchase or some other way, but this is too transparent deception for the public to swallow.

$5,000.00

That the **United States Cream Separator** received the Highest Award on Separators at the World's Fair, Chicago, in 1892.

$5,000.00

That the **United States Cream Separator** has whipped our "Would-be Competotor's" Separator at every International Exposition where both were exhibited and contests have been held.

$5,000.00

That many hundreds of prominent dairymen who formerly used our "Would-be Competitor's" Separators have discarded them for the **United States Separators.**

We quote from our "Would-be Competitor's" advertisement, and make the same offer:

"TO EVERY DAIRY FARMER

Furthermore, we pledge ourselves to present one of our latest $100 machines to every fair-minded dairy farmer, having use for a cream separator, to whom any one can show facts proving that the above statements are not absolute truth, and that any one has not viciously lied in ever asserting anything to the contrary."

THE VERMONT FARM MACHINE CO., BELLOWS FALLS, VT.

Distributing Warehouses at Chicago, Minneapolis, Omaha, aL Crosse, Wis., Sioux City, Ia., Kansas City, Mo., Salt Lake City, Utah, San Francisco, Cal., Portland, Orc., Buffalo, N. Y., Portland, Me., Montreal and Sherbrooke, Que., and Hamilton, Ont.

Address all Letters to Bellows Falls, Vermont

HARDIE Spray Pump

DO YOU WANT PERFECT FRUIT?

Fruit Trees properly sprayed pay bigger profits than anything else on the farm.

Write today for our free Book on Spraying, which gives all the newest and best formulas and tells how the successful fruit growers make big money.

HOOK-HARDIE CO
***107* Mechanic St. Hudson, Mich.**

A SPRING HOUSE FOR YOUR GALLERY

Made of Galvanized Steel

In winter a safe. In summer a refrigerator. Requires no ice. Thermometer stands 20 degrees below the atmosphere in hot weather.

Sold on trial and approval. No agents wanted. We sell direct from factory and save purchaser agent's profit. Write for catalogues and special introductory offer. Address

MILK COOLER AND STOVE FACTORY
Rogers, Bell County, Texas

THE PERFECTION SPRAYER

combines hand and horse power, and has both cart and barrel. It's simple, reliable, practical and durable. Sprays everything, trees, potato vines. Catalogue, telling how to spray and containing valuable formulas, free.

Thos. Peppler, box 85, Hightstown, N. J.

Reliable Commission Men

The firms whose addresses appear below are all members of the National League of Commission Merchants, which fact insures their reliability. They are in the business to stay, and will appreciate and satisfactorily care for business of Fruit-Grower readers.

COYNE BROS.,
160 S. Water Street, Chicago, Ill.
Fruits, Butter, Eggs, Poultry.

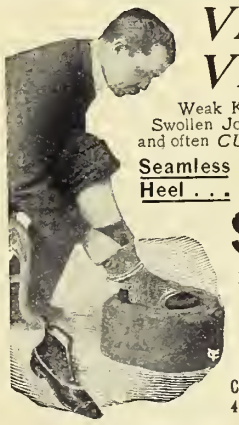
GEO. MIDDENDORF CO., Inc.
Chicago, Ill.
Apples, Fruits, Vegetables, Eggs, Butter and Poultry.

SEESSEL & ASHNER,
Memphis, Tenn.
Produce and Fruits.

VARICOSE VEINS,

Weak Knees, Weak Ankles and Swollen Joints are greatly relieved and often *CURED* by Our Patented

Seamless Heel . . . **Elastic Stockings.**



Made strictly to measure at about half usual prices.

MOST COMFORTABLE STOCKINGS MADE.

Don't Suffer, send for Prices & Self-Measuring Directions.

CURTIS & SPINDELL COMPANY,
4 Market St., Lynn, Mass.

Yours is the best fruit paper in the United States. — Paul J. Palmer, Onarga, Ill.

GUARANTEED PAINT 40¢ A GALLON

BUY DIRECT FROM THE MANUFACTURER—save both wholesaler's and retailer's profit. We manufacture and guarantee all our paints.

Note these Prices on **FRANK'S INDESTRUCTIBLE Red Barn Paint**

50c per gal. in 1-gal. cans.
45c per gal. in 5-gal. buckets.
40c per gal. in 30-gal. ½ bbls.

Order at once, sending Postal Money Order, bank draft or registered letter. If you wish to see shades first, send for color card. Barn paint guaranteed to be of best minerals, pure linseed oil and high grade Japan. Will last as long as wood to which it is applied. **MONEY BACK IF NOT SATISFACTORY.** We make and guarantee paints for all purposes—house, carriage, wagon, floor, etc., lower than anybody else. Send for sample shades.

Reference—Continental National Bank, Chicago. Capital, $3,000,000.

CROSBY, FRANK & CO., - - 264 S. Clinton St., CHICAGO

DON'T BUY A GASOLINE ENGINE FOR SPRAYING

or any other purpose, until you investigate

"The Master Workman"

a two-cylinder gasoline engine superior to all one-cylinder engines; revolutionizing gas power. Costs Less to Buy and Less to Run. Quickly, easily started. No vibration. Can be mounted on any wagon at small cost—portable, stationary or traction. Mention this paper. Send for Catalogue. **THE TEMPLE PUMP CO., Mfrs., Meagher & 15th Sts., Chicago.** THIS IS OUR 61ST YEAR.

Strawberry Notes from Maryland.

Years ago this was one of the largest strawberry growing sections in the world, hundreds of carloads being shipped annually from this state and Delaware to the northern markets. In those days Wilson's Albany was practically the only variety grown. It was a good one when rust did not destroy the foliage. However, that happened about one in every three seasons. Before North Carolina became our competitor with its fine late berries, the first few crates of ours brought wonderful prices; as high as 50c per quart being obtained, and often quite a lot would sell for 25c, but often times by the middle of the season the crop here would be large enough to overstock the market, so that we could not afford to ship at all. Along in the early 80's the old Crescent became about the only variety grown. We have thought that it was a misfortune to the strawberry world that it was ever introduced. Produces lots of berries (too many), but they were light colored and soft. I remember that one season my father, when I was quite a small boy, picked and shipped from two acres of Crescents, grown in stools, 9,000 quarts of berries and left, what was estimated by several people competent to do so, quite as many more, the price going too low to ship.

Crescent was then succeeded by Bubach, still a favorite, and justly so, but about that time competition became so keen from upper Delaware and New Jersey that the attention of growers here was turned almost exclusively to an early berry, and for years Michel's Early was grown very nearly altogether, to be succeeded only recently by Excelsior. This is the best extra early berry ever planted here. In 1901 from three-quarters of an acre of Excelsior we picked 4,200 quarts of merchantable berries. Many urge against it the fact that it is so sour, and certainly about that there can be no dispute.

I suppose that makes a difference to those who supply a retail trade direct. I don't blame any one who knows Excelsior to pass it by. If you try to eat one about the time it first turns red, you will surely incline to the opinion that nature created it for the express benefit of the sugar trust. We grow Exceisior because the Philadelphia and New York markets demand a berry that will ship well and hold its appearance well after it reaches market.

Among the late sorts Gandy is and has been since its introduction the leader here. Individual growers raise but few of them on account of not having enough to load a refrigerator car. But a firm of fertilizer dealers from the little city of Salisbury went into the strawberry speculative business a few years ago and made contracts with farmers all up and down our line of railroad to grow them Gandy strawberries at 3½c per quart, the buyer to furnish crates and baskets, plants and 800 pounds of fertilizer per acre, the grower agreeing to do all the work and deliver the berries at the car. These people had to have 50 acres pledged at every railroad station before they would let any contracts. These berries were all loaded in refrigerator cars and shipped to about every available distributing point in the east, quite a lot being sold on the track to city buyers. In 1902 both grower and buyer did well, but since that time unfavorable weather conditions at ripening time have cut the yield and make the quality so inferior that shipper lost money. Considerable trouble has been experienced by the dishonesty of the growers; the boxes wou'd be found not more than two-thirds full; the picking wou'd be done in the most careless manner; crates would be taken for more berries than the grower could reasonably expect to have, and return no more; a part of the crop would be hauled to another station and shipped when the price was up; and the berries from other patches would be smuggled in among the Gandies when the price was down. So that we doubt that this method of handling strawberries can be long continued.

A good many years back what of our crop would not pay to ship was a total loss, but for a number of years now there has always been a market at the railroad station for berries capped ready to can. To the uninitiated the capping no doubt looks like a big proposition, but we always get the pickers to do it for 2c per quart. They receive 1½c here for picking them with stems. While perhaps they do not make quite so much capping, yet a good picker will easily cap ten quarts per hour in good berries. Most of them use both hands, seizing the berry between the thumb and first finger of the left and the cap between the thumb and first finger of the right hand—a deft little twist and the berry is ready to put in the box. There is a great difference in varieties as to how easily the cap may be removed. Brandywine is a good one; so is Haverland, Tennessee and Bubach. Parson's Beauty, a berry local to this vicinity, is perhaps one of the best that can be planted for this purpose. In 1903 we capped and sold at depot 16,000 quarts after we had stopped shipping, receiving therefor 5c per quart, crates and baskets returned.

The local canners used to buy pretty nearly all the capped stock, paying from 3½ to 5c, according to market conditions, but for three or four years past preserving companies from Boston have sent down representatives and bought a great many capped berries. They would ship down a carload of whisky barrels (the first useful purpose they have ever served), fill them with capped berries, pouring into each two or three gallons of fruit preservaline, and sealing airtight. I am told that berries can be thus kept for ten days or more and then come out fresh and nice. As the freight charges on stock in that shape are minimum, one can easily see what a great saving the preserving people effect over buying on the market, paying ¾ or 1c per quart to have the caps removed and standing the great loss in measure and in the quality of the fruit. A large land owner near here made a contract with a firm of this sort in the spring of 1903 to plant enough strawberries to furnish 75,000 quarts of capped berries, the buyer agreeing to take up to 100,000 if so many as that were grown. The variety selected was Tennessee Prolific, on account of its firmness and good color. These berries were delivered in 1904 and the arrangement proved satisfactory in every way. An average crop of 3,000 quarts to the acre being sustained. I forgot to add that Sen. Dunlap is one of the most popular varieties among the canners.

We believe that it is possible to develop this phase of the strawberry business in every section where they are grown on a large scale, and that it will act beneficially to the interests of the grower over and above what he may receive for the berries actually delivered. First it will eventually destroy to a considerable extent the market for common fruit, in-

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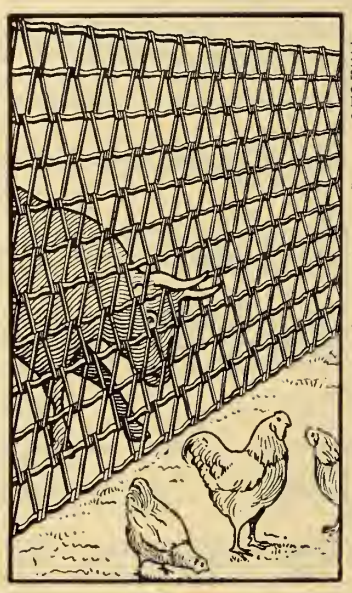

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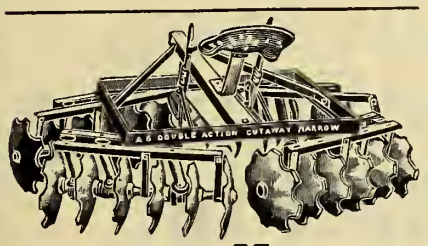

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asmuch as the canners use about all of that grade that there is shipped, paying just enough to keep the grower shipping; and secondly, by making a market at home it will keep the grower from wanting to ship his common fruit, and will thus cause the best grade to sell for a higher price.

The berry business here is not now so extensive as it was a few years back, owing partly to the fact that it is pretty nearly impossible to get sufficient help to properly cultivate a field of any size; and perhaps more to the fact that the early trucking business has been greatly developed here of late years. To plant a crop in the spring and harvest it in midsummer or earlier is a much quicker return for money and labor than can be made from strawberries. Great quantities of cantaloupes, snap and lima beans, corn, early potatoes, early peas, cabbage, onions and garden truck of every description is shipped annually by the carload from throughout this peninsula. Sometimes it pays well and sometimes it fails altogether, as it did last year. However, the berry crop was a failure also, on account of the extremely dry weather at picking time and the unusually cold weather of last winter while the ground was perfectly bare.

This constant freezing and thawing so greatly injured the vines that they would not have made an average crop with most favorable weather conditions at picking time. From eleven acres we did not receive more than enough in net returns to pay for the labor which had been expended on them the previous summer. We sincerely hope our western brethren may not have such a tale of woe as this to unfold.

ROSCOE JONES.

Allen, Md.

How to Grow a Big Crop of Strawberries.

To grow a big crop of strawberries I select a fine sandy loam soil. The previous year I grew a hoed crop on it, so as to kill all weeds. In the fall I put on a heavy coat of well-rotted manure, free from grub-worms, and turn it under deep, so the freezing will kill all grub-worms which may be in the soil. In the spring I plow it up again and harrow it well, so the manure will get well mixed through the soil. When the ground is well harrowed and level I set the strawberries in rows 3½ feet apart and 18 inches apart in the row, and start the cultivator at once. When plants begin to start I let each plant start two runers, and let them catch in the row about eight inches each way from the main plant, which is called the single hedge row, and keep off all other runners, and plow once a week all season till September, and then hold up a little, as high culture in the fall often causes plants to bloom in the fall and cuts the crop short.

As to varieties, I prefer Haverland and Brandywine, as Brandywine will pollenize the Haverland and makes a long fruiting season. I spray with Bordeaux mixture at least five times during the first season they are set to keep off rust, and three times the next season. First, as they are coming through the straw and second time when in bloom, and third time when bloom has fallen. I use straw to mulch with, and put it four inches deep in the alleys and just enough on the row that you can see a leaf peeping through now and then. With this method plants set in 1903 and which were a poor stand on account of drouth brought in 1904 at the rate of $500 per acre. I got $1.75 per crate of six gallons. I never let a bed fruit over two years. I set a bed every other year in the spring. I have grown berries so large that two would fill a tumbler.

O. B. WILLIAMS.

R. F. D. No. 5, Tuscola, Ill.

More About Blueberries.

I wish to contribute a short article on blueberries and the handling of them as I have found them in the north and in our climate here. First, they are at home here and in Minnesota and Wisconsin. They thrive in a wild state and are burned off every two or three years. I have some growing and am selecting special strong growing productive bushes and hope to produce something somewhat better than those in a wild state. Since writing the small article in the March number I have received a number of inquiries tbout them.

My method is to have at least two plots and to burn them alternate years and to not cultivate them, but to mulch with leaves or any kind of old straw. They delight in a sandy, gravelly or rocky soil which is well-drained. Any old waste piece of land too rocky for anything else I should think would be a good location; even mountain or steep hillsides. I have seen them grow and flourish in Minnesota, Wisconsin and Arkansas where nothing else would grow. There are marketed thousands of gallons annually here in our local market. My experience is limited and I want to hear from others, but this is mostly written from my observation in Minnesota, Wisconsin and Arkansas; principally in the former; but when I came here I saw them growing so luxuriantly that I at once thought that it would be of great interest to many, so I at once began to try my ideas, and have so far met up with some successes, and hope to do even better, and report it in The Fruit-Grower. If any one has any experience in blueberries, let's hear from them. During the fruiting season I will mail a small box of the fruit to any who send me postage for same.

Mena, Ark. H. O. LANE.

It Pays to Advertise in The Fruit-Grower.

H. A. Halbert, Coleman, Texas, advertised watermellon seeds in The Fruit-Grower, and says: "Your paper seems to pay about the best."

Capps Bros., Mt. Pulaski, Ill., write: "Our little advertisement in The Fruit-Grower brought inquiries from all sections, some as far away as Buda Pest, Hungary."

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JONATHAN STEARNS.

P. S.—You are at liberty to publish this if it will be of any use to you, as I feel it is due to you for the benefit I have received. J. S.

There is no need of the knife or burning plaster, no need of pain or disfigurement, the Combination Oil Cure for cancers is soothing and balmy, safe and sure. Write for free book to Home Office, Dr. D. M. Bye Co., Drawer 505. Dept. 65, Indianapolis, Ind.

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The Strawberry Industry

A paper read before the University Science Club, University of Arkausas, by Geo. A. Cole, agriculturfist.

History of the Plant.

The strawberry belongs to the same family as the rose ((Fragaria). Its botanical name is fragaria, from the aLtin word fragro, which translated into English means to smell sweetly. The origin of the great number of varieties that are now cultivated in Europe and the United States can be traced to five distinct species, viz:

1. Fragaria Vesca or "Alpine."
2. Fragaria Elatior or ..Hautbois."
3. Fragaria Indica or "Indian."
4. Fragaria Chiniensis or "Chilian."
5. Fragaria Virginiana or "Virginian."

The origin of the common name "strawberry" is obscure. One authority tells us that the name was given from the strawlike runners of this plant, or from the berries strewn upon the ground. Again tradition tells us that in the olden times children strung the berries on straws for sale, hence the name. Another authority asserts, "It is an old English practice to lay straw between the rows to preserve the fruit from rotting on the wet ground, from which custom the name is supposed to be derived." However, it may be the name originated from the wandering habit of the plant, straw being a corruption of the Anglo-Saxon strae, from which we have the English verb stray, says another author.

In whatever way the fruit and plant received the name matters little, but there is one fact of unquestioned authority, there is not on record in the annals of the past the least intimation of a single member of the University Science Club refusing the fruit on the ground of this obscurity and doubt as to how it received its name.

It is not my purpose to speak at length concerning three of the species enumerated above, viz: the vesca or Alpine, the Indica or Indian and the Hautbois or German, inasmuch as the improved varieties are not descendants of these, but of the other two species, the Virginiana or Virginian and the Chiliensis or Chilian.

The fragaria veseca or "Alpine" strawberry is the first on record. It is the strawberry of the ansients. I am not sure but that Adam's fall was caused by this strawberry rather than an apple. It is the "Alpine" that Virgil knew when he wrote the following lines:

"Ye boys that gather flowers and strawberries,
Lo hid within the grass an adder lies."

This species grows wild throughout northern and central Europe. In America it is found in all the mountain regions from the northren Atlantic to the Pacific.

The "wood strawberry" of England is a variety of the "Alpine," the only difference being in the shape of the fruit. The "wood" is round, while the "Alpine" is conical.

One of the earliest pastimes of the English people was to go "a-strawberrying." In the "Fairy Queen" we find these lines:

"One day as they all three together went
To the green wood to gather strawberries,
There chanst to them a dangerous accident."

Shakespeare alludes to the strawberry in the play of "Henry V." An earlier bishop of Ely says, "The strawberry grows underneath the nettle, and wholesome berries thrive and ripen best neighbored by fruit of baser quality."

The Alpine and the wood strawberries tend to reproduce themselves with such unvarying exactness that they remain about what they were centuries ago. Cultivation does not change them.

In connection with the white and red wood strawberries and Alpine strawberries, the Elatior or "Hautbois" is mentioned in the year 1623. This latter species is native of Germany and does not differ materially from the "Alpine" in its tenacity to hold on to its "old self." It, like the others mentioned, is incapable of being improved by the best cultivation, nor do the seedlings from it vary from the parent. Cross-fertilization would doubtless effect a change and thereby give us a hardy if not a prolific variety.

The horticulturist is at the end of his row to improve a species when it fails to vary from the original. It is his province to assist nature in causing the "fittest to survive."

The fragaria Indica is a native of northern India. It has a yellow bloom and makes a very excellent plant for window baskets. The fruit is dry and tasteless. The fragaria Chiliensis, the fourth of the species named, grows wild on the Pacific slope from Oregon to Chili. It is the favorite stock of the European gardeners. The varieties evoluted from this species are not so hardy as from the Virginiana. The mild climate of France and England, and the intensive culture practiced by the gardeners of those countries, causes the Chiliensis and its varieties to respond most bountifully. It is asserted by a well-known writer on horticulture that ninety-nine hundredths of the strawberries of commerce are from the two species, the Virginiana and Chiliensis.

It is said that the law of race extends to strawberry plants. As in the most refined and cultivated peoples there is a strain of the old native stock, which ever remains a source of weakness or strength, so the new varieties indicate in the ordinary rough and tumble of field culture, as practiced in this locality, whether they have derived their life from the hardy F. Virginiana or the tender and fastidious F. Chiliensis. A variety from the former adapts itself to conditions extremely varied; while a variety from the latter needs all the care of an expert gardener to make it remunerative.

The fifth and last great species is the fragaria Virginiana. It is found growing wild from the Arctic regions of North America to Florida and westward to the Rocky mountains, following the mountain section of the territory named. It is the berry of my childhood, and in its wild state is more highly flavored than its cultivated varieties. In the meadows and old pasture fields of the eastern states it is found in the greatest abundance. Nine-tenths of the commercial varieties of the United States have their origin from the Virginiana.

The capacity of the Virginiana strawberry for improvement is shown by the production of the older but excellent varieties, such as Hovey's Seedling, Wilson's Seedling, Monarch of the West, Charles Downing and Sharpless. In our own time the Early Michel, the Crescent and Lady Thompson exemplify its usefulness as a stock from which to evolve commercial varieties. To give the names of all the descendants of the Virginiana would weary your patience and consume too much space.

We will now proceed to sketch the history of its cultivation in the United States and Europe. From reliable records we find that the English and French gardeners cultivated the strawberry as far back as the fifteenth century. As there were plenty of wild strawberries of good size, and of the very finest flavor, along the Atlantic slope, it was not necessary for the early settlers to cultivate them. But as towns and cities grew up these furnished a market for more than nature unassisted could supply. Hence the farseeing gardener transplanted the wild Virginiana into his grounds. As close cultivation made larger berries, and as larger berries commanded higher prices, it was a short step of reason to demand the best and biggest berry. The business of raising strawberries for the market first started with the gardeners around New York, Washington, Norfolk, Richmond and other coast cities and towns of the eastern states.

The cities of New York and Washington demanded berries before they ripened in their own gardens, hence the business of raising the berry farther south became more remunerative about Norfolk and Portsmouth than farther north. It was at these places that the garden-patch grew into one, two and three-acre patches, and finally into hundred-acre fields of strawberries. Here the berry raiser worked out the modern methods used in field culture, shipping, etc.

The strawberry raising of southwest Missouri and northwest Arkansas is of more recent date. I am not informed as to the time it was introduced into Missouri. The industry of berry-raising began in northwest Arkansas in this manner: About fourteen years ago a few citizens of Springdale planted small patches in their gardens for home use. They were not long in finding out that the soil and climate of Washington county

Strawberries

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Bred to bear. And they are dug so all the tiny roots are preserved. Wrapped and packed so their freshness delights you when you open them up. Nearly Ten Million Plants this Spring.

Over Sixty Varieties,

Bubach, Brandywine, Bismarck, Crescent, Excelsior, Gandy, Haverland, Louis Huboch, Mark Hanna, Michell's Early, Parsons, Sharpless, Tennessee, Warfield, etc. All the favorites, and sure of the varieties you buy. Get some of Harrison Quality Plants this Spring. It will pay. Catalogue and Strawberry List free.

HARRISON'S NURSERIES, Box 32, BERLIN, MARYLAND.

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Why Don't You Save Your Money

By buying your packages in the flat and making them up on the

ADVANCE FootStapling Machine

For the manufacture of Hallock and Leslie boxes, one and four-quart baskets, also other fruit packages. We guarantee our machines against faulty material and workmanship. and that they will give entire satisfaction.

SARANAC MACHINE CO.

400 Advance Avenue,
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100,000 Fruit and Shade Trees

My stock is carefully grown and will be carefully dug. Apple, Pear, Cherry and Peach a specialty. 200,000 Gladioli Bulbs—Cowee's World's Fair strain.

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SEED CORN

Our Seed Corn is High Grade, was grown for Seed, well cured and had good care. Will give good results. **Write for Prices.**

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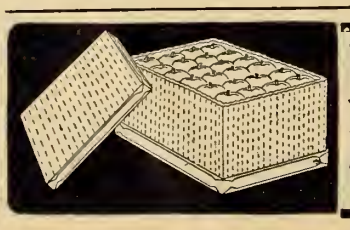

FERRES FRUIT BOX

Is cheaper, lighter, stronger and better looking than wooden boxes.

The saving made on express shipments on account of less weight will more than pay for the boxes.

Write us for circulars and prices, also state the kind and quantity of fruit you ship.

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was admirably adapted to this business. These Springfield people extended their garden plots to a few acres and commenced to ship by express to Springfield and Kansas City. It took only two or three crops to demonstrated that express charges, drayage and commission (and I might add stealage) absorbed the profits. My experience on a half-acre plot gave me a bank account of eight cents after settling the expenses.

The berry raisers were discouraged and many gave up in disgust. Mr. W. G. Vincenheller is to be given the honor of solving the problem. A meeting was called and the following energetic fruit men met in Mr. V.'s office: Mr. John Gill, Mr. I. D. Rader, Wm. Byrd, Al Reed, Jarvis Reed, Rev. Umbaugh and W. G. Vincenheller. After some deliberation the "Springdale Fruit and Berry Association" was organized. On the advice of Mr. Vincenheller the association planted a sufficient acreage to be able to ship in carload lots. This plan proved a success. Other associations were organized on the same plan, and Washington and Benton counties have become the greatest fruit section in the state of Arkansas.

It is not foreign to my subject to mention that this Springdale Association, made up of honest, energetic men, and the personal influence of Mr. Vincenheller, not only encouraged the raising of small fruits, but gave an impetus to apple-growing by holding an annual fair at which were displayed the beautiful specimens that were produced in the Ozark region. All the adjoining counties came with their plates contending for the prizes offered. Allow me to say in passing that no other man in the state of Arkansas has done as much toward creating and keeping up an interest in fruit-raising, both north and south of the Boston mountains, as Col. W. G. Vincenheller.

The number of acres of strawberries in Washington and Benton counties aggregates 6,000. As a rule, a strawberry patch will produce three good crops, and there are cases where five have been gathered, but this is bad practice. After the third crop has been gathered the ground should be turned and sown to peas.

One, going into the business of raising strawberries, cannot be too solicitous about the location for the farm. There are a number of things that will assist him to determine the best location. In the first place, it would be folly to begin without knowing definitely about his markets. If the markets are beyond the reach of transportation, the good land and proper climatic conditions are useless for his business.

Again, he should determine which branch of the business he expects to pursue. If his idea is to raise "extra fancy" he will be compelled to seek his location near a large city, and then he can afford to raise "extra fancy," for he will be able to command the "extra fancy" price. Otherwise he will not have the time and money to spend that is necessary to produce the article. He must manage to intensify his work so that his profits will be co-extensive with the outlay that he makes for high-priced land and expert labor.

On the other hand, if his mind is made up to follow ordinary field culture he must seek cheap land on or near a railroad leading to good markets—and good markets for strawberries field-grown are to be found in the latitude farther north than the one in which they are raised. I have never seen a carload of strawberries going south!

The man of family will pay due attention to the healthfulness of the section in which he locates for any business. No man wants to take his family into an unhealthy region, however promising the financial side. Life is too short for us to locate in an unsuitable section. As a rule, a medium temperature is best for both strawberries and family. The strawberry does best in mountainous or hillside countries. If you get too far north your berry plants are damaged by the cold; if too far south they burn out in summer. For the above reasons the Ozarks, and especially the lands in southwest Missouri and northwest Arkansas furnish every inducement to fruit-raisers as a location for field culture. There is very little land in this section that will not produce berries. The best lands, however, are the well-drained hillsides. And for strawberries I should select the southern slopes.

The rich river bottoms of Arkansas are not adapted to fruit-raising. The rocky hillsides produce the finest and cleanest berries.

No attempt has been made to mulch the fields. Some discontinue the cultivation early in the summer and allow grass to grow among the plants. This gives winter protection and spring mulch.

Nearness to a shipping point should not be overlooked in selecting your land for strawberry-raising, as the berry is damaged by hauling long distances in farm wagons. The maximum distance should not exceed three miles from the shipping point.

There are soils adapted to different varieties. The garden varieties do best in sandy loam and highly fertilized lands. I have found gravelly loam on a south hillside very productive for the commercial varieties, Early Michel, Crescent and Lady Thompson. I predict they would be more productive planted in sandy loam underlaid with clay—but less productive in very rich, deep soil. They would tend to make too much vine or foliage where soil is deep and fertile.

The soil should be well supplied with potash and lime. For this reason I believe the limestone ridges about Johnson, Ark., have proven to be the most productive berry lands in Washington county. By placing early kinds on southern slopes, and giving late varieties moist, heavy lands and cool northern exposure the season of this delicious fruit can be extended several days.

For example, my berries are on a warm sunny slope, and a neighbor has his on a northern hillside. The same quality of soil and like varieties are used. I usually ship a week earlier and he continues a week later. Experience will greatly assist you in determining the best variety to be used by you on a given soil in order to get the most berries for shipment. It is at this point that the horticulturists and our experiment stations should relieve the farmers of the strawberry section. A considerable loss in time and money result from the fruit-grower not being able to determine the variety to be used on his soil. Hence he proceeds in a very haphazard way planting the varieties that his neighbor has, although his land is quite different in physical and chemical composition.

As I have already intimated, there are varieties that will do well in the hands of gardeners, which used in field culture would be a complete failure. All fruit-growers from the east agree that there is but one perfect strawberry, and that is the little wild, highly flavored berry of their boyhood days and found in abundance in the Atlantic states, the wild Virginiana. While we eat the garden varieties, larger but lacking in flavor, and relish them for their sub-acids, yet we sigh for those little wild berries that grew in some sunny meadow or on some far off hillside in years long since gone by.

The Crystal City more nearly approaches the wild, and should be in every home garden, not only for its earliness and productiveness, but it more nearly approaches the wild Virginiana in its delicious flavor than any other cultivated variety with which I am acquainted.

The Early Michel has proved itself a good shipper in this section, and the plants stood the severe drouth of four years ago better than any variety I had on my farm.

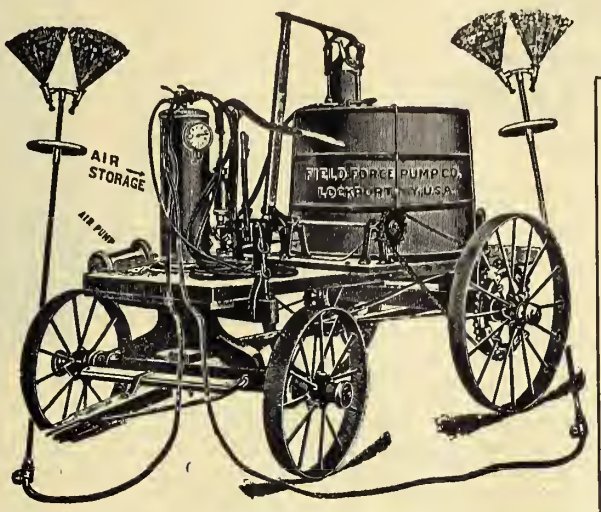
For commercial purposes the Early Michel, Crescent and Lady Thompson make an excellent combination. I doubt very much if the berry raisers of northwest Arkansas can do better with any other three varieties. In this section the plants should be set as early in spring as the conditions will permit, say in March, and continuous cultivation followed until there is a "matted" row. As to the methods of preparing the land, how to plant and cultivate, the best methods used in gathering and marketing, I will leave for another paper.

Some one has aptly said that the strawberry is like heaven, universally desired but most generally neglected. Mr. Darwin, the great scientist, died before he fully established his "evolution theory," as he was unable to find the "missing link." Had he lived till this good day, I should tell him that the man, woman or child who would not relish a dish of Early Michel berries, powdered with sugar and saturated with Jersey cream, is the long-sought-for animal. It would take many cycles to "evolute" such an one if found. But in the main I believe Americans are advancing along the line of reducing their rations of fried pork and cabbage to one at least supplemented by "the small fruits that made their escape from Eden's bower." And methinks I hear the response of every member of this club, "So mote it be."

Missouri Valley Seed Store

ESTABLISHED 1870.

110 SOUTH FOURTH ST. ST. JOSEPH, MO.



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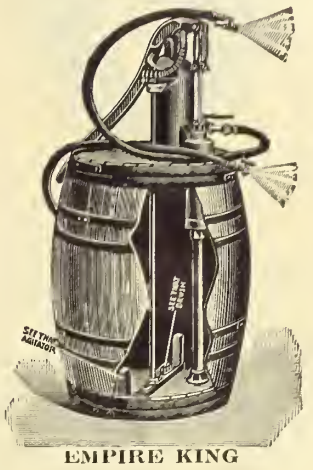
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Western Distributors for

DISPARENE The best insecticide ever used; a sure exterminator of Codling Moth, Canker Worm, and all biting insects. General agents for *Messick's Tree Fertilizers.* Seeds of every description, Poultry Supplies, etc. Send for a catalogue, and mention The Western Fruit-Grower.

Missouri Valley Seed Store 110 SOUTH FOURTH ST. St. Joseph, Missouri

Orchard Men—Take Notice

NO LONGER AT QUINCY, ILL.

Now at Missouri Valley Seed Store, St. Joseph, Missouri

H. L. Messick, the noted practical orchard authority and inventor of the celebrated Messick Tree Fertilizers, will hereafter manufacture these fertilizers personally, and offer them to his old customers and to new ones, who are invited to order these fertilizers through the Missouri Valley Seed Store, St. Joseph, Mo. Mr. Messick manufactures the only special fertilizers in the United States that replaces the exhausted elements for the Apple, Peach and Pear. A sample of your orchard soil sent us will enable us to supply every lacking element in your soil.

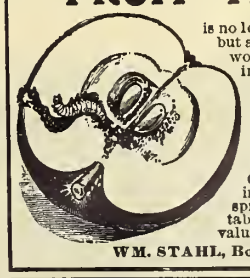
Our Liquid Fertilizer prevents sunscald, borers and the breeding of insects. Address as below.

H. L. MESSICK

110 South Fourth St., St. Joseph, Mo.
Care Missouri Valley Seed Store.

No Fertilizer made by the inventor, except this photo appears on tag or label.

SPRAYING FRUIT TREES



is no longer an experiment, but a necessity. Prevents wormy fruit by destroying all insect pests and fungus diseases. Every farmer, gardener, fruit or flower grower should write for my free catalogue, describing 21 styles of Spraying Outfits, and containing a full treatise on spraying fruit and vegetable crops, and much valuable information.

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Acme Bail Churn $2.50

The cleanest, quickest and most satisfactory churn on the market today. FASTENERS ARE ALL ON THE OUTSIDE. NO LEAKAGE. Can furnish them in six sizes—5 gallon churn for 1 or 2 gallons of cream, $2.50. We are headquarters for churns, cream separators, milk cans, washing machines, and all kinds of house hold and kitchen specialties. SEND FOR FREE CATALOGUE. Prices right for good goods.

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Warehouse also in Chicago.

Making Fruit Baskets by the Million

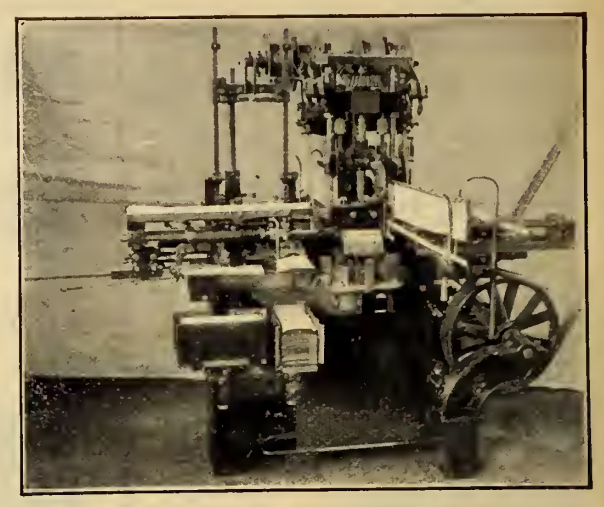
By Ernest C. Rolfe

Emmet Horton, Inventor of the Machine.

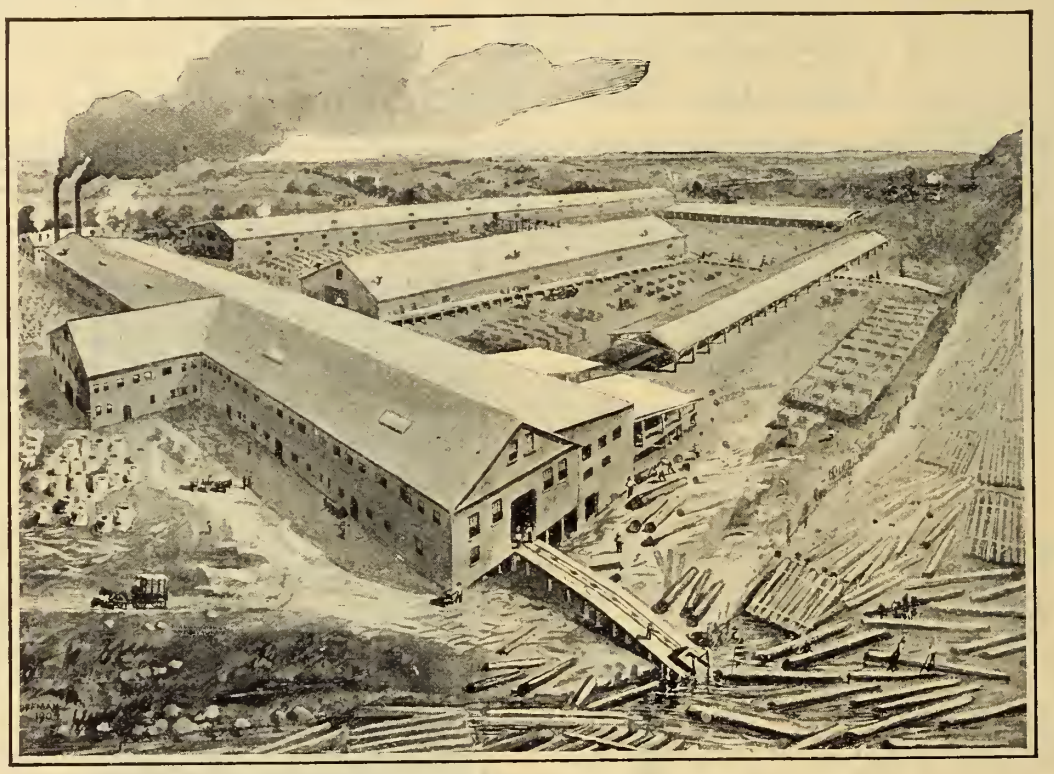
Paducah, Ky., Feb. 23d, 1905.

One of the most marvelous mechanical inventions of this age of wonders in human achievement is the basket-making machine invented by Emmet Horton, of Elmira, N. Y. The machine makes thirty-two complete and absolutely perfect berry baskets in a minute, or forty thousand baskets in a day of twenty-four hours, allowing for stops, for minor accidents, and shifts of help. Aside from being a remarkable piece of practical mechanism itself, it has already brought into being many entirely new conditions in the culture and shipping of fruits and vegetables, not only throughout the South, but throughout the North and the Pacific States, and will rapidly revolutionize all ramifications of the industry. One is quite on the safe side of truth in saying there is no industry so subject to hitherto unavoidable vicissitudes as the growth and marketing of fruit. It has had to run the gauntlet of all kinds of weather and great variation in the prices to be obtained for the ripened product, and at the same time the grower is always hampered by his inability to secure shipping packages when he needs them most. It is roughly estimated that last season three million quarts of strawberries rotted on the vines because the grower could not procure baskets at any price to move the berries to market; and during this same period, within the confines of the State of Georgia, fully enough peaches for ten million baskets never reached market for the same invidious reason. The inadequacy of basket supply does not at all suggest inability of the growers to secure labor. Labor is willing, cheap, and as plentiful as the berries or the vines, and not a few cases are reported where adult pickers were employed by generous growers when the latter knew the fruit would be left in the sorting shed. Heretofore the crux of the whole situation has been the uncertainty of supply of and demand for the ripened product, and, recognizing only a sub-normal volume of demand, the basket makers have curbed their output of baskets to avoid overstocking and possible loss. The hand-basket people explain that the net margin of product is exceedingly small, labor being the piece de resistance, and not raw material, and they cannot afford to manufacture in the slack season for a possible consumption of three or four months away.

The Horton machine makes twelve perfect baskets while the hand worker is making one, at from one-eighth to one-twelfth the cost. Hence the vista of possibilities within this machine's path to change the economy of basket making and fruit-raising is very alluring alike to the owners of the patents, the local basket dealers, and the raisers of fruits and vegetables. The enormous labor-saving made possible by the Mergenthaler-Horton machine permits, in fact urges, and will eventually force, the owners of small factories to suspend all manufacturing, and either go out of business or depend upon the Mergenthaler-Horton Basket Machine Company for their supply of baskets. Indeed, many — very many — hand-machine people are already doing just this thing, having been furnished unmistakable demonstration that machine-made baskets can be sold to them for a price far lower than they themselves could make them. The Mergenthaler-Horton people can sell the small dealer for one-half the cost of his own slowly-made baskets and still make a profit of anywhere from one hundred to five hundred per cent. And, as a further argument, Mr. Small Dealer can buy a better basket—better, mind you, in every way—made by the Horton machine than he can possibly produce in his own factory; it is whiter, it is smoother, it is absolutely uniform—hand-made are not—and it is without even a suspicion of odor. The machine-made basket is produced from lumber of the gum-tree, whose fibre, odorless and very white, is quite unsuited to the hand-machine, having a tendency to crimp and split, undergoing the slower process. The hand-labor people usually use yellow pine or hemlock for their baskets, but either wood gives off a pungent odor, usually slightly tainting the berries where the crates are long in transit to the markets of the North. The writer recently spent a day in the factory of the owners of the Horton patents, the Mergenthaler-Horton Basket Machine Company, at Paducah, Ky. The factory is a huge one, and contains a maze of ponderous machinery which converts a log of gum-wood into thirty odd thousand paskets while you wait.



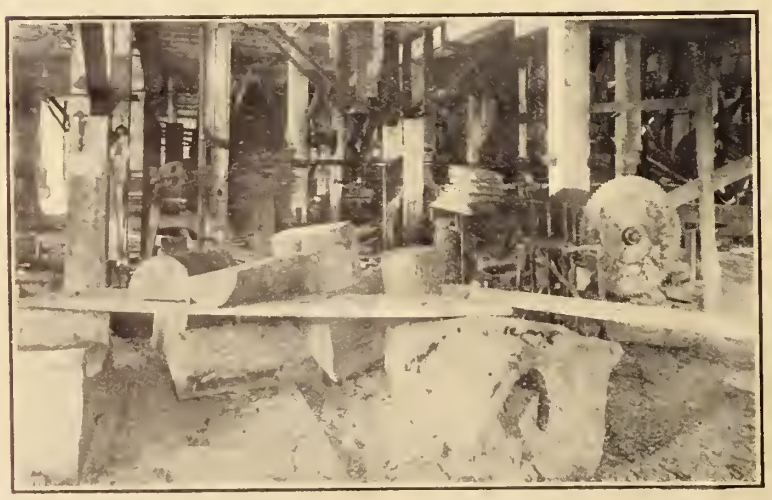
Emmet Horton's Latest Inventon, which makes Thirty-Two Baskets a Minute, sa d to be the Most Perfect Automatic Machine in the World.



GENERAL PLANT OF THE MERGENTHALER- HORTON BASKET CO., AT PADUCAH, KY.

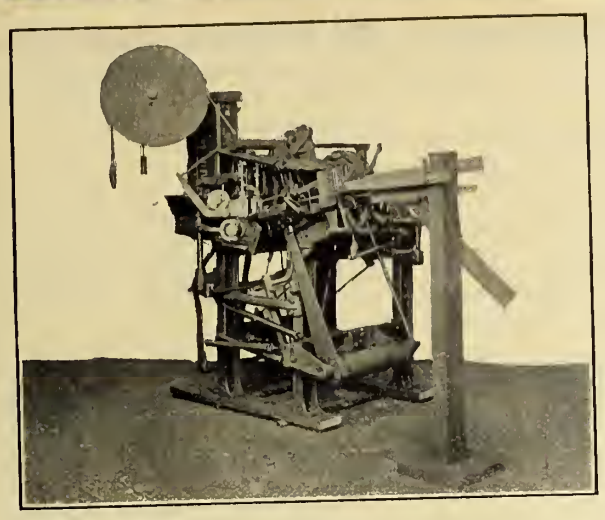
FIRST OPERATION IN BASKET-MAKING — SAWING LOGS INTO FOUR-FOOT LENGTHS.

The factory is immediately at the edge of the broad Tennessee river and about three-quarters of a mile from the Ohio river, where the Tennessee joins it. Logs are floated down the Tennessee by the lumbermen and sold to the factory people as they lie in the water. Once a log is out of the river its evolution is rapid. It is first sawed into four-foot lengths, and these are automatically fed into cavernous vats, where they are steamed and boiled for a day and a night. After the bath of steam the logs are rapidly revolved in front of veneer machines, which cut off long strips of steaming veneer a sixteenth of an inch in thickness, or thinner if desired, and the machine attendants draw the veneer in folds across tables until forty o r fiftv thicknesses are in layer. This operation reminds one of the cutting-room in a clothing factory, where the cloth is unrolled from huge spools and spread layer upon laver till the pile reaches many inches thick and is ready for the cutters' knives. The wooden veneer is now ready for the various knife machines which shave off strips and binders, while other unique machines stamp out the sides and bottoms, different in shape and size, according to whether they go into peach or berry baskets. All these operations are merely initial and preparatory to the final and most interesting one of really making the automatic machine basket, although all the twenty odd stages in the evolution of the log into the finished basket are interesting and intricate in the extreme. A Horton berry basket machine requires two different sized pieces of wood or two each of the same size, two bottoms which, crossing, will make the sides and two "binders" for outside and inside, and two spools of wire for staples. A girl feeds the machine, and she must work fast, for its appetite is quite ravenous, and between feeding and removing the finished baskets the attendant doesn't have much time for conversation. Indeed, the latter would be impossible, for the noise of a room full of automatic machines is deafening, and the vibration so great that the writer's camera could not get a perfect picture when the machines were in motion. Unl ke a human being,



BUSY WORK-ROOM IN THE FACTORY.

VENEER MACHINES AT WORK.



OTTMAR MERGENTHALER'S AUTOMATIC BASKET-MAKING MACHINE, COMPLETED JUST BEFORE HIS DEATH.

Mr. Horton's Frankenstein machine seldom makes a mistake; but when occasionally a piece of wood goes wrong the whirring machine obeys the touch of the girl's hand, instantly stopping, and automatically ejecting the offending piece, goes on again in obedience to the will of its master.

In this Paducah factory all employes are encouraged to suggest any improvement that tends to lessen the cost of production and operation. To one of the operatives is accorded the following idea: At present the baskets are removed from the machines to the drying-room on trucks holding 1,000 baskets, but not until nested. In the usual process twenty-four hours are lost in drying and bleaching. It was found that baskets piled individually in the hot rooms dried in about thirty minutes. It was also found that the item of removing the baskets on trucks to the kilns was not an insignificant one. The bright employe suggested rigging a belt under the Horton machines which would carry automatically the baskets as they drop from the machines into the kiln, piling them unnested indiscriminately therein. The factory's superintendent worked out the idea and within a month the new carriers will be working. As every item of operation is figured to a nicety, I was able to learn that the present method costs fourteen cents per thousand for removing and drying as against three-quarters of a cent with the new method.

Emmet Horton, now a man well along in life, has worked the best of his years in making automatic basket machinery, and the machines now installed in the Mergenthaler-Horton plant are the crowning evidences of his wonderful skill and persistency. The illustration on page 20 shows Mr. Horton's very latest effort in mechanical perfection, and he says, and almost with regret, that it cannot be made more perfect. The first machines installed in the Paducah factory were entirely different in form and operation and could produce but twelve baskets a minute, as against thirty-two a minute of the present machines. The writer remembers seeing two of Mr. Horton's first machines on exhibition in a store on Broadway, New York, three years ago, Thousands upon thousands of men and women saw with wondering eyes this then marvel of mechanism. They would doubly marvel were they to see the present machine turn out nearly three times as many baskets in the same time limit.

The logs are first boiled and steamer to make the fibre pliable and cohesive, and so rapid is the process of manufacture that when the crated baskets are wheeled away to the drying-rooms they are still exuding steam and are noticeably warm to the touch. The temperature of the warm rooms or kilns is 175 degrees. Here the baskets dry and bleach for twenty-four hours and are then ready for the store-room. So enormous, however, is the demand from the South that the nested product is immediately loaded aboard the waiting freight cars and shipped to the southeast. During January, February and March the heaviest demand comes from Florida, and about two thousand carloads are needed for that state and probably five hundred carloads are demanded for Cuba; Texas and Arkansas follow with their requirements; then comes Georgia. The berry baskets are made in three sizes: "O," "1" and "2," the latter, largest, or full quart, and used last, "O" being used first to market the semi-hothouse fruit, supposedly because the public is willing to take smaller measure at a stiffer price for the earlier berries.

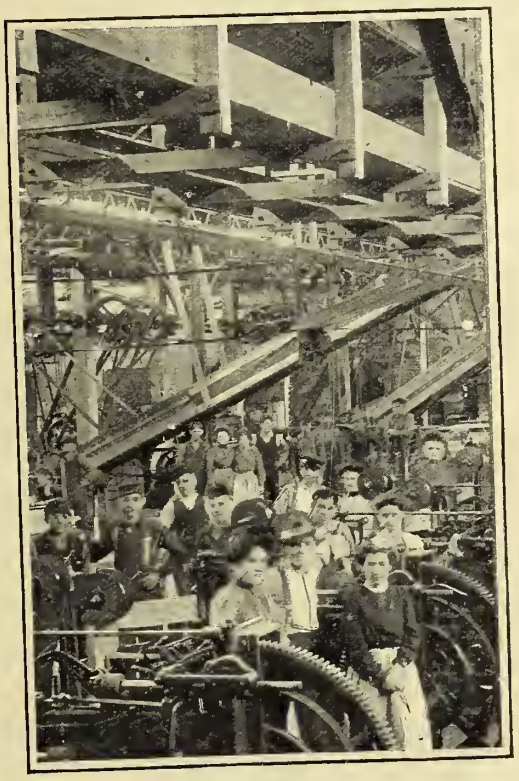
The Mergenthaler-Horton company is making strenuous efforts to multiply the productive capacity of its factory at Paducah, and is planning to erect two additional factories in other parts of the South near the supply of gum lumber. The latter consideration is an important one, for gum timber is the cheapest in the world and best suited to the work of the machines. The soils of Kentucky and Tennessee are prolific sources of supply, and the broad and swift waterways enable getting the logs cheaply to the Paducah factory. Geographically, too, Kentucky is eminently a suitable location for manufacturing baskets for the entire country, for the state seems to be the center of a fruit-growing circle. The process of manufacturing the basket-machines is at best a tedious ones, for the complicated parts require special tools and expensive machinery. The factory at Paducah is receiving on an average five new machines a month from Elmira, N. Y., and plans are now being drawn for an enormous addition to the present central building to house the new equipment. Every effort is being bent to complete new machines at the Horton plant in Elmira, but four-fold more are needed than can possibly be completed in time to successfully supply the demand which will necessarily arise from the enormous increase in the peach acreage in Georgia for 1905, estimated to approach ten million new bearing trees. It is conservatively figured that at least twenty baskets are required for an average yield of a first-year tree, thus making an increase of demand for baskets of this class for the coming season of two hundred million; and there is no one who is familiar with the facilities for making baskets throughout the southern country who does not know that these facilities cannot respond to this increase of demand, even if every existing factory started at once to make the supply required. It is only by the use of these machines that the fruit-growers of Georgia next year will be able to secure the carriers in which to take their goods to market.

Of strawberry baskets alone more than two billion were used last year in the United States, and it would require three hundred Horton machines working ten hours a day at top speed to supply the demand. At the present the Paducah factory is running day and night, so that on a twenty-four-hour system 150 Horton machines will supply the American demand for berry baskets.

In a recent article in the Scientific American, the following paragraphs significantly foreshadow, what the writer believes, viz., a complete monopoly in fruit-basket making out of the advent of the Mergenthaler-Horton basket machine:

"How soon the company which controls all of these patents and machinery will be able to enter the California field is not known. It would seem that an equipment sufficient to take care of the growth of demand for all classes of fruit baskets east of the Rocky Mountains would consume all of the energy of the big organization for two or three years. But these are the days of achievement, and it may be that the California field will get the benefit of Mr. Horton's genius before two years more. The foreign patents on the machines invented by Mr. Horton are owned by the Emmet Machine Company, and cover nearly every country on two continents where timber is grown of sufficient size and character to make this class of baskets.

"The inventions in basket-making machinery made by Emmet Horton and, before he died, by Ottmar Mergenthaler, of linotype fame, constitute an unusually perfect safeguard against competition for the company which owns them, because no other inventors have been able to make a basket machine successfully, and Mr. Horton's inventions now have so fully covered the entire field that the company may well feel protected in every way by the possession of these patents on these great inventions."—Leslie's Weekly.



ROOM WHERE MANY OF THE HORTON BASKET MACHINES ARE IN OPERATION.

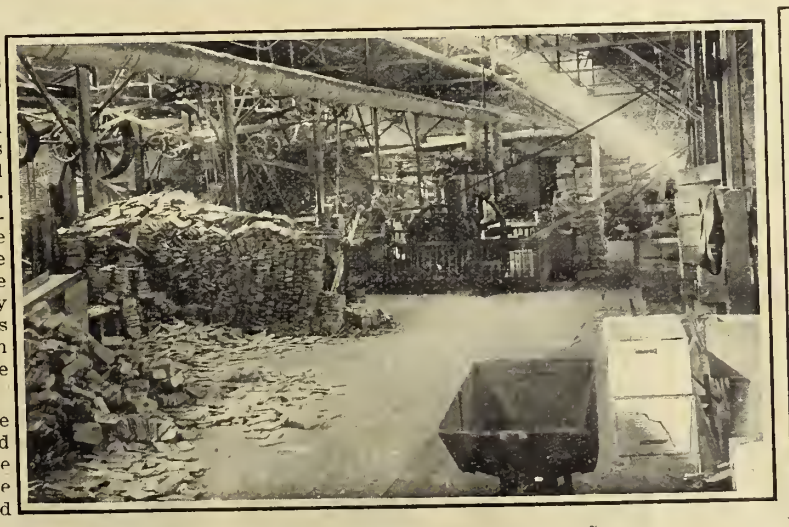
Protection for Tree Trunks.

It is late to give a plan to protect tree trunks, but here is one which will do for next season: Take any quantity of soot and skim milk enough to make a paste so it can be well stirred. Then add enough buttermilk to make it the consistency of thick paint. This can be applied to trees with a white-wash brush, and the work can be done much more rapidly than by wrapping. I have used this kind of mixture for many years and the plan has worked well.

J. R. AYRES.

Blue Mound, Kan.

SHOP IN WHICH THE PEACH-BASKETS ARE PRODUCED.



WHERE THE GRAPE-BASKET BOTTOMS ARE MADE.

PEACH-BASKETS ON TRUCKS, AND STACKS OF GRAPE-BASKET BOTTOMS.

The Crop Situation.

No cards were sent to Fruit-Grower correspondents this month, to secure crop reports, for the reason that there have been no material changes from last month. The opening of spring has been very favorable, and the season is earlier than usual. Spring work is two weeks ahead of usual time in the Middle West. Nothing has occurred to change estimates of fruit prospects. Everything promises well at this time except peaches and, in some places, raspberries. The damage to the peach crop is widespread, and many peach trees are in very bad shape from the effects of the severe weather.

Strawberries have come through the winter in good shape, generally, except where the dry weather late last summer caused a poor stand of plants. Apple bloom promises to be abundant, and the general feeling among fruit-growers is good at this time.

Next month cards will be sent out, as by that time more reliable reports can be submitted. The co-operation of every reader of The Fruit-Grower is asked in making these reports of the greatest possible benefit to growers and shippers everywhere. If there is any section not included in our reports which should be heard from, send us a suggestion to this effect. The Fruit-Grower wants to cover the entire field. We herewith present several reports which cover sections not included in our reports as published in March issue:

Thorshy, Ala.—Prospects for peaches and plums fine; expect to ship about 20 carloads this season.—P. C. S.

Ozark, Ark.—Prospects for fine crop of apples, plums and apricots; no peaches to speak of here, but think there will be some fruit in the valleys and lowlands.—A. W. P.

Camden, Ark.—Fruit prospects here are fine; no damage to date.—F. B. S.

Lincoln, Ark.—Elberta peaches all killed, but some other varieties, such as Champion, Greensboro, etc., and seedlings are all right. Apples, pears, cherries and plums are all right.—J. F. B.

Greenwood, Del.—Yellow peaches all killed, and nearly all white varieties. Raspberries are also in bad shape. Strawberries are all right, as are apples and pears.—H. H.

Du Plain, Mich.—Peaches in favorable locations show a good percentage of live buds, and if no late frosts occur a good crop is assured. European plum trees are mostly dead, from the accumulative results of three hard winters. Japan plums are unhurt and have an abundance of fruit buds. Winter has been favorable for berries, and with a decreased acreage the outlook for a profitable season is excellent.—O. M. P.

Montevallo, Mo.—Peach buds killed, but other fruits generally promise well, especially apples and strawberries.—J. F.

Milo, Mo.—Peaches dead and pears and cherries hurt. All blackberries damaged except Snyder. Mercereau damaged, but I have some plants of the Blowers blackberry which are unhurt. Raspberries hurt some, but prospects for other fruits good, especially for apples. Wheat and meadows look well.—W. F. N.

Horatio, Ohio.—Budded peaches promise 10 per cent of crop, seedlings 25 per cent. Raspberries slightly winter-killed. Strawberries in good condition, but light stand on account of dry weatrer. Apple prospects indicate a large crop, and considerable spraying will be done this spring.—W. K. M.

Ringwood, Okla.—Peaches are about all killed, but all other fruits are in good shape. We look for an apple crop here this season.—D. T. S.

Overton, Texas.—Peach trees promise good yield; no material damage.—J. N. H.

Here is a summary from Iowa, as reported by Secretary Greene of the Iowa State Horticultural Society:

Apples, 92 per cent; pears, 76 per cent; American plums, 92 per cent; European plums, 61 per cent; Japanese plums, 63 per cent; cherries, 87 per cent; peaches, 12 per cent; grapes (uncovered), 75 per cent; red raspberries, 79 per cent; black raspberries, 75 per cent; blackberries, 75 per cent, and strawberries, 92 per cent.

The following reports from Georgia localities are extracts from reports sent to the Chicago Packer:

Bartow county, weather 7 degrees below zero, all Elbertas killed, few others escaped; the Hale orchard at Ft. Valley, 10 degrees above, old Elbertas damaged 50 to 60 per cent, 4 and 5 year Elbertas damaged 10 to 20 per cent; Waddell, Carman, Hilley, Thurber and Belles same; plums not injured; Dalton reports North Georgia peach crop entire failure, with only a few Carmans and Belles left; at Marietta, 20 miles north of Atlanta, orchards reported unhurt, as are North Texas and North Louisiana huds.

Strawberries at Logan, Mo.

The Logan (Mo.) Strawberry Growers' Association expects to ship 25 or 30 carloads of berries this season. All cull berries are thrown out, and in recent years most of the sales have been made by wire from old customers, thereby saving the salary of solicitors. Dealers wanting good berries will find it worth their while to correspond with the Logan Strawberry Growers' Association. Mr. B. Logan is secretary and manager of the association. He is a pioneer in the fruit business at Logan, and has one of the finest apple orchards in the United States. The association of which he is manager puts up the Farmer's Bouquet and Perfecto brands of strawberries, which always sell at good prices, and have the record of bringing the greatest net returns to the growers. Mr. Logan packs his apples in the same manner, using boxes for the fancy fruit. He has just closed out his stock of apples at $4 per barrel. He has 180 acres of orchard, and has made a success at the fruit business. W. H. G.

Cash Premiums for Fruit Exhibits.

The St. Joseph (Mo.) Horticultural Society will hold a number of exhibits of fruits during the coming summer, and will award cash premiums for the best fruit shown. This is made possible by an appropriation of $100 by the county court. It is said the law of Missouri allows each county court to appropriate not to exceed $150 a year to award as premiums for exhibits of farm produce. This sum has been given to the St. Joseph society in previous years, to pay premiums on exhibits at the farmers' institutes in the autumn. But this year the society decided to hold fruit shows in connection with the monthly meetings during the summer months, and the $100 will be divided among these shows. The first will likely be a strawberry show, and at later meetings premiums will be awarded for other fruits as they mature, and for exhibits of flowers, vegetables, etc.

This plan might be followed by other local associations, for the premiums will undoubtedly stimulate interest in the meetings.

The Possibilities of the East Texas Country.

On a farm near Jacksonville, Texas, nine years ago, a man who had found out that peaches could be grown with profit, began to experiment with vegetables and small fruits. His first investigation was with tomatoes. He realized that if that country was to prosper in an agricultural way there must be some crops besides cotton.

The first yield proved that the profits on an acre could be made to reach $200, which is four times what can be realized from cotton. Notwithstanding the undisputed success of the experiment, people were incredulous. The next year he added potatoes to his line of experimental crops in diversification. That year, 1897, there were perhaps not more than fifty cars sent from the entire state, but from the experiments of Wesley Love and one or two others at Jacksonville, the fruit and truck industry in East Texas has grown till the shipments in 1904 amounted to nearly eight thousand cars.

The immigration from the North and East exceeds anything probably that ever occurred in that remarkable movement twenty years ago when the tide was to the Northwest. Thousands and thousands of acres have been taken from the cultivation of cotton and turned to orchards, and truck fields. Potatoes yield about 120 to 165 bushels an acre on an average, and last year sold at $1.02 a bushel on the cars at Morrill, Jacksonville, Lufkin and Tyler. Often the ground grows two crops the same year.

Many fruit-growers have gone from the North. Roland Morrill, of Michigan, since the possibilities in fruit culture have become known, has bought up 12,500 acres on the Cotton Belt, south of Tyler. Eleven hundred acres are already in peaches. Mr. Morrill will increase this to 2,500 acres in peaches. There are already several hundred acres in apples, plums and strawberries, and the acreage in trees will be increased as rapidly as possible.

Mr. Morrill says that in the 20 months since he put out his first trees he has grown five crops of potatoes. He probably will make his potatoes pay for the land by the time his trees begin to produce a profit.

CURE YOUR OWN KIDNEY

And Bladder Disease at Home at a Small Cost. One Who Did It Gladly Tells You How.

Mr. A. S. Hitchcock, (Clothing Dealer), East Hampton, Conn., wishes us to tell our readers who are suffering from any kidney or bladder diseases, that if they will send their address to him, he will, without any charge whatsoever, direct them to the perfect home cure he so successfully used.

Knowing, as he so well does, the failure of almost every other treatment in stubborn cases, he feels that he ought to place in the hands of every suffering man and woman this simple, inexpensive, and withal positive means of restoring themselves to health.

Our advice is to take advantage of this most generous offer while you can do so without cost.

To the Fruit-Grower Family

There is still time to plant strawberries, but none to delay. Send us your rush orders; we haven't a thing to do but fill them. We can have the plants back to you in 3 or 4 days, if you order now. T. H. Smaliwood, Ft. Scott, Kan

Directory of Fruit-Growers' and Shippers' Associations

(NOTE.—If your association is not contained in the following list, or if you know of associations which ought to be here, send name of association and address of secretary. No charge.)

Arkansas.

Arksnsas State Horticultural Society—Prof. Eruest Walker, Sec., Fayetteville, Ark.

Ashdown Truck Growers' Assn.—Mr. Lott, Sec., Ashdown, Ark.

Bentouville Fruit-Shippers' Union—1. B. Lawton, Sec., Bentonville, Ark.

Bentonville Hortlcultural Society—Geo. Wolsey, Sec., Bentonville, Ark.

Bryant Potato and Fruit-Growers' Assn.—A. F. Baldridge, Sec., Bryant, Ark.

Cove Fruit-Growers' Union—Lewis Fortner, Sec., Cove, Ark.

Decatur Fruit-Growers' Assn., Decatur, Ark.—E. N. Plank, Jr., Sec.

DeQueen Fruit and Vegetahle Growers' Assn.—James L. Cannon, Sec., DeQueen, Ark.

Farmington Fruit and Berry Assn.—M. S. Cravens, Sec., Farmington, Ark.

Gentry Fruit-Growers' Assn.—O. W. Patterson, Sec., Gentry, Ark.

Grannis Melon Growers' Assn.—Mr. Burdette, Sec., Grannis, Ark.

Gravette Fruit-Growers' Assn.—E. H. Gosper, Sec., Gravette, Ark.

Gravette Horticultural Society—A. C. Veach, Sec., Gravette, Ark.

Jannssen (Vandevort P. O.) Truck Growers' Assn.—G. D. Hinkle, Sec.

Fruitmen's Union—G. W. Hayes, Sec., Johnson, Ark.

Leslie Horticultural Society—Prof. R. C. Walton, Sec., Leslie, Ark.

Lowell Fruit-Growers' Assn.—J. W. Kimmons, Sec., Lowell, Ark.

Mammoth Springs Fruit Growers' Assn.—T. A. Sharp, Sec., Mammoth Springs, Ark.

Mena Horticultural Society—A. W. St. John, Sec., Mena, Ark.

Moorefield Horticultural Assu.—R. J. Engles, Sec., Moorefield, Ark.

Mt. Pleasant Horticultural Society—Prof. C. E. Boyd, Sec., Mt. Pleasant, Ark.

Ouachita County Growers' and Shippers' Assu.—Harry F. Kapp, Sec., Camden, Ark.

Ravanna Truck Growers' Assn.—R. P. Yates, Sec., Ravanna, Ark.

Rogers Fruit Shippers' Union—J. McFarlaue, Sec., Rogers, Ark.

Siloam Springs Fruit Growers' and Shippers' Assn.—C. A. Ford, Sec., Siloam Springs, Ark.

Springdale Berry Growers' Assn.—H. Graham, Sec., Springdale, Ark.

Springdale Fruit-Growers' Union—James T. Craig, Sec., Springdale, Ark.

Springdale Shippers' Union—J. M. Phillips, Sec., Springdale, Ark.

Sulphur Springs Fruit-Growers' Assn.—J. H. Edgerton, Sec., Sulphur Springs, Ark.

Winthrop Fruit-Growers' Assn.—W. A. Black, Sec., Winthrop, Ark.

Illinois.

Illinois State Horticultural Society—L. R. Bryant, Sec., Princeton, Ill.

Central Illinois Horticultural Society—F. S. Phoenix, Sec., Bloomington, Ill.

Northern Illinois Horticultural Society—Jacob Friend, Sec., Nekoma, Ill.

Southern Illinois Horticultural Society—E. G. Mendenhall, Sec., Kinmundy, Ill.

Alton Horticultural Society—Miss Hannah Davis, Sec., Godfrey, Ill.

Calhoun County Fruit-Growers' Assn.—Wm. S. Wilson, Sec., Hardin, Ill.

Crawford County Fruit-Growers' Assn.—Geo. N. Parker, Sec., Robinson, Ill.

Effingham County Horticultural Society—G. F. Taylor, Sec., Effingham, Ill.

Goreville Fruit-Growers' Assn.—T. M. Jones, Sec., Goreville, Ill.

Jerseyville Fruit-Growers' Assn.—Isaac D. Snedeker, Sec., Jerseyville, Ill.

Kankakee Valley Horticultural Society—F. A. Baldwin, Sec., Kankakee, Ill.

Marion County Horticultural Society—E. G. Mendenhall, Sec., Kinmundy, Ill.

Mississippi Valley Apple Growers' Assn.—James Handly, Sec., Quincy, Ill.

Richland County Horticultural Society—Lee Wilson, Sec., Olney, Ill.

Rock River Horticultural Society—Fred A. Lawton, Sec., Dixon, Ill.

Springfield Horticultural Society—H. Emerson Phelps, Sec., Springfield, Ill.

Wahash County Horticultural Society—Hallock Shearer, Sec., Gard's Point, Ill.

Warsaw Horticultural Society—Homer D. Brown, Hamilton, Ill.

Indian Territory.

Gans Melon Growers' Assn.—W. E. Harley, Sec., Gans, Ind. Ter.

Poteau Fruit Co.—Ed McKenna, Sec., Poteau, Ind. Ter.

Salisaw Fruit-Growers' Assn.—W. A. Wheeler, Sec., Salisaw, Ind. Ter.

Kansas.

Kansas State Horticultural Society—Wm. H. Barnes, Sec., Topeka, Kan.

Barber County Horticultural Society—C. A. Blackmore, Sec., Sharon, Kan.

Lyon County Horticultural Society—W. P. Walters, Sec., Emporia, Kan.

Sedgwick County Horticultural Society—E. H. Cooley, Sec., Wichita, Kan.

Wathena Fruit-Growers' Assn.—Geo. W. Kinkead, Sec., Wathena, Kan.

Louisiana.

Cooper Fruit and Truck Growers' Assn.—J. R. Noll, Sec., Cooper, La.

Hornbeck Fruit and Truck Growers' Assn.—Dr. F. R. Jones, Sec., Hornbeck, Lr.

Lake Charles Horticultural Society—William Teal, Sec., Lake Charles, La.

Leesville Fruit and Truck Growers' Assn.—V. O. Craft, Sec., Leesville, La.

Many Fruit and Truck Growers' Assn.—V. Petty, Sec., Many, La.

Rodessa Truck Growers' Assn.—G. W. Rutledge, Sec., Rodessa, La.

Vivian Fruit-Growers' Union—J. A. Heath, Sec., Vivian, La.

Missouri.

Missouri State Horticultural Society—L. A. Goodman, Sec., 4000 Warwick boulevard, Kansas City, Mo.

Ash Grove Fruit-Growers' Assn.—J. H. Lyharger, Pres., Ash Grove, Mo.

Aurora Fruit-Growers' Assn.—Fred Applehy, Sec., Aurora, Mo.

Bolivar Fruit-Growers' Assn.—W. A. Matheny Sec., Bolivar, Mo.

Billings Fruit-Growers' Assn.—Wm. Watkinson, Sec., Billings, Mo.

Butterfield Berry Growers' Shipping Assn.—W. D. Cowherd, Sec., R. F. D. No. 1, Purdy, Mo.

Cabool Fruit-Growers' Assn.—L. M. Moore, Sec., Cabool, Mo.

Diamond Strawberry Assn.—S. B. Keagy, Sec., Diamoud, Mo.

Dixon Fruit-Growers' Assn.—Dr. W. C. Carter, Sec., Dixon, Mo.

Exeter Fruit-Growers' Assn.—N. J. Lucky, Sec., Exeter, Mo.

Franks Fruit-Growers' Assn.

Greene County Fruit-Growers' Assu.—J. W. Robinson, Sec., Springfield, Mo.

Greene County Horticultural Society—Earl Hopkins, Sec., Springfield, Mo.

Logan Fruit-Growers' Assn.—G. W. Logan, Sec., Logan, Mo.

Marionville Fruit-Growers' Assn.—J. W. Coleman, Sec., Marionville, Mo.

Marshfield Horticultural Society—Dr. Ed James, Sec., Marshfield, Mo.

Missouri Valley Horticultural Society—Mrs. Harriet E. Chandler, Sec., R. F. D. No. 2, Argentine, Kan.

Model Strawberry Assn.—E. A. O'Dwyer, Sec., Monett, Mo.

Monett Berry Growers' Assn.—W. H. Russell, Sec., Monett, Mo.

Monett Horticultural Assn.—J. H. Johnson, Sec., Monett, Mo.

Mt. Vernon Fruit-Growers' Union—S. Henson, Sec., Mt. Vernon, Mo.

Neosho Fruit-Growers' Assn.—F. H. Speakman, Sec., Neosho, Mo.

Nevada Fruit & Growers' Assn.—W. R. Litson, Sec., Nevada, Mo.

Noel Fruit-Growers' Assn.—F. A. Marshall, Sec., Noel, Mo.

Noel Strawberry Growers' Assn.—S. A. Meade, Sec., Noel, Mo.

Olden Fruit-Growers' Assn.—J. H. Evans, Sec., Olden, Mo.

Ozark Fruit-Growers' Assn. — Headquarters Springfield, Mo.; G. A. Atwood, Sec-Treas.

Peirce City Fruit-Growers' Assn.—R. F. George, Sec., Peirce City, Mo.

Platte Purchase Fruit-Growers' Assn.—James M. Irvine, Sec., St. Joseph, Mo.

Pomona Fruit-Growers' Assn.—F. N. Richards, Sec., Pomona, Mo.

Purdy Fruit-Growers' Assn.—C. M. Bennett, Sec., Purdy, Mo.

Republic Horticultural Assn.—Dr. E. L. Beal, Sec. and Mgr., Republic, Mo.

Sarcoxie Fruit-Growers' Union—D. McNallie, Sec., Sarcoxie, Mo.

Sarcoxie Gandy Assn.—L. C. Warmington, Sec., Sarcoxie, Mo.

Sarcoxie Horticultural Society—J. W. Wagner, Sec., Sarcoxie, Mo.

Seligman Fruit-Growers' Assn.—W. M. Murray, Sec., Seligman, Mo.

St. Joseph Horticultural Society—A. W. Bloomfield, Sec., St. Joseph, Mo.; R. F. D. No. 2.

Tipton Ford Fruit-Growers' and Shippers' Assn.—W. D. Cox, Mgr., R. F. D. No. 1, Joplin, Mo.

Turner Fruit-Growers' Assn.—C. F. Patterson, Sec., Turner, Mo.

Verona Fruit-Growers' Union—N. M. Browning, Sec.-Mgr., Verona, Mo.

Washburn Fruit-Growers' Assn.—W. B. Adcock, Sec., Washburn, Mo.

Oregon.

Hood River Apple Growers' Union, Hood River, Ore.—E. H. Shepard, Mgr.

Hood River Fruit-Growers' Assn., Hood River, Ore.—E. H. Shepard, Mgr.

Irrigon Fruit and Vegetable Growers' Union, Irrigon, Ore.—D. C. Marston, Sec.

Milton Fruit-Growers' Union, Milton, Ore.—W. C. Hopson, Sec.

Texas.

Atlanta Fruit and Truck Growers' Assn.—J. M. Fletcher, Sec., Atlanta, Texas.

Bloomburg Truck Growers' Assn.—W. A. Smith, Sec., Bloomhurg, Texas.

Katy Fruit and Truck Growers' Assn.—J. E. Cabiniss, Sec., Katy, Texas.

Overton Fruit and Truck Assn.—J. N. Huff, Sec., Overton, Texas. Cantaloupes, potatoes, tomatoes and peaches.

Pasadena Fruit and Truck Growers' Assn., Pasadena, Texas—R. E. Parks, Sec.

Pilot Point Fruit and Truck Growers' Assn.—J. L. Hensley, Sec., Pilot Point, Texas.

Swan Fruit and Truck Growers' Assn.—D. S. Wood, Gen. Mgr., Swan, Texas.

Texarkana Fruit-Growers' Assn.—L. A. Whatley, Sec., Texarkana, Texas.

Miscellaneous.

American Apple Growers' Congress—T. C. Wilson, Sec., Hannibal, Mo.

Fruita Fruit and Produce Assn.—W. C. Rhinehart, Mgr., Fruita, Colo.

Fruit-Growers' Assn. of Adams Co., Pa.—Edwin C. Tyson, Sec., Flora Dale, Pa.

Union Fruit-Growers' Assn., Union, Ore.—W. J. Townley, Sec.

Northeast Georgia Peach Growers' Assn.—R. E. Andoe, Sec., Gainesville, Ga.

Indiana State Horticultural Society—W. B. Flick, Sec., Lawrence, Ind.

Iowa State Horticultural Society—Wesley Greene, Sec., Des Moines, Iowa.

Meridan Fruit-Growers' Association, Meridan, Idaho—W. N. Yost, Sec.

Michigan State Horticultural Society—C. E. Bassett, Sec., Fenneville, Mich.

Mississippi State Horticultural Society—R. H. Thompson, Sec., Ridgeland, Miss.

Durant Fruit and Vegetable Growers' Assn., Durant, Miss.—E. T. Morgan, Sec.

New Jersey Horticultural Society—Miss Mary Woodward Budd, Sec., Holly, N. J.

Farmers' Fruit-Growers' and Truck Assn., Hagerman, N. M.—Howard Russell, Sec.

North Yakima Horticultursl Union—J. M. Brown, Sec., North Yakima, Wash.

Pennsylvania Horticultural Society — David Rust, Sec., Horticultural Hall, Broad St., Philadelphia, Pa.

Berkeley County (W. Va.) Horticultural Society—H. L. Smith, Sec., Martinsburg, W. Va.

Logan Strawberry Growers' Assn.—B. Logan, Mgr., Logan, Mo.

Thorsby Fruit and Truck Growers' Assn., Thorsby, Ala.—P. C. Smith, Sec.

McDonald County Horticultural Society—Mrs. E. Hetherington Hodge, Sec., Auderson, Mo.

Noel Berry Growers' and Shippers' Assn.—Dr. H. O. Beeson, Sec., Noel, Mo.

Van Buren Horticultural Assn.—James Barrett, Sec., Van Buren, Ark.

Frank Smeltzer Fruit Co.—J. B. Paine, Sec., Van Buren, Ark.

Fayetteville Fruit-Growers' Assn.—R. W. Rader, Sec., Fayetteville, Ark.

Fayetteville Berry Union—L. W. Gregg, Sec., Fayetteville, Ark.

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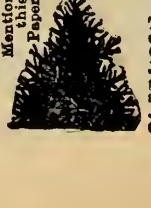

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Notes from the Field

Washington County, Ark.

This is in the northwest part of Arkansas. The land is sometimes flat and level and sometimes hilly and in a few places are spurs of the famous Oazrk and Boston ranges of mountains.

Benton County is the banner county of the state in the quantity of fruit grown and Washington County comes second. All kinds of fruit are raised here, apples, peaches, strawberries and blackberries, and they all do well, but the peaches are a surer crop south of the Boston mountains than they are north of it.

It is stated that within three miles of Springdale, which is situated in the northern part of the county, are 1,000 acres of strawberries and 3,000 acres of orchard, mostly apple trees.

Benton County raises more apples than Washington, but the latter excels in strawberries and its variety of products. The directory of the Fruit-Growers' Association printed in this paper, shows that there are three different fruit and berry associations in Springdale.

Last summer there were seven men buying strawberries here at one time and shipping them by the car load. There is a little sand mixed with the soil and strawberries would grow here wild. As many of the orchards consist of young trees, it is a common way to have the strawberries between the fruit trees.

One of the most progressive orchard men in Washington County is A. C. Skannal of Springdale. He has thirteen acres of strawberry plants, and fifty-two acres of young, thrifty orchard. This gentleman came recently from Louisiana, where he raised cotton and rice. He has a luxurious home The house contains ten rooms and has all modern improvements except electricity, and is heated by a furnace.

The land around Springdale is a little rolling and has natural drainage enough to carry off the water. The writer of this article was a guest of the Springdale Hotel, kept by R. L. Ritter, a gentleman who has the faculty of making all the guests feel at home. He has lived in the county for years and is strictly a hotel man.

Ten miles south of Springdale, and built on a hill and with many natural advantages, is the beautiful town of Fayetteville. Here is located the state university. This is a great center for fruit and berries. In the southern part of Washington County the land is hilly and in many places mountainous. But peaches can be raised on the tops of the mountains as well as anywhere.

There are no saloons in either Washington or Benton county, and the people of both counties are industrious, sociable and progressive. For information regarding orchards and fruit lands, any one can write to the real estate firm of Mason & Anderson, Fayetteville, Ark. They have some fine orchards and fruit lands for sale.

Barry County, Mo.

This county is in the extreme southern part of the state. The land is Barry County is of several kinds. In the southern part of the county the land is hilly and well adapted for raising peaches. In the northern part it is flat and level and well suited for raising the luscious strawberry.

Strawberries are successfully grown at Seligman, Exeter, Cassville, Butterfield, Purdy and Monett. All these towns are in the county, but Monett ships more berriees than any other station, and in point of the amount produced on one acre can equal any other place in Missouri or Arkansas. Of course the Arkansas berry, being farther south, is picked and shipped before the Missouri berry is ripe.

Monett has three fruit and berry associations and is in about the center of the strawberry belt of southern Missouri. Here can be seen on all farms "berry sheds" and "berry patches." Every year before the berries get ripe, advertisements are put in the county papers from where the berry pickers are expected to come, and often just before the berries get ripe a man is hired and sent out by the berry association to engage all the help he can get in the adjoining counties and then after all the help comes, if there is a full crop of berries, the berry men may be from one to two hundred pickers short, as the other towns east and west of Monett are picking berries at the same time and looking out for all the hands they can get.

Berry time is the busiest time of the year in the strawberry belt and at that time there is as much or more money in circulation than any other time of the year.

Cassville is the county seat of Barry County, but Monett is the largest town in the county and more business is transacted here than at any other point, as this is a division point on the great 'Frisco railroad system. During the past few years the profits of the strawberry business have not been as great as they were several years ago. Then, two acres of strawberries brought in more money than forty acres of wheat. At that time there was a ready sale for strawberries at a good price, while the past year there was a slow sale at a poor price. The cause of this was the great amount of rain, and the berries were damaged.

One of the best places in Barry County to get your meals is at the Indiana House at Monett, kept by A. Long. The charges will be reasonable and you will be well served.

For information regarding price of land, etc., call on or write to W. J. Buley, Monett, Mo. W. H. G.
Special Fruit-Grower Correspondent.

This Will Interest Many.

F. W. Parkhurst, the Boston publisher, says that if any one afflicted with rheumatism in any form, or neuralgia, will send their address to him at 30 Shawmut Bldg., Boston, Mass., he will direct them to a perfect cure. He has nothing to sell or give, only tells you how he was cured after years of search for relief. Hundreds have tested it with success.

It is said the L. & N. and Illinois Central railways will both operate their own refrigerator lines in the Southern fruit and vegetable trade.

Asthma

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Attacks stopped permanently. Cause removed. Breathing organs and nervous systems restored. Symptoms never return. No medicine needed afterwards. 21 years of success treating Asthma and Hay Fever. 58,000 patients. Book 35F Free. Very interesting.
Write **P. Harold Hayes, Buffalo, N. Y.**

FRUIT, FARM and Grazing Lands in Arkansas, from $3 to $25 per acre. Fertile soil, healthful location, mild climate. No better land for price. Address **Charles H. Smythe, 506 American Bank Building, Kansas City, Mo.**

Little Fruit Farm

40 acres; small house, good water; well located; 300 bearing apples; perfect title. Price $325.00; terms, $50.00 cash and $5.00 per month. Plat and picture 10 cents. Free farm list.

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BIG YIELDS

of Apples, Peaches, Pears, Cherries. Good crops clover, timothy, corn, and cow peas. South Missouri and North Arkansas offer these advantages. Some sample farms:

55 acres, Lawrence Co., Mo., 7 miles from R. R. town; 20 pasture, 20 plowed, 25 timber; 5-room house, barn, plenty of water, nice orchard; price only $900; owner's wife died; $500 down, balance easy.

79 acres, Benton Co., Ark., ¾ mile shipping point; 72 acres, 3, 4 and 5 year old Ben Davis and Jonathan; all fenced; good well and pond; fenced 6 fields; fair buildings; price $4,000. One apple crop will pay for it.

These are a few of many snaps. Big list Oklahoma, I. T., Missouri, Kansas, Arkansas. Write me your wants. I can fill them. Up-to-date pocket map either state, 10c stamps or silver. This shows towns, counties, railroads and gives population.
LOTT, "THE LAND MAN," 127 W. 8 Kansas City, Mo.

WE GIVE YOU TEN YEARS TIME
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Farm and Ranch Land in Kansas, Nebraska and Colorado
All you need to make the land pay for itself and also make you and your family independent for life. Low Prices. Write for full information. FREE.
B. A. McALLASTER, Land Commissioner, Department. R. U. P. R. R., Omaha, Nebraska

Fruit Farms and Fruit Land for Sale

This department is for the benefit of Fruit-Grower readers who wish to buy, sell or lease farm lands. All advertisements of this nature will be inserted for a charge of 2 cents per word, each initial and number to count as a word. No display type will be used in ads which are accepted at this reduced rate, and all charges must be paid in advance. The rate of 2 cents per word is for each insertion. Count the words when sending your advertisement, and the cost can be easily ascertained. THE FRUIT-GRIWER CO., St. Joseph, Mo.

FOR SALE.—Apple orchard, 160 acres. 100 acres set in apple trees, 8 to 12 years old; located in Barton County, Mo. For particulars inquire of C. C. Clemons & Co., Kansas City, Mo.

FOR SALE.—40-acre fruit farm, 2 miles from Olney, Ill.; 25 acres in good bearing apple trees, besides other fruit; near school and church; good 6-room house and cellar, new barn and outbuildings, all in first-class condition; plenty of good water. Price, $2,650. J. H. MITCHELL, Olney, Ill.

FOR SALE.—Bargains in Delaware land. Catalogue free. Jester & Masten, real estate brokers, Felton, Del.

FOR SALE.—Forty acres improved upland all now in cultivation, especially adapted to fruit, has four acres bearing apple trees, price twenty dollars per acre. Quarter section improved rich valley land, close to railroad, price thirty dollars. Also other lands for sale. Write to Arch. L. Sims, Mount Vernon, Missouri.

FOR SALE.—Creamery in good condition, at a bargain. Ideal location. J. P. Powell, Odessa, Missouri.

FINE FRUIT FARM FOR SALE.

FOR SALE—A fine fruit farm of bearing fruit trees and small fruits; 80 acres, in a healthy location adjacent to one of the best home markets in North Central Missouri. Three miles from court house, and a good trade all ready for the buyer; good public road; telephone; farm well watered by springs; good buildings, three good cellars, apple house full of barrels; a general succession of large and small fruits; land in a high state of cultivation. On account of wife's injuries from team running away, want to sell. Possession given immediately. For particulars write C. B. GREEN, 1106 East Fifth Street, Sedalia, Mo.

FOR SALE—Finest commercial orchard in south Missouri; 20,000 bearing apple; exaporator, cider and vinegar mill, cellars, barns, packing sheds; new residence; adjoining county seat; railroad town; at a great bargain to close an estate; some cash. OZARK IMPROVEMENT CO., New York Life Bldg., Kansas City, Mo.

Furnas Fruit Farm, Brownville, Neb., for Sale—Owing to physical inability to give proper care and attention, I will sell my fruit farm. All in full bearing, and prime condition. Even for the unfavorable fruit conditions of 1904, it paid a good per cent profit. For particulars address ROBT. W. FURNAS, Brownville, Neb.

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Large bodies of land and ranches; timber land, fruit and truck farms in Kansas, Oklahoma, Texas, Old Mexico, Louisiana, Arkansas, Southern Missouri, Colorado, New Mexico and California. Tell me what you want and where you want it and how much money you will invest if suited and I will send you list of bargains of the kind you want in that locality. I also have small farms and ranches in all parts of said States. I am working above mentioned territory thoroughly. Write me and see how well and how promptly I will serve you. I have land at 35 cents to $35 per acre.
GEORGE W. MORRIS, LYNDON, KAN.

FOR SALE—Farm of 320 acres, one and a half miles from Winchester, Kan.; either quarter section will be sold separate if desired. On the southwest quarter is a house of 8 rooms, a cottage; a barn 24x40, corn crib 10x40, driveway between, all under shingle roof; hog pens, smoke house, five-ton scale, two wells, cistern, corn crib; 500 Missouri Pippin, 250 Gano apple trees, set out nine years ago; 550 Jonathan set out two years ago; 12 acres in strawberries, blackberries, red and black raspberries, two packing sheds. On the southeast quarter are 6,000 Ben Davis, 1,800 Gano apple trees, set out ten years ago, 500 Gano, set out two years ago. Living water the year round on every 40 acres if wanted. Timber on the two quarters. For particulars write Wm. Booth, Winchester, Jefferson County, Kan.

We are the largest dealers in real estate in Grand Valley, the famous peach, apple and pear growing section of Western Colorado. Orchards here 8 years old net the growers from $500 to $700 per acre. The climate is the best in the world and is a specific for lung and throat troubles and asthma. Write us for information. The Home Loan & Investment Co., 357 Main St., Grand Junction, Colo.

A GOOD PLACE TO LOCATE—On plateau of Cumberland Co., Tennessee, where fruit, corn and potatoes grow to perfection. No cyclones, no floods, no great storms of any kind; less wind than any place you ever lived in; no mosquitoes; perfect natural drainage; best freestone water; very healthy, delightful summers; can plow all winter; abundance of free range for stock. Land $3 to $10 per acre. Write A. E. Payne, Crossville, Tenn.

Choice Oregon Land

We have several tracts of choice land located in the center of the well-known Walla Walla valley fruit belt. Do not fail to see us on your way to the Lewis and Clark Fair. Parties traveling via Union Pacific change at Pendleton and an hour's ride brings you to Milton.

If you are interested in securing a home in a mild climate let us know a few days before you will be here, and will have hotel accommodations reserved for you, and will meet you at the train. Office across track from depot. Milton Fruit-Growers' Union, Milton, Ore.

FOR SALE—76 acres, joining city limits of good live railroad town in the Ozarks; 9-room house, wood house, chicken houses, large barn; 2 cisterns and well; 2,500 bearing apple trees 12 and 14 years old; 100 peach trees; all small fruits; all land in cultivation. For price and further particulars address JAMES Z. BURGEE, St. James, Mo.

BRUCE'S BARGAINS.

16 acres, within corporate limits of Pleasant Hill; 9 acres set to fruit, balance pasture; 7-room house; all sorts best quality small fruit; chicken yard; large shade trees; south front; choice location; fine neighborhood; for sale few days only, $1,750.

24 acres, within corporate limits Pleasant Hill; large 7-room house; good soil; spring and well water; can be had for $2,250.

150 acres, 3 miles of town on Kansas City road, 30 miles of Kansas City; fine soil; some timber; running water; the best value for the money in the county; can be had on terms to suit for $45 per acre.

200 acres; one house, 7 rooms; three smaller houses; some good timber; excellent all purpose farm, or well adapted for raising and feeding stock; within 1½ miles of good shipping station and only 40 miles of Kansas City; can be had, if sold at once, for $6,500, and desirable terms made if wanted. All fine fruit land.

Come over the Missouri Pacific to Pleasant Hill (24 passenger trains daily to this place), and save receipt for fare paid. Fare refunded if you buy.
Bruce Bargain Co., Pleasant Hill, Mo.

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We offer you the very best, near growing towns, water guaranteed, at $12.50 to $15.00 per acre. 400,000 acres to choose from.

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FRANK M. HAMEL, Marshfield, Webster County, Missouri.

I can sell your Real Estate or Business no matter where located. Properties and business of all kinds sold quickly for cash in all parts of the United States. Don't wait. Write today, describing what you have to sell and give cash price on same. A. P. TONE WILSON, JR., Real Estate Specialist, 413 Kansas Avenue. TOPEKA, KANSAS.

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You learn all about Virginia lands, soil, water, climate, resources, products, fruits, berries, mode of cultivation, prices, etc., by reading the VIRGINIA FARMER. Send 10c for 3 months' subscription to
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CASH

For your farm, ranch, home or business, no matter where located. If you wish a quick sale, send us description and price. If you want to buy, tell us your requirements. We have or can get what you want.
N. B. JOHNSON & CO.
520 Bank Commerce Building. KANSAS CITY MO.

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TRUCK, STOCK RAISING AND GENERAL FARMING.

located on both sides of M. & O. R. R. in Alabama and Mississippi. Price from $2.50 to $6 per acre. Terms—On less than 160 acres, one-fourth cash, balance 1, 2 and 3 years. Larger tracts, one-fourth cash, balance in nine equal yearly payments. LAND SEEKERS' EXCURSIONS on 1st and 3d Tuesdays of each month. Write for ILLUSTRATED FOLDER and MAP, sent free.

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GEO. KILBORN, Sec'y
59 St. Francis St. Mobile, Ala.

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Cost, . $12.00	Security Vineyard Tract,. . $12.00
Guaranteed Annually 10%	Trust Bond, $10.00
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Do you want a guaranteed income for over 50 years? Money deposited with the Southwestern Trust Co. of Kansas City as trustee for purchasers to guarantee success and profits on our vineyards. The climate assures a steady crop, and handled more economically than any other fruit. Affidavits, letters, etc., to prove 50 per cent and 160 per cent yearly. This is an absolutely guaranteed investment. Investigate now before increase in price takes place. Address

California Development Co. 421 New York Life Building KANSAS CITY, MO.

Questions and Answers

Mrs. R. E. W., Eugene, Ore.—I lost a lot of strawberry plants from a little white worm which worked in the crown; occasionally found a wiry one. What can I do to prevent this pest increasing? Last summer was an exceedingly dry one; is there any connection between the season and this insect?

Answer by Prof. Stedman: The little white worm working in the crown of the strawberry is the larva of a beetle known as the strawberry crown borer. This insect usually becomes numerous enough to cause serious trouble only in beds three years old or older. The only successful method of fighting this insect is to take the young plants from the runners on the old bed, being careful that none of them have these insects in them, and to set out a new bed some little distance from the old one and plow under the old bed, using the ground for some other crop for a few years. The adults of the strawberry crown borer are not able to fly and hence cannot migrate far to a new bed, and if the rotation of the strawberry bed is kept up every three or four years, one will have no difficulty in keeping these insects in check.

O. M. K., Montrose, Colo.—In answer to my inquiry for a remedy for cherry slug Prof. Stedman recommended arsenate of lead in preference to paris green, as the latter is likely to injure the cherry. Inasmuch as the arsenate of lead adheres tenaciously to everything it touches, is it not likely to make the fruit unfit for use? In another article Prof. Stedman recommends the use of pyrethrum in dust form for both sucking and biting insects; why would it not be best for the cherry slug.. (2) Can you give me the wholesale prices of arsenate of soda and acetate of lead? (3) Can you give formula for dust spray for codling moth. and manner of using it? (4) How much tobacco dust should be used to an apple tree for woolly aphis?

Answer by Prof. Stedman: As the arsenate of lead will remain on the cherries and show a white substance, provided the fruit is more than half grown at time of spraying, it would be advisable, if the spraying is to be done later, to use powdered white hellebore in the proportion of one pound to ten (10) gallons of water. This substance is not as poisonous, however, as the arsenate of lead, and loses its strength very soon after being applied, but in the case of cherries that are nearly full grown, no trace of it would remain after the first rain, so that nothing would appear upon the fruit that would need to be washed off before selling. (2) Pyrethrum is used for all kinds of insects, regardless of whether they are biting or sucking, but it is too expensive to use in such a wholesale manner as would be necessary in fighting the cherry slug. The arsenical poisons or the powdered white hellebore are much cheaper and perhaps more effective in this case and should be used in preference to the pyrethrum. (3) I have purchased considerable arsenate of soda and acetate of lead by wholesale and by retail, but do not now remember the price of the same. However, I do remember that where one buys these chemicals and makes his own arsenate of lead, it is cheaper than Paris-green. (4) The subject of dust spraying formulae and the methods of applying them have been so thoroughly discussed in the Western Fruit-Grower before in several articles, that I respectfully refer the gentleman to those articles for his information in regard to this matter. (5) The amount of tobacco dust to be used about the roots of apple trees in order to kill the woolly aphis will depend upon the age of the trees. If the tree is about eight years old, 5 pounds of the powder will be sufficient. More should be used for larger trees and trees badly infested, and less for smaller ones.

C. M. E., Missouri.—I found a worm in my orchard and would like to know what it is, also what to do for them if they get very bad. I found only two bunches of them. The first seemed to be full grown and had eaten most of the leaves off one tree. The second were small and were on only one limb. I killed all I found. The worm resembled a catapillar, are about three inches long, are striped, and have legs in the middle haf of the body. When disturbed they hold up both ends at right angles with the body.

Answer by Prof. Stedman: The larvae or caterpillars described are those of the Datana moth. It is a rare thing that these insects occur in immense numbers over an orchard. Uusally a few trees will contain a great many of them, and, if neglected, they will strip the leaves off those trees. However, as these insects are quite large and remain upon the tree, usually feeding upon certain limbs only, until they have stripped the leaves off, it is a very simple matter to kill them by spraying the infested trees or portions of trees with any of the arsenical poisons.

H. J. W., Fruita, Colo.—I want to use peas in my archard this season. I understand there are several varieties of cow peas, as well as the Canadian field pea. Which is the best for my purpose? Is the velvet bean as good as the peas for this purpose?

Answer by W. L. Howard: Having no acquaintance with your soil, I would say in general that cowpeas would be the best for your purpose if they will grow. The Whip-poor-will and Clay are the leading varieties in many localities and will no doubt succeed in Colorado. The velvet bean does not grow so well as the cowpeas in Missouri.

C. C. D., Clinton, Mo.—Rabbits gnaw many blackberry canes here. They sometimes gnaw the branches off, and even cut the large canes off near the ground. Would a thorough spraying prevent this? If so, would a wash made of lime, sulphur, soap and carbolic acid do? Would such a wash hurt the canes?

Answer by W. L. Howard: The wash mentioned would probably prevent injury from rabbits ordinarily, but like the many washes recommended for this purpose, it may not be effective always. Such a wash, sprayed on plants, would, I believe, do no injury.

J. H., Pacific, Mo.—How does Downing's Winter Maiden Blush apple do here in Missouri? Does it bear well, and does the fruit keep well?

Answer by W. L. Howard: It bears well and keeps longer than the common Maiden's Blush.

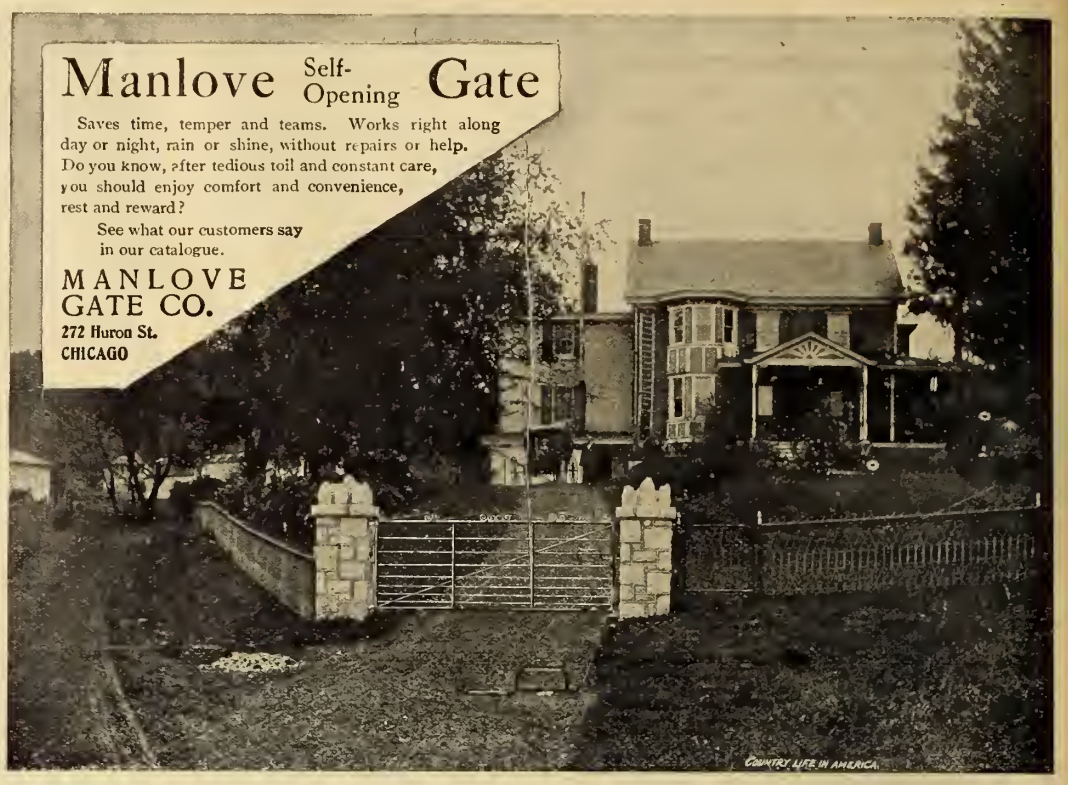
G. W. M., Gotebo, Okla.—I am building a home on a block of grounds 300x 300 feet. I want to plant fruit trees and want to know how close I can plant apple, peach, pears (standard and dwarf), plums (native, Japanese and hybrid), and cherries. I want to plant all I can, and yet want them far enough apart to do well. Can give them good care, but we have some dry spells during summer. Can grape vines be planted between apple and peach trees, and how close should they be planted?

Answer by W. L. Howard: The apple trees should have at least 25 feet of space each way with nothing between them except berries, or other similar low growing crop. The peaches should be planted not closer than 12 to 15 feet apart each way, and standard pears should have about 20 feet, while the dwarf, together with all of the plums, may be as close as the peaches. Cherries should be at least 15 feet apart. A row of grapes may be planted between the rows of apples, although when the trees become large they will reduce the yield of the grapes.

W. K. M., Horatio, Ohio.—I am preparing several acres for planting to strawberries in the spring. The ground is clay, inclined to be a little heavy, but it is considered good corn ground. I gave it an application of unleached hardwood ashes at the rate of 75 or 80 bushels per acre. Do you think this amount was excessive? (2) I manured part of the field with fresh stable manure, but will not have sufficient to cover the entire field, and will use commercial fertilizer on part, in connection with wood ashes. What should be the analysis of the fertilizer? How much should be used per acre? (3) I can secure any amount of unleached hardwood ashes free of charge, by hauling them seven miles. Will it be profitable to haul them that distance to use in orchards and berry fields? (4) Is there a paper published devoted to the nursery business?

Answer by W. L. Howard: If the land has produced good crops of corn, it probably needs very little or no potash. When land is deficient in potash, about 50 bushels per acre of the unleached wood ashes is usually considered sufficient for the purpose. Seventy-five or eighty bushels per acre would be an excessive amount. (2) A well balanced strawberry fertilizer will consist of the three principal elements, as follows: Nitrogen, 3 per cent; phosphoric acid, 9 per cent; potash, 7 per cent. The first is supplied by nitrate of soda and sulphate of ammonia, as well as some other materials; the phosphoric acid by acidulated rock; and the potash, by wood ashes or muriate of potash. About 500 pounds per acre would be sufficient. The amounts of each may be worked out from the

The Manlove Driveway Gate, which has been advertised in The Fruit-Grower for a number of years, has been in general and satisfactory use in all parts of the country. This gate can be placed at an ordinary driveway entrance with the usual posts. Its use avoids accidents, is a great time-saver and is very convenient and is guaranteed to work in a satisfactory manner. It is scarcely necessary to comment upon the great advantage of having a good self-opening gate, for, upon a moment's consideration, everyone will remember numerous accidents which have occurred when drivers of teams left the wagon to open gates. These would have been avoided if the driver could have held a firm grasp upon the lines all the time. The Manlove Gate is well known everywhere, and is guaranteed by the manufacturers to be satisfactory. An illustrated catalogue describing the gate will be sent free upon application, to those who mention The Fruit-Grower in writing.



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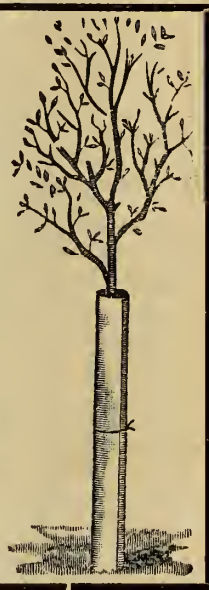
will protect your trees from rabbits, mice and borers; will also protect the trunks from sunscald. Can be left on throughout the year, and will last for years. A cheap, effective protection. The accompanying cut shows the protector as applied to a tree. This is the protection recommended by most of the horticultural societies, and millions of them are in use. We are headquarters for them. Write for prices.



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SECOND AND ARSENAL STREETS, ST. LOUIS, MO.

Kill the Woolly Aphis

This is the insect which works on the roots of apple trees, causing the death of thousands of trees yearly. Woolly Aphis can be readily destroyed by spreading tobacco dust about the roots of trees. In addition to killing the insects, tobacco dust is a valuable fertilizer—indeed, it is worth what it costs as a fertilizer alone.

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a semi-monthly paper, overflowing with easy-to read facts about honey bees and their habits. You learn how to use these little workers to make money for you. It is edited by experts and its contributed articles are crammed full of practical points. Write for free copy. Read it—then subscribe. 6 month's trial 25c. Do it now.

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More than a quarter of a century ago the the nursery of J. Wragg & Sons Company was established at Waukee. Through all these years this nursery has been testing and sending out the best of nursery stock of all kinds. This experience has been valuable, and has enabled us to produce the best stock which can be procured anywhere.

Is not this long experience worth something to tree-planters? We know it is. Our experience enables us to give good advice to planters—this is not the case with a nursery which has not been long established. Don't overlook this.

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Our Catalog Free

Contains many bargains in fruit trees and garden seed and just the information that fruit-growers would appreciate. The title, "Chickasaw Trees Bear" carries with it much truth as well as success to the grower who plants our trees and seed. Terms to agents on application.

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Millions of first-class strawberry plants at prices that will make you buy. Large stock of Fruit Trees, Grape Vines, Currants, Gooseberries, Asparagus, etc., also fine stock of Everblooming Roses. Get our prices before ordering elsewhere and you will save money. Write for Catalogue and prices today.

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ARBOR VITAE

Infallible remedy for borers, scale, and all animal life inimicable to trees. Makes trees healthy and stimulates growth. Sold on guarantee. Write for particulars. Agents wanted.

DIX CHEMICAL CO., 410 Hibernia Bk. Bldg., New Orleans, La

Native Evergreen Seedlings

Balsam Fir, Arbor Vitae, American Spruce, White Pine and Hemlock, 6 to 12 inches. Also transplanted Evergreens at lowest prices. Write for price list. If not already supplied with Apple Seed for spring planting, write at once for price of A No. 1 Seed, crop 1904. Address

MRS. JAMES A. ROOT, Skaneateles, New York.

Peach Seed for Sale

Write Thos. R. Haman, 1614 E. Oliver St., Baltimore, Md. References as to quality and good results.

analysis given on each brand of fertilizer. If the fruits do not develop and color up well, it is probable that it would pay to dress the orchards and fields with the wood ashes. (3) The owner will have to determine for himself from the cost of hauling the material whether he can afford it. (4) The National Nurseryman, of Rochester, N. Y., is a periodical devoted to the nursery business.

H. S., Bossardsville, Pa.—Have any Fruit-Grower readers used the caustic potash of James Good, 939 North Front street, Philadelphia, and if so, with what results? (2) I have San Jose scale on some young nursery apple trees, four years old; what would be a good spray for them, and in what month should it be applied?

The caustic potash made by James Good is favorably known. Caustic potash whale oil soap is one of the best whale oil soaps made with which to fight San Jose scale. It should be used at the rate of two pounds of the soap in one gallon of boiling soft water and should be applied while hot at any time after the leaves have fallen and before the buds swell in spring and each scale must be touched in order to kill it. Where one has a large orchard this method, however, is more expensive than spraying with the lime, sulphur and salt solution. (2) In our Eastern Department in this issue Prof. H. A. Surface, economic zoologist of Pennsylvania, answers the queries concerning San Jose scale. (3) Spray oyster shell bark louse with kerosene emulsion, just when the young insests appear, which will be in May or June.

P. D. S., Wenatchee, Wash.—I have a sandy and gravelly piece of land that four years ago produced nothing but a few sage brush and an odd sunflower; it has been planted to apple and peach trees, also is irrigated. Most of the apples on this land show a small black speck about the size of a pin point, seemingly under the skin, and when apple is ripe is about the size of a pea. Old fruit growers in this valley say that rot in apple is caused by too much nitrogen in the ground and recommend lime (lime is $2.00 a barrel), as a cure. Potatoes are affected with the same disease, the rot starting in the stem end, often not perceptible until potato is peeled. This land is too poor to grow any of the vegetables unless heavily manured. Intended to sow clover and plow under, but this would only add fuel to the fire if the above diagnosis is correct. Trees have made a good growth and clover does well on this land, when it gets water enough.

Answer by Dr. Whitten: Whatever may be the cause of the black spots on the apples, it is safe to say that in the soil mentioned it is not due to too much nitrogen as alleged. If the soil is poor, the orchard would undoubtedly be improved by growing clover or some leguminous crop which will thrive there, as a green manure crop. The best leguminous crop to grow is the one which will thrive there best. If clover does well, it would certainly be advisable to grow it and plow it under as suggested. Not being acquainted with the diseases of that section, it is impossible from this distance to say what may cause the black spots. A letter to the State Experiment Station at Pullman, Washington, enclosing a sample of the disease would undoubtedly enable them to correctly diagnose the cause of the trouble and they could possibly tell you how to avoid the recurrence of the spots in the future.

E. W. J., Woodlawn, Va.—Please give an opinion concerning the Black Ben Davis, Apple of Commerce, Champion, Delicious, Liveland Raspberry and Chicago apples. (2) Where can one get grafting wood of Liveland Raspberry apple?

Answer by Dr. Whitten: I have not seen the Liveland Raspberry or Chicago apples in fruit and consequently know nothing about them from personal experience. The other four varieties are undoubtedly promising sorts. The Delicious is a large, beautiful apple, of the very finest flavor, and has been reported as bearing well and doing well generally, especially from points in Iowa, where it originated, and the northern half of Missouri. I have had no reports concerning it from any other sections, but it has been very highly spoken of by reliable growers from the sections named. The other three are apples which are all around commercial sorts. We have seen the Liveland Raspberry apple advertised by Stark Brothers, Louisiana, Mo., through whom the trees can be purchased. As to whether they furnish grafting wood of it I am not informed.

J. Dittman, Kansas City, Mo., wants to know what other growers pay for picking peaches, plums and cherries.

C. M., Kansas City, Mo., recently sent a list of questions to Jacob Faith, Vernon County, Mo., and the latter sends these questions, together with his replies, to The Fruit-Grower, thinking they may interest other readers as well:

(1) Would you plant an apple tree having crown gall? No. (2) Is the Little Red Romanite apple tree from root rot, and is it as vigorous a tree and as long-lived as Minkler or Northern Spy? And would it be as good stock for working other varieties as either of the latter? Have not noticed that Little Red Romanite is free from root rot, and would prefer the Minkler as a stock. (3) Would you prefer to put Jonathan on its own roots, or would you top-work it on Little Red Romanite? Would not want Jonathan as a stock, as in my old orchard Jonathan has not been as long-lived as some others. (4) If Jonathan is worked on Little Red Romanite, would it be apt to hang longer on tree and keep better than if on its own roots? Have never noticed that the stock has this effect on varieties worked on it. (5) If apple trees are planted 30x35 feet, can peach trees be planted between them in the 35-foot space? Peach trees may be planted in the wide space, but have this in the rows north and south. Thirteen years ago I planted 1,160 apple trees 32x32 feet, and set peach trees in the row running north and south; on the high part of the orchard the plan worked well; a mistake I made was in not pruning peach trees severely enough. (6) Could a seedling peach tree one year old be cut close to the ground, allowed to grow the following season without removing, then bud it and transplant at the proper time; would this make a good tree, and would it bear one year sooner than peach trees budded on seedlings one year old? The seedlings could be handled in this way, but would not bear any sooner than trees budded on year-old seedlings. (7) What variety of cow pea is best for eating? Is the Crowder a good variety? The Lady White, or Blackeye, is the best pea for eating. The Crowder, or Wonderful, gives a great crop of vines, but few peas. With me it failed in seven years to ripen any seeds, while Whippoorwill and some other sorts will yield heavy crops of seeds and hold their own in making vines. (8) Have you tried to use the meal from Kaffir corn, and is it good for eating? Our family prefers meal from Indian Corn. Kaffir corn, however, is our cheapest and best poultry food. (9) What is a good remedy for woolly aphis, on roots of trees? Use tobacco dust liberally about the roots of the tree; remove a layer of the soil, sprinkle the dust, then replace the soil, and the tobacco will leach down into the soil and hold the insects in check. (10) Does an apple tree begin to die at the top or from the roots first? Depends on the disease which causes the death of the tree.

W. C. B., Port Dalhouse, Ontario, Canada.—Do you know of any co-operative canning factories, owned and managed by tomato, corn and fruit-growers? If possible, can we not have some articles on this subject? I think all will agree with me that the time is coming when the farmer should have a voice in the selling price of his products, and, if necessary, should put the stuff on the market himself. Can we not have some information on the subject of canning the products?

Who has had any practical experience along this line, and will furnish an article on this subject? No articles from factory promoters—we want actual experience.

W. O. M., Lawrenceburg, Tenn.—I have a very early yellow apple that is ripe and ready for market by the 10th

Some Facts About Farm Cream Separation

What the BEATRICE CREAMERY COMPANY, of Lincoln, Neb., the biggest, greatest and most successful creamery concern in the world, has to say of the De Laval Cream Separators and Farm Separation:

"The De Laval Hand Separator will make the farmer double the money over the old way of handling milk and will prove twice as durable as the so-called 'just as good' hand separator.

"We have sold over 15,000 De Laval separators since we inaugurated the Hand Separator system in the West, and we expect to add 5,000 more to this number during 1905.

"We are now operating over 600 separator cream receiving stations, with an agent at each point pleased to call on the farmer and explain how quickly he can pay for a De Laval Seperator from what he is losing by dairying in the old way.

"We have paid as high as 25 and 30 cents per pound for butter fat each winter since 1900, and the future looks brighter for dairying than ever before.

"We have 20,000 satisfied patrons receiving our cream checks regularly, and at a low estimate will pay out over Three Million Dollars for cream during the year of 1905."

What the Beatrice Company is doing, more than 2,000 other creamery concerns are doing on a comparatively smaller scale, everyone with satisfaction and success. Scarcely a successful creamery concern anywhere is today attempting the use or sale of other than De Laval machines. Nearly all who have tried other machines have either changed to the DE LAVAL or abandoned the handling of separators.

The DeLaval Separator Co.

Randolph & Canal Sts. **Chicago**
1213 Filbert Street **Philadelphia**
9 & 11 Drumm St. **San Francisco**

GENERAL OFFICES:
74 Cortlandt Street
NEW YORK

121 Yonville Square **Montreal**
75 & 77 York Street **Toronto**
248 McDermot Avenue **Winnipeg**

THE IOWA BLACKBERRY and the DAKOTA RED RASPBERRY

are the best two new berries in the world. Send for price list of new fruits.

A. S. DRESHER, LISBON, IOWA.

Fruit Trees

A large assortment of the finest quality of Fruit, Shade and Ornamental Trees, at very low prices. We make a Specialty of dealing direct with the farmers. Write for Price List.

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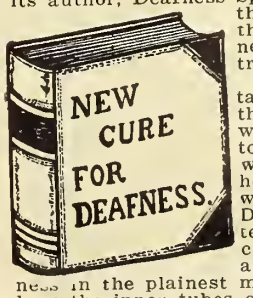
DEAFNESS BOOK FREE

HOW TO REGAIN HEARING

The best book on Deafness and how to cure it ever given away, is being distributed absolutely free of charge by its author, Deafness Specialist Sproule, the greatest authority on Deafness and all ear troubles.



The book contains information that will be of wonderful value to deaf people. It was written to honestly help all who suffer from Deafness, and it tells all about the cause, dangers and cure of Deafness in the plainest manner. It shows how the inner tubes of the ear get all blocked up, causing the loss of hearing, and explains the terrible ringing, buzzing sounds in the ears and how to stop them. Fine drawings by the best artists illustrate its pages.

If you want to get rid of your Deafness, send for this book and find out what to do. Deafness can now be cured and this book explains how. It's in great demand, so ask for it today. Write your name and address plainly on the dotted lines, cut out the Free Coupon and mail it at once to **Deafness Specialist SPROULE, 324 Trade Building, Boston.** You will soon receive the book.

FREE DEAFNESS BOOK COUPON.

NAME .....

ADDRESS .....

.....

of June, ten days or two weeks earlier than Early Harvest. It is a good size deep golden yellow apple, of extra good flavor, not nearly so sour as Early Harvest. Can anyone tell me what variety it is? I also have an extra fine pear of the Japan type; one tree planted eight years has borne six crops; I have known small trees two years old to bear, and I have kept some of the fruit until the 21st of April, without any special care. One of the pears was taken to the World's Fair by the secretary of our commission; this pear measured 13¾ inches in circumference and weighed 22 ounces. The tree is an upright grower, and I want to plant an orchard of the variety. Is 16x16 feet too close to plant?

Who can answer the questions concerning the apple? The distance given is close enough to plant pears, provided the tree is long-life and attains to a good size. If the trees live to a good age, it will likely be better to plant them farther apart, even though they are upright growers.

H. L. N., Kevil, Ky.—I would like to have some information in regard to storing apples for winter. I gathered my crop last year about the middle of September, when they began to fall badly. They were Winesap, Ben Davis, Rome Beauty, Gano and Paragon; they were large, well colored and comparatively free from worms. I sprayed three times with paris green, beginning while in full bloom, and twice afterwards, at intervals of ten days. After gathering the fruit I lost considerable from rot, losing perhaps 20 bushels out of 300 bushels. Now, would it be best to prepare to store my fruit at home, or should I ship or haul it to cold storage? I live about half way between Paducah, Ky., and Cario, Ill., about 20 miles from each, and both towns have storage plants. If it is best to store at home, could I convert a tobacco barn or a stock barn into storage house suitable for apples? If not, tell me how to build a storage house that is suitable. An old fruit-grower here told me that freezing apples would not injure them, provided they are not molested while frozen. Is this true?

These questions cannot be answered definitely, without understanding all the conditions. It can be said, however, that apples intended for storage should not be hauled twenty miles in a wagon before reaching storage. Do you want to store apples for home use or for market? If for home use, you can likely prepare a house which will suffice to keep the varieties named. But if for market, it will doubtless be best to use cold storage. But ship the fruit—don't haul it twenty miles in a wagon. If you want to build a storage house at home, cold storage or otherwise, write to the Illinois Experiment Station, Urbana, Ill. for an interesting bulletin on this subject. Ordinary storage, such as cellar or cave, however, should hold the varieties named. These houses should be so constructed that the heat from the outside will not enter; for this purpose double walls are necessary. During the early fall and winter, when the days are warm and nights cool, the windows and ventilators should be opened at night, and closed in the morning, thus allowing the cold air to enter and shutting out the warm air during the day. During the coming summer we hope to have some articles on the subject of home storage-houses. Apples are injured by freezing, but the injury will not be so marked if they are not disturbed while frozen, but are allowed to thaw out gradually. But they are best not frozen.

Subscriber, Decatur, Ark.—(1) What is the best method of putting up unfermented fruit juices af oll kinds so that they will remain sweet? (2) How should celery be cultivated and how stored for winter use?

The making of unfermented grape juice—and other fruits would be similar—was described in the issue for August, 1904, on page 267. (2) In this issue will be found an article on celery-growing, and before autumn we hope to have another article on the storing of the same for winter.

G. L., Fremont, Iowa,—For the past two years we have been troubled with a very small insect on our plum trees. They come about the time the plums begin to form, or a little later; they get on the leaves and on the stems of the plums; also get on the leaves of plum sprouts which grow near the trees. We have been spraying our trees with Bordeaux mixture and paris green. Now, what kind of an insect is this, and how can we fight it?

The insect is doubtless the plum aphis, which belongs to the sucking insects; therefore it cannot be killed by spraying with paris green, but it must be killed by one of the insecticides which kill by contact. Kerosene emulsion is the remedy to apply, or if you have one of the pumps which mechanically mix oil and water, this can be used. Strong tobacco tea will also kill the insects, and even strong soapsuds has been effective in destroying them. But kerosene emulsion is the standard remedy.

H. W. L., Brooks, Maine.—(1) Is there any kind of paint that will prevent mice from gnawing trees? (2) Is one application of paint sufficient for one winter? (3) Will paint injure the tree? (4) Can a person prepare his own paint? If not, where can it be procured? (5) What will prevent ants from working on trunks of apple trees? (6) Is there anything that will prevent ants from getting inside a tree, or will drive them out after they are in?

(1) We do not know that any of the tree paints advertised will be effective in protecting against mice. Who knows as to this? Who has had any experience in protecting against mice by using tree paints.. (5) Do the ants really work on the trees? Are they not there as a result of the presence of some other insect? For instance, plant lice, or aphids, secret a honey-dew which is food for the ants, and they follow the aphids. But it is not likely the ants have caused injury to a healthy tree. Is not some other insect causing the damage?

C. M. H., Ansted, W. V.—What insect has deposited eggs in the peach twig which I inclose? (2) What caused two two-year-old Diamond grape vines to turn yellow and make but small growth last season, though they matured a few bunches of fruit? They are set on the north side of the house, and where there used to be an ash-hopper, so the soil must be very rich in potash. (3) What caused the fruit on an apple tree to rot on the tree last fall, about the time they began to ripen? The apple is large, red, and very fine; don't know name of variety. The orchard is planted in low, sandy ground, by a creek, but none of the rest of the orchard has been affected.

Answer by Prof. Stedman: (1) The twigs have been injured by the buffalo tree hopper depositing her eggs therein. There is nothing to be done to prevent this in your orchard, except to keep down the weeds in the orchard and neighboring fields, as the insect feeds upon weeds, and not upon the trees. The insects will do no harm, except as they injure the twigs in depositing the eggs.

Answer by Dr. Whitten: (2) It is probable that the Diamond grape leaves turned yellow on account of the excess of potash in the soil which has leached from the old ash hopper. At any rate, too large a quantity of wood ashes on soil will cause the leaves of growing crops to turn yellow, and if too strong, to even die. (3) It is probable that the fall rot of the apple tree noted is the bitter rot. This is a fungous disease which attacks certain varieties much more severely than others. The affected tree is probably one which was very susceptible to the rot and the others which did not take the disease are no doubt resistant of it. In selecting varieties for commercial planting one of the important factors to be considered is whether or not the variety is susceptible to diseases prevalent in the neighborhood.

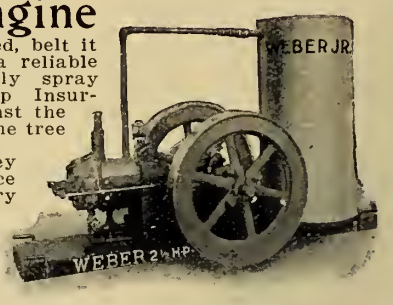
E. S. N., Vallonia, Ind.—(1) I have some young apple trees, one to three years from nursery, that did no good last season. They were cultivated well and manured with poultry manure; land is in high state of cultivation; soil a deep sand, that raises good farm crops. Twigs of trees grew but little, and leaves came out in bunches all along the twigs; trees looked healthy, but made poor growth. (2) Is chicken manure good to put around young fruit trees? (3) I scrub my young trees with soft lye soap and ashes. Will this injure the trees, and if not, will it do them any good?

Answer by Dr. Whitten: (1) If the abundance of leaves on the apple tree is an abnormal growth it may be that the trees are not of a good variety of apple. Most apple stocks or roots if allowed to grow, would produce short stems, short node growths in which many leaves are crowded close together. The chances are, however, that on account of the trees recently being established, no great length growth or twig growth was produced. It frequently happens that a tree does not make much length growth and that the short branches are just studded with rosettes of leaves. In this case the trees may not have become thoroughly established last year and a good growth may be looked for the coming season. It is not an unusual thing for newly planted trees to make only rosettes of leaves and short growth the first year, but to make up for this lack in abundant growth the following year. (2) Chicken manure is an excellent fertilizer for fruit trees. It should be used very sparingly, however, as it is a strong or concentrated form of fertilizer and may injure the plants if applied in too large quantity. Applying an excess of it is also a waste of the fertilizer. (3) The soft soap and ashes wash is a good thing to keep insects from the trunks of the trees and also to keep the bark of trees healthy and in a flexible growing condition. Unless applied very strong and in great quantity it will in no way injure the trees.

W. D. M., Denison, Texas.—After reading F. P. Vergon's article in The Fruit-Grower on the subject of mulching

SPRING SPRAYING IS When Done the Weber Way
FALL INSURANCE At a Low Premium

Take this little Engine



Weber, Jr., 2½ Horse Power.

Fasten it securely to your wagon bed, belt it to your Spray Pump and you have a reliable Power Spray that will economically spray your orchard—it's better than Crop Insurance, for it Insures your Trees against the return of those pests that destroy the tree as well as the bud.

The Old Hand Method won't do—they spray the outside but haven't the force to reach the inner branches—the very breeding grounds of the destroyer.

Just try a Weber, Jr., one season. You won't place it in storage at the end of the Spraying Time; you will find many uses for it. It makes a large woodpile look small and fits in nicely for running the feed grinder. It won't shirk if you ask it to churn and don't draw the line at running the pump. Use it a year; when the second spraying season rolls round, you will wonder how you are going to spare it long enough to give the orchard a little touch of poison.

We've built them for twenty years and sold thousands and we know, and your neighbors will tell you the "Weber Way" is the economical way.

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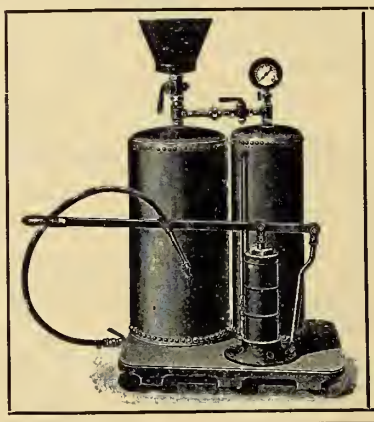

Spray Your Trees

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We Offer $1,000

For a Disease Germ That Liquozone Can't Kill.

On every bottle of Liquozone we offer $1,000 for a disease germ that it cannot kill. We do this to assure you that Liquozone does kill germs.

And it is the only way known to kill germs in the body without killing the tissues, too. Any drug that kills germs is a poison, and it cannot be taken internally. Medicine is almost helpless in any germ disease. It is this fact which gives Liquozone its worth to humanity; a worth so great that after testing the product for two years, through physicians and hospitals, we paid $100,000 for the American rights. And we have spent over one million dollars, in one year, to buy the first bottle and give it free to each sick one who would try it.

Acts Like Oxygen.

Liquozone is not made by compounding drugs, nor is there any alcohol in it. Its virtues are derived solely from gas—largely oxygen gas—by a process requiring immense apparatus and 14 days' time. This process has, for more than 20 years, been the constant subject of scientific and chemical research.

The result is a liquid that does what oxygen does. It is a nerve food and blood food—the most helpful thing in the world to you. Its effects are exhilarating, vitalizing, purifying. Yet it is an absolutely certain germicide. The reason is that germs are vegetables; and Liquozone—like an excess of oxygen—is deadly to vegetal matter.

Liquozone goes into the stomach, into the bowels and into the blood, to go wherever the blood goes. No germ can escape it and none can resist it. The results are inevitable, for a germ disease must end when the germs are killed. Then Liquozone, acting as a wonderful tonic, quickly restores a condition of perfect health. Diseases which have resisted medicine for years yield at once to Liquozone, and it cures diseases which medicine never cures. Half the people you meet—wherever you are—can tell you of cures that were made by it.

Germ Diseases.

These are the known germ diseases. All that medicine can do for these troubles is to help Nature overcome the germs, and such results are indirect and uncertain. Liquozone attacks the germs, wherever they are. And when the germs which cause a disease are destroyed, the disease must end and forever. That is inevitable.

Asthma	Hay Fever—Influenza
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Bright's Disease	Liver Troubles
Bowel Troubles	Malaria—Neuralgia
Coughs—Colds	Many Heart Troubles
Consumption	Piles—Pneumonia
Colic—Croup	Pleurisy—Quinsy
Constipation	Rheumatism
Catarrh—Cancer	Scrofula—Syphilis
Dysentery—Diarrhea	Skin Diseases
Dandruff—Dropsy	Stomach Troubles
Dyspepsia	Throat Troubles
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All diseases that begin with fever—all inflammation—all catarrh—all contagious diseases—all the results of impure or poisoned blood.

In nervous debility Liquozone acts as a vitalizer, accomplishing what no drugs can do.

50c Bottle Free.

If you need Liquozone, and have never tried it, please send us this coupon. We will then mail you an order on a local druggist for a full-size bottle, and we will pay the druggist ourselves for it. This is our free gift, made to convince you; to show you what Liquozone is, and what it can do. In justice to yourself, please, accept it today, for it places you under no obligation whatever.

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for this offer may not appear again. Fill out the blanks and mail it to The Liquozone Company, 458-464 Wabash Ave., Chicago.

My disease is .....
I have never tried Liquozone, but if you will supply me a 50c bottle free, I will take it.
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M 110-4. Give full address—write plainly.

Any physician or hospital not yet using Liquozone, will be gladly supplied for a test.

For Your Face's Sake

use nothing but the famous, old reliable, soothing and healing

WILLIAMS' SHAVING SOAP

Sold everywhere. Free trial sample for 2-cent stamp. Write for "The Shavers Guide and how to Dress Correctly."

The J. B. Williams Co., Glastonbury, Conn.

For Immediate Shipment

To close out unsold surplus for spring 1905, we offer Ben Davis, Mo. Pippin, Grimes Golden and Assorted Peach in quantities, at about half the usual prices. Write at once if any of above are wanted in quantities. Our new illustrated Fruit Book free to all.

J. BAGBY & SONS CO.
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Nursery Stock and Seed Corn

Catalogues are now ready for free distribution. The chapter on transplanting evergreens in this northwest country will interest any one. A postal will bring them. Write today.

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LeMARS, IOWA.

HERBERT RASPBERRY

Under test for 14 years at Canadian and U. S. Experimental Stations. Can be confidently stated to be the Earliest, Hardiest, Largest, Finest Flavored and Most Productive Raspberry on the market, and a strong plant maker. Plants now offered for first time. There will be large demand when berry's merits the known. 50c each; $5 doz.; $40 per 100. Send for circulars.

THE RENFREW NURSERIES CO., Ltd.
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Cider and Wine Presses

Hand and Power. Manufactured by

Free Catalogue.

THE G. J. EMENY CO., Fulton, N. Y.

Insure Your Face

The DIAMOND RAZOR GUARD attached to your favorite razor prevents accidents. You can't cut yourself. Makes shaving a pleasure. The DIAMOND RAZOR GUARD not only prevents cutting the skin, but PROTECTS THE EDGE OF THE RAZOR, because it is so made that it is impossible to shave with it unless the razor is held in proper position. The DIAMOND RAZOR GUARD is worth ten times its cost simply as a protection to a razor. A razor used with the guard will hold its edge three times as long and not need honing more than once a year. Price, postpaid, 25 cents. Send for General Merchandise Catalog of Furniture, Silverware, Churns, etc., at right prices for good goods. It's FREE. Send today.

Write us how you can get a $2.00 Razor and a $1.00 Razor Strop, all for $1.00.

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Best Nursery Stock

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C. I. WATROUS, DES MOINES, IOWA

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names and addresses interested in Fruit-Growing. Our book, **Success and Failure in Orchard Growing, by a Practical Orchardist,** sent free to anyone sending same.

Messick T. F. Co., Quincy, Ill.

P. J. BERCKMANS CO.
AUGUSTA GA
TREES AND PLANTS
FOR EVERYBODY
CATALOG FREE
FRUIT TREES

trces, I have become great interested I have a three-year-old peach orchard in which crab grass grows profusely. How would it do to mow this grass and not cultivate the orchard?

Answer by Mr. Vergon: There is no question that crab grass will answer a good purpose for mulching orchards. In fact, anything that grows out of the ground, if sufficiently decomposed so as not to be in the way about the orchard, will answer a good purpose. If the land is impoverished, coarse manure would be much better. In this case let the grass lie where the machine drops it.

Luther Burbank and His Work.

In the Century Magazine for March and April appear two articles about the work which Luther Burbank is doing in the way of plant breeding, which are real contributions to the information concerning this wonder-worker. The articles will take on a new significance, in view of the fact that Andrew Carnegie has provided funds for the continuance of Mr. Burbank's work, so that financial considerations need not concern him further. The articles in the Century are among the most interesting which have appeared, and readers of The Fruit-Grower who are interested in what Mr. Burbank is doing will appreciate them immensely. The articles are fully illustrated, showing some of the productions of Mr. Burbank, and they are written in a style which gives real information concerning the methods employed by Mr. Burbank, and the manner in which he has upset many of the theories of the old-time botanists.

While these articles will be especially interesting to Fruit-Grower readers, they are not by any means the only features of the Century Magazine which will be interesting. "Sandy," the interesting story by the author of "Mrs. Wiggs of the Cabbage Patch," is a serial story of much interest now running in the magazine, and the other features which have made the magazine so popular are maintained at their usual high standard.

Can Your Surplus Fruits and Vegetables

Readers of The Fruit-Grower are showing an increasing interest in the subject of canning the fruits which are too soft to ship, or when the price is too low to justify marketing in the fresh state. The canning of this surplus will relieve the market and tend to strengthen prices, and for that reason every reader of The Fruit-Grower is interested in the advertisement of the Raney Canner Co., Chapel Hill, N. C This firm manufactures canners of different capacity, from the small machine for canning fruits at home, up to those of larger capacity, for operation on a larger scale. The company sends with each outfit a book of instructions and these are so plain that they can be understood by any one. Circulars describing the different outfits, with prices, etc., will be sent free to those who ask for them, mentioning The Fruit-Grower. This matter should be investigated at once, before the small fruit season is upon us. Write today.

Some Good Poultry Reading.

What to feed, what not to feed, when, how and how much—these are things that trouble the old poultry raiser as well as the novice, in starting chicks, goslings, young turkeys and ducks. A little book which has just been gotten out by the Royal Incubator Company of Des Moines, Iowa, has reached us. It deals so directly and plainly with these questions, and yet in such small space and such easy, familiar style, that we feel like urging our readers to send for it. Its scope is wider than the mere matter of feeding, though that subject is given the prominence it deserves. The title is "The Proper Care and Feeding of Chickens, Ducks, Geese and Turkeys." It is sold at 10c, and it is well worth the price to everybody who raises poultry. The information and suggestions are in compact form, so that they will be put into practice every day. It is to be had only by writing to the Royal Incubator Company at the address given above, enclosing price.

Rural Mail Boxes.

Rural mail routes are increasing in number every week, and of course this means that many boxes must be provided by persons receiving mail along these routes. The Hessler Mail Box, manufactured by the H. E. Hessler Co., Factory 2, Syracuse, N. Y., is one which is approved by the postoffice authorities, and is one of the very best and cheapest boxes manufactured. The manufacturers would like to quote prices to persons interested, and would also like to secure a good agent in every community. A good proposition is offered someone to look after the interests of the company, and, when one considers the character of the box and the price at which it is sold, it would seem that a good business should be done by agents everywhere. Write the manufacturers at the foregoing address, and when you write mention The Fruit-Grower, if you please.

Pumps for All Purposes.

The Humphryes Mfg. Co., Mansfield, Ohio, would like to send a catalogue to every reader of The Fruit-Grower, describing the line of pumps manufactured by this firm. Pumps of all kinds are manufactured, for spraying, whitewashing, painting, etc., and they come in all sizes. This firm has been in the business for many years, its goods have an established reputation, and readers of this paper will be interested in the catalogue. Send for it today; it's free, and may help save a great deal of time and labor in your spring work.

The fruit-growers of South Missouri and Northern Arkansas after carefully investigating the fruit situation, feel certain that at least one-third of a crop of peaches will be harvested this year. If only one bud in 40 matures, an excellent yield is guaranteed. The prospects for a big apple crop were never better. Live stock wintered beautifully and comes out this spring sleek and fat. Immigration is tending that way, especially from the north and east, where high priced lands make it impossible for renters or men of small means to own a farm. The propositions offered by Frank E. Lott, "The Land Man," of Kansas City, Mo., on our real estate page, make it possible for a man of small means to get a farm in that attractive country and offer possibilities to fruit-raisers which are hard to secure in a colder climate with shorter crop seasons. Mr. Lott issues an attractive booklet on fruit, grass and grain farms, which he sends postpaid on request.

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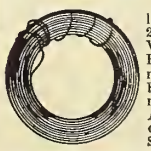

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Gardening Department

This department is conducted by Henry Field, a market gardener and seedsman of Shenandoah, Iowa, in the southwest portion of that state. Besides his regular garden work, Mr. Field has extensive test grounds, the reports from which appear exclusively in The Fruit-Grower. Those of our readers who desire information concerning any garden problem are invited to write to Mr. Field and tell him their troubles. He will be glad also to receive samples of vegetables and flower seeds for testing in his trial grounds.

Potato Planting Time.

The weather-wise claim that the proper time to plant potatoes is Good Friday. I fear, though, that it does not always work out right, for this years it comes pretty late, and we are already planting ours without waiting for Good Friday. I remember one year when it came so early that the ground was frozen and covered with snow. One old fellow here was so disappointed that he went out and scraped the snow off, trying to find a place that was not frozen where he could plant some potatoes.

We are planting mostly on clover sod upland this year. I have a 40-acre piece that has been in sod most of the time for the last twenty-five years, and had cattle fed on it. I broke it up in October last, and then this spring disked it over thoroughly both ways, and we are now planting it with a potato planter. Varieties, White Ohio, Early Michigan and Banner. Most of the Early Michigan, though, I will put on some low land that has been cropped one year. Early Michigan is a great yielder, and as the low land is very rich I will put them there and try for about 400 bushels per acre. I got better than that one year on about such land.

I am using about thirteen bushels of seed to the acre, cut pretty coarse and dropped a foot apart in the row, rows 3½ feet apart. That is pretty heavy seeding, but I believe it pays.

Are Potatoes a Paying Crop?

Yes, I believe they are. I have been growing potatoes for market for about twenty years, and I have never yet lost money on a crop of them. I have never failed to make at least a fair profit, and I have sometimes made enormous profits. One year I averaged over 300 bushels per acre on thirty-five acres, and sold at an average price of 25c. That is a low price, but with that yield there was money in it. One year with another, it costs about $20 to $25 per acre to grow them. This includes rent, seed and tending. The work of digging is not included, and we do not have to figure on fertilizers here. In 1902 I had one acre that made a carload, over 500 bushels; but that was of course an exceptional case.

I have watched and compared, year after year, to see how potatoes compared with corn as a money crop. My neighbor over the fence grows all corn, and I have lots of potatoes, and I have never failed yet to have at least twice as many potatoes to the acre as he has corn, and generally it is three to one. It has cost me less, bushel for bushel, to grow the potatoes than it did him to grow corn, and every year till the last I could trade a bushel of potatoes for two bushels of corn.

Last year my potatoes cost me $22 per acre to grow, and I got an average of almost 300 bushels per acre. They would have sold from the field at digging time for 30c per bushel, or possibly 35c. That beats corn.

Of course you must have good seed, the very best, and you must have good ground. Plant seed that is free from scab, and good, smooth stuff. A run potato is as much a nuisance as a runt pig. Good seed is cheap this spring, and it looks to me like a good time to plant potatoes. Anyway. I am going to plant more than I have planted for several years. The high price of corn will attract farmers to that, and I look for good prices for potatoes.

The Best Land for Potatoes.

People ask me sometimes if there is any danger of getting land too rich for potatoes. Not a bit of it. You can't get it too rich for them. They are gross feeders, and the richer the land the better. Be careful, though, on very rich land to not plant too thick. The tops grow large and they must not be crowded. If you have good, strong seed, the rich land is what you want.

What to Plant for Chicken Feed.

There are always little out-of-the-way patches where you would like to plant something to grow feed for the chickens, and it is a question what to plant. Why not try Kaffir corn? It will grow anywhere, on any kind of land, and will make a big crop of mighty good chicken feed. Plant the white seeded variety in hills or drills about as thick as common corn, or a little thicker. A quart will plant a quarter of an acre or more. Tend it just like corn. Cut the seed heads off in the fall and pile up in a dry place. Feed it to the chickens in the head and let them worry it around and scratch the seed out.

Sunflowers can be grown the same way. The big heads of the Russian sunflower make lots of seed. They are easily grown and should be tended like corn.

Plant Some Stock Beets.

Stock beets, or mangel wurzels, are a crop that should be more generally grown. Now is the time to plant them, any time from now till the middle of May. Plant just like garden beets, and after they get big enough to thin, thin them out to about four to six inches apart in the row. I have had as high as ten tons on a quarter of an acre. They make great feed for cows and hogs, and are fine for poultry, too. I keep mine in the cellar and carry up an armful at a time as I need them. Use from ten to fifteen pounds of seed to the acre. The seed is cheap and the crop is easily rgown.

The Importance of Good Seed.

A friend in Western Kansas, who grows garden truck by irrigation, writes me that he put in ten acres of late cabbage last year and expected to make a good thing on it, and undoubtedly would, but the seed that he bought for Flat Dutch turned out to be Savoy cabbage, practically worthless stuff, and the crop was a total loss. Just imagine a man with his money invested in ten acres of cabbage, and lots of hard work, too, and then the whole thing turn out to be worthless that way. Would you blame him for cussing a little? The man that sold him that seed ought to get about ten years. He says he saved 30c a pound on the seed buying it where he did, and lost about a thousand dollars on the bunch. It was surely a severe dose.

How to Treat Potatoes for Scab.

Even the best of seed potatoes will sometimes show traces of scab, and we always treat our seed for scab before planting it, whether it seems to need it or not. Here is the way it is done: Dissolve one-half pound of corrosive sublimate in a bucket of hot water, then add enough water to make sixty gallons, or at the rate of 1,000 parts of water to one of the drug by weight. Soak the potatoes in this solution for from one to two hours before cutting. We use a long tank that will hold about eight bushels of potatoes. We dump the potatoes in as we carry them from the cellar, and when they have been in long enough shovel them out into crates and go to cutting. The solution in that strength does not injure the potatoes nor the hands, but it would be pretty strong to drink. Possibly not really poisonous, but a good thing to let alone. Any potatoes that are left over should be destroyed for fear of harming stock that might eat them.

This will absolutely kill all scab germs that are on the potatoes, and if the ground is free from scab you will have a smooth crop. If you have only a small quantity of seed to treat, use two ounces of the drug to fifteen gallons of water, and soak them in a tub or barrel. Ask the druggist for corrosive sublimate, or mercurial bichlorid, and get the pulverized, as it dissolves easier. It is rank poison, remember; don't let the children get hold of it.

The Possibilities of Plant Breeding.

There are wonderful possibilities in the breeding and selection of plants. For instance, I have one ear of corn that just suits me. I have looked over thousands of ears of corn to get this one. I will plant it on good land off by itself somewhere, where there will be no chance of mixing it, and it will with fair luck make me about seven bushels of seed. This will plant about fifty acres, and on good Iowa corn land will make a crop of about 3,000 bushels. Just think of it. And corn will breed as true as live stock, every bit. The crop or progeny of that ear of corn will be as much alike as Shorthorn cattle all from one strain. Is it worth while? Try it and see.

Here is another way to do: I have two other fine ears, but one is too short to be just right, although it has an ideal grain. The other is plenty long in fact very long, but the grain is a trifle shallow. If I could get a strain of corn that was a happy medium between those two ears I would have just what I want. Here is the way I propose to do: I will plant ear No. 1 in the middle two rows of the strip, with ear No. 2 on the outside, in the first and fourth rows. Then at tasseling time I will watch for the tassels on the inner two rows and pull them all out before they have a chance to make pollen. The result will be that the ears on those two rows will be fertilized with pollen from the other two rows and will be an exact cross between the two. I will save my seed from them, and with a couple of years' selection I will have just the corn I want.

Try it. It's mighty interesting work; and it will pay, too. You can pretty nearly make to order any kind of corn you want, and it don't take very many years, either.

HENRY FIELD.

Shenandoah, Iowa.

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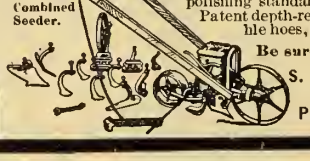

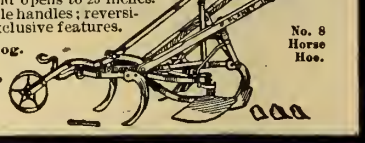

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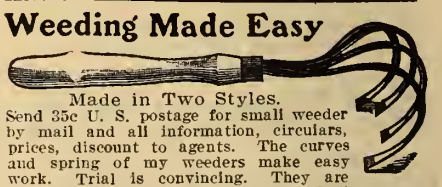

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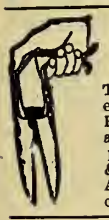

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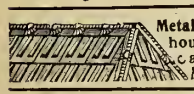

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R. F. D. No. 2.

Strawberry Notes.

At the annual meeting of the Peninsula Horticultural Society, held at Seaford, Del., some time ago, W. F. Allen delivered an address on "The Ideal Strawberry Patch." After stating that he had never yet succeeded in growing an ideal one, he submitted the following plan: Set three rows in a group, rows one foot apart and plants one foot apart in the row; then leave a two-foot alley for the pickers, then another group of three rows as before, until the field was set. He would give the very best culture possible, working the alleys with a horse and hoeing all the rest of the bed. No runners would be allowed to form. As much fertilizer and stable manure would be applied as the plants would bear, depending in a great measure on the natural fertility of the soil. An irrigating outfit would be provided to supply the necessary moisture in season of drouth. By this means Mr Allen expects to get an average yield of 20,000 quarts to the acre. He did not undertake to estimate the cost of growing an acre of berries under these ideal conditions, but we are of the opinion that the average strawberry grower would find the cost too great to grow strawberries under these ideal circumstances. And suppose you struck a big freeze, or a glut in the market, or the pickers went on strike at the critical moment, and the bills were coming due. Ah, then, it seems to me it would be poor fun.

Mr. Allen was careful, however, in saying that he was only going to try an acre like this as an experiment. There may be something in such intensive culture as this, but we are of the opinion that the expense would be prohibitive.

It has seemed to me that a very important subject for all horticultural societies and papers is the proper, and we may say improved, methods of marketing our berries. It is true, too, that there is an increased attention on all sides to this subject. A proper distribution of our berries, especially during seasons of a heavy crop, would serve often to turn a loss into a profit to the grower. There are hundreds of manufacturing and mining towns all through Pennsylvania which would use great quantities of our berries and even other fruits if it were only possible to get them delivered in good order and at a reasonable cost.

A few years ago the Adams Express company arranged a system of rates and transfers destined to reach many of these towns and small cities. But to many points the rates are so high as to be quite prohibitive, amounting in some cases to 4c per quart and never less than 2c. Added to this was a very inefficient service, sometimes failing to deliver the berries for seventy-two hours or more after they were started from here; so that they were very often in the poorest condition on arrival.

Another difficult matter was the great trouble experienced in securing a reliable commission dealer to handle the berries, there being in many places not regularly established commission houses, so that unscrupulous persons seized the opportunity to fleece the shipper, and in some instances did it, very decently. Yet in spite of all these drawbacks, for several seasons a great many berries were shipped to these points, and some money was realized from them, where those who shipped to the already glutted markets often did not get enough returns to pay the picking.

It has seemed to me that it might be possible for the grower who had only a small lot of berries to select just one point, go in person, perhaps, and make arrangements with two or three thoroughly reliable grocerymen to handle his crop on commission, and by putting up an absolutely reliable grade of berries be able to use these markets to very good advantage. These places are not only available to this section, but nearly every large berry-growing district in the country has within 200 or 300 miles of it numerous small cities whose inhabitants do not have anywhere near as much fruit as they would like, and would be glad to buy, provided they could get it in good order and at a reasonable price.

It may also be true that the berry growers' associations could make use of these markets by arranging to supply each with a certain quantity of berries each day.

Another point of great importance to the strawberry grower is, if possible, to cheapen production. The greatest field of experimentation along this line is how best to increase the fertility and prepare the land in which you are going to set your plants. There are so many expenses which are fixed, such as the work required to cultivate, set, etc., that it is of very great importance to secure a big yield. If it costs $50, for instance, to take care of an acre of strawberries and you get 5,000 quarts therefrom, your berries have only cost you 1c per quart to produce; while if your yield is only 2,500 (a good average, by the way) your berries have cost you 2c per quart to produce. Now, taking this as a basis, if there is any way to bring the yield up to the higher figure, the grower has made 2,500 quarts of berries, the price per quart, of course, determining the actual money value of your improved yield.

I believe that a careful and intelligent rotation of crops to precede the strawberries will go a very long way in helping to settle this phase of the question. It has been the practice of growers here to go out in a field where about two corn crops have been grown in succession, plow down the corn butts, drive a drag over the land, rim up some rows, sow a little fertilizer sometimes, and often nothing, down the drills, and set the plants. We do not see how it can be expected by an intelligent grower to get anything like a good yield from a patch of this kind, besides the quality being of the very poorest.

In 1902 we set out a six-acre field to strawberry plants, where the previous year cow peas had been grown. The peas were not mown for hay, but colored women and children were secured who picked the pods, at a cost of 40c per 100 pounds. From this 100 pounds of pods we got about 70 pounds of clean peas, or a little over a bushel. The yield of peas was 15 bushels to the acre, worth on an average $1.50 per bushel, so that the peas themselves were not such a bad crop.

This land we did not plow, but put a disc on it and drove over the land until all the pea vines were cut fine and thoroughly mixed with the soil. The plants were set, with an application of 400 pounds of fertilizer per acre. From this field we harvested the finest crop of the finest berries that we have ever grown.

Now, of course I do not pretend to say that a result like that will always be obtained, but I do feel sure that a cow pea fallow is a good place to set strawberry plants, because we have been doing it for several years, and always with very satisfactory results.

This problem of crop rotation as a preparation for strawberries is largely an individual one, for no rule can be laid down which will be applicable to all or even any great number, perhaps, but it is certainly important that every grower should give it attention and find out, by experimenting just what is the rotation best suited to his particular location or circumstances. I am sure that cow peas will pay an important place in the settlement of this question.

Another help in this connection is to select such varieties as will prove easy and cheap of cultivation. There are some kinds which grow so robust and make such strong, broad-leaved plants that after they get a goodly number of plants established the grass will be smothered out to a great extent.

Haverland is one of the best growers, and is very easy to cultivate. Parson's Beauty, Tennessee Prolific, Brandywine, Gandy, Senator Dunlap and many others are in this class also. While on the other hand such kinds as August Luther, Johnson's Early, Marie, Clyde, etc., make rather a weak foliage and the grass is not retarded in its growth, like it is with the very strong growers.

ROSCOE JONES.

Allen, Md.

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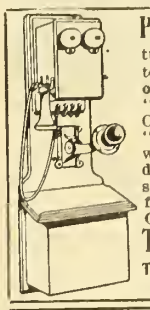

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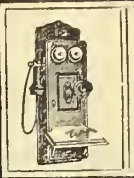

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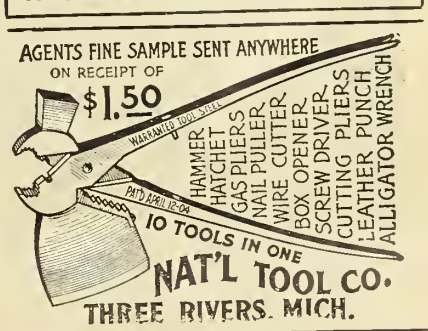

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More About Dragging Earth Roads

I promised to write something concerning road dragging in general and winter and early spring dragging in particular for The Western Fruit-Grower.

Road dragging is becoming a very common practice in Missouri. There are many hundreds of drags in this state, and they are numerous in other states.

I received a letter the other day from ex-Gov. Glick of Kansas in which he says many nice things about the drag and I am told the Kansas Good Roads Convention, held at Topeka last fall, gave hearty endorsement to the plan. In Iowa a discussion is on between those who claim to have been the first to adopt the Missouri idea in that state, while in Nebraska and Illinois some of the towns are offering large cash prizes to encourage the use of the drag.

A GOOD CLAY HILL. Illustration 2B.

A road drag is any cheap wooden contrivance that will move a little earth to the middle of the road and leave the surface smooth. Any drag is a good drag, but the split log, or double-slab, drag is by far the best. The following diagram explains how it should be made:

The directions for use are as simple as the drag itself: Ride on the drag, drive the team with one horse on each side of the right hand wheel track, with the drag following at an angle of about forty-five degrees, thus pushing the loose earth toward the center. Drive toward town, to your neighbor's front gate, and turning there, come home over the other wheel track.

"2 B" is a photograph of the clay hill just south of my house. This hill is part of a half-mile of road that has had no county or township work since 1896. It has been dragged. The grade has been built gradually with the drag.

"7 D" represents another clay hill less than one-half mile distant. If you will look closely you can discover a small brook right in the middle of the road. Its course is marked by some weed sticks. This was a dangerous place for a loaded wagon and not nice for light vehicles.

"2 D" is another view of the "2 B" clay hill. The hill was smooth and dry and hard. (These two "D" photographs were taken the same day, in fact only a few minutes apart.) It was dragged and put into this nice shape (here is one of the most remarkable features of road dragging) within twenty-four hours of the close of two weeks continuous wet weather. With dragging the "7 D" photo would have shown the same condition as the other two.

Dragging does away with mud holes and weeds and, to a great degree, with dust. Most of the dust found in earth roads is made of the clods and ruts left over from the last wet spell. These remain in the road, of course, and are pulverized into dust. Where the road is dragged moist and then bakes and packs smooth there is a comparatively small amount of dust.

Winter and early spring is a choice time to make a beginning. Drag

After the next rain perform the same operation. When this has been done four or five times the road may be widened by plowing a shallow furrow just outside the dragged portion and (with the drag) spreading the loose earth toward the middle. Special points along the road may require special treatment. This operation will make a better road out of any earth highway. The drag may be used when the road is quite wet—particularly at the beginning. The dragging always should be done before the surface is entirely dry.

when the earth is thawed on top. The result will astonish you. Drag whenever you can catch a little loose earth so as to have as much of a grade as possible before soft spring weather prevails. The more work you can do now the better for your roads next summer. Dragging often in the winter and spring is the only successful way to make haste in road dragging.

Fruit-growers should be especially interested in road dragging. I was amazed at the statements made last January in Columbia, Mo., by Dr. Whitten as to the effect of rough

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Maitland, Mo.

The Gooseberry.

Iowa, according to the last census returns, is credited with having the largest acreage of gooseberries of any state in the union. These statistics are of interest in that they are suggestive, regarding the requirements of the gooseberry, concerning soil and climatic conditions.

In the northwest it seems most at home, and in this section reaches its highest stage of perfection. As a crop it succeeds but poorly in the cotton belt region of the south, and

Illustration 2D.

does not take kindly to the long periods of bright, intense sunlight. Its nature is a cool, moisture loving plant, thought not at all an aquatic, and south of the fortieth parallel many of the best crops are grown where the plants are partially shaded. The middles of an apple orchard furnish ideal conditions for it. A good, retentive soil should be supplied, and if fertilizers are needed, there is nothing better than barnyard manure.

The gooseberry, like most typical northern plants, throws out its leaves at the first intimation of spring, and on this account fall planting is advisable. The present day varieties of gooseberries are all descendants of the native species. The English gooseberry, like the European grape, was planted extensively at an early day, but American conditions proved too rigorous for it and it was soon supplanted by improved varieties of the native type.

This work of improving the native berry has barely begun, and we may expect much of the future if the American species is to find a parallel in the history of its English cousin. Some of the best English varieties are recorded as producing fruits with a diameter of one and one-half inches.

In the old world the gooseberry is eaten considerably as a fresh fruit from the hand, and this fact has no doubt furnished a stimulus for the superior development of the individual berry. On this side, however, they are consumed almost entirely in the green state and eaten only after being cooked. This fact tends to make the situation a different one for our growers and makes the problem more the one of quantity than quality.

The rows should be placed five or six feet apart and the plants an equal distance in the row. The gooseberry is particularly impatient of drouth, and if the plants are allowed to suffer they are likely to unload their fruit. In dry seasons surface cultivation or a mulch of corn stalks or litter from the feed yard, which will retain moisture, is advisable. The best fruit is borne on the canes ranging from two to five years of age. Canes which are older than this become weakened and should be cut away to make room for younger and more vigorous ones.

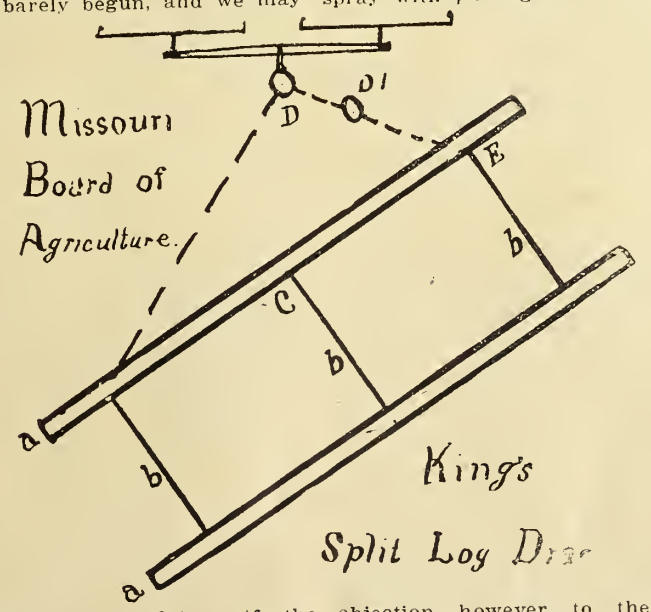
The mildew, a disease which has proven so destructive to the English varieties in this country, also attacks the native varieties, particularly in moist, humid seasons. The disease usually affects the younger twigs and leaves, and is characterized by a dirty, whitish, mould-like structure which envelops them. It may be combatted by spraying, the first application being made when the leaves are budding out, with Bordeaux mixture, or potassium sulphide, used at the rate of one ounce to three gallons of water. It is not advisable to spray with Bordeaux when the fruit is near marketable size.

The most important insect enemy of the gooseberry is the currant worm. This insect is a ravenous feeder and will strip the leaves from a large cane in a very short period of time. It seems to prefer the currant as a feeding ground, but when the latter becomes exhausted will migrate to the gooseberry as its next choice. It usually makes its appearance when the fruit is nearly grown, a time when it is not advisable to spray with paris green. There is no objection, however, to the use of hellebore or pyrethrum powder at this time. These insecticides deteriorate rapidly with age, and frequently the material purchased at the town drug store is old and weak. Such material is very much more effective if prepared by being diluted in boiling hot water.

Some of the best varieties of gooseberries for this section are the Houghton, Pearl and Champion. Some of the English varieties, such as the Industry, which are supposed to be a cross between the English and the native species, are tender in this section and the plants kill out entirely the first winter.

A. T. ERWIN.

Iowa Experiment Station.



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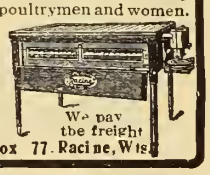

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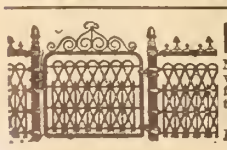

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Poultry and Fruit

T. E. Orr, Beaver, Pa.

In article No. 2 we gave rather explicit suggestions for locating and erecting the poultry houses. As to the yarding of the fowls on the fruit farm it is most desirable that they have the range of the territory set out in trees, and that they be encouraged to work and dig about the trees by an occasional handful of small grains thrown there and partially covered with earth. If they find grubs, worms and bugs they will continue the work diligently, and thus help to save the fruit trees from their worst enemies.

If one expects to have his entire fruit area occupied by hens, it is better to locate several small houses in different parts of the orchards, rather than to expect the hens to range over the entire territory from one large house. This colonization plan is much better than to yard off each pen to a specific area by the erection of high fences. The more range you can get your fowls to cover in fair weather the better it is for them; but in this plant of scattered houses and no fences one very essential element of success must not be forgotten, namely that you keep but one variety of fowls on the entire farm. Then, if a hen wanders from her own colony and joins another, no serious harm is done, as would be the case if they were of different varieties.

The Varieties to Select From.

This brings us naturally to the consideration of a very serious question, one in which the amateur is likely to err. The temptation is very strong to invest in several different varieties because he has heard that one variety is best for eggs, another for broilers, another for roasters and still another for capons; and as he wants some of each of these luxuries, he is prone to start in with three or four varieties. We lay it down as a hard and fast rule that one variety is enough for any farm, except the occasional farm of the large fancier who keeps several varieties for the purpose of exhibiting them at poultry shows. And the most successful fanciers the country over are those who have made their reputations, and their money, too, from a single variety.

In starting one must decide the question of variety for himself, and he should do this by the experience of others and not start in to experiment for himself, and in this way learn which variety pleases him best or pays him best. By this latter method he is quite likely to get things so mixed the first year or two as to disgust himself with the whole business, and thus be led to abandon it entirely. Let him study his location, his markets, his tastes and then decide, once and for all, which variety he will have, and then stick to it through evil and good report.

In article No. 2 we illustrated the fruit and poultry grounds of Messrs. White & Rice. As was seen, they breed Leghorns exclusively. No money could induce them to take up any other breed, or even any other variety of the Leghorns than the whites, because, both in theory and practice, this variety suits their location and market best. They are near New York City, the best market in the world for early broilers and white eggs, and no other variety quite equals the White Leghorns for a combination of these two products. New York City pays large prices for broilers from February 1st to August 1st, that weigh ¾ to 1¼ pounds each. You can produce a one-pound broiler from a White Leghorn cockerel quicker than from any other variety. And it is the cockerels that White & Rice wish to rid of first, so as to give them a quick income and so as to give them more room to mature their pullets for fall and winter egg production.

But Boston and its vicinity would not be so good a location for Leghorns, because Boston people want dark colored eggs and they prefer their broilers to have more meat on them—from 1½ to 2 pounds—so the Wyandottes or Plymouth Rocks are better in that location; for when it comes to producing broilers that weigh 1½ pounds or more they can be grown more quickly from these two breeds than from the Leghorns.

Again our western cities are not such good markets for early broilers as are the eastern cities—they will not pay such big prices for small birds—and the western man must strive to produce what they want. Western cities do not discriminate as to the color of the eggs—white or brown are equally acceptable to them; but they do like them best if all the eggs are of one color or the other—not mixed. And they do like nice, plump, fat broilers weighing from 1½ to 2½ pounds; and they will pay more for them if they are all of one color and give evidence of having been produced by some one who knows his business. The western cities, too, are large consumers of "fryers"—2 pound to 3½ pounds each—and roasters—3 pounds to 5 pounds each—and they do like them better if all in one coop "look as much alike as peas in a pod." Western cities, too, are each year getting to be larger consumers of fresh eggs. They are discriminating more and more each year against storage eggs, or eggs of uncertain age and ancestry. So we repeat it, "let the beginner study his location, his market and his taste, and then let him select one variety and stick to it."

Let him remember that if he selects any of the Mediterranean breeds—Leghorns, Minorcas, Andalusians, etc.—he must depend on incubators and brooders to hatch and raise his chicks; for these breeds do not become broody and do not raise their own young. So with these varieties he must make his arrangements for artificial hatching and brooding—which makes the problem much more complicated. True he will not be long in the business with the American varieties that do hatch and raise their own young, until he will depend in part upon incubators and brooders. We do not know any one who raises either fancy or commercial poultry on a large scale who does not use incubators and brooders to some extent; but one can start—in fact, one should start—with hens as hatchers and brooders in order that he may become more familiar with every detail of the business. The old hen knows a few things that have not been revealed even to the manufacturers of incubators and brooders, and it is well for the amateur to sit at her feet, or at least often to stand at her side, and learn what lessons he can from her way of doing business.

There is another class of poultry—formerly more popular than at present, that we would not pass by—the Asiatics—the big kind with feathers on their legs—the Cochins, the Brahmas and the Langshans. But of late years they have been relegated to the realm of "fancy fowls" rather than utility varieties. We know of few who now breed any of these varieties for commercial purposes—though why the Langshan, with its superior quality of flesh, should be thus neglected—except for the prejudice against black plumage, we cannot imagine.

There are several other classes of standard bred poultry that are considered by the fancier, and by him often recommended to the amateur, as good money makers that the said amateur will do best to avoid until he knows more about the business. The Hamburgs are good layers, but not equal to the Leghorns, and too small to make them desirable table fowls. The games are of excellent quality of flesh, but they do not produce enough eggs to make them profitable. The many Polish varieties are beautiful to look upon when produced and fitted for the showroom by the expert; but it requires an expert to do this, and he, if honest, will not recommend them for commercial purposes.

American, English and French Birds.

We are therefore brought to the field of these three classes if we have passed from the Leghorns; but let no one think this field is a limited one. It is extensive enough to give the widest range of choice. In this article we can only speak briefly of the American class. This class contains five breeds, Dominiques, Javas, Plymouth Rocks, Wyandottes and Rhode Island Reds. Of the two breeds first named the most that can be said about them is that they make up in part the ancestry of the Plymouth Rocks. We can but wonder why such true breeders as the Black Javas and the Dominiques should have been so neglected as they have been. Each has excellent commercial qualities.

Of the Plymouth Rocks there are three varieties—the barred, the white and the buff. The first named of these three varieties is perhaps the most universally bred variety in America, and is to be found on more farms than any other variety. For many years it exceeded in numbers in the show room any other variety, but at some of the leading shows the past two years the white and buff varieties have equalled it; and the White Wyandotte has far outnumbered it, so that its premier position as the foremost American fowl may now be justly questioned.

Of the Wyandottes there are seven varieties already admitted to the Standard, and another variety soon to ask admission. These varieties in order of their age, are the silver, golden, white, black, buff, partridge and silver pencilled. The Columbians will come next.

In these American varieties we have a wonderful range of color and considerable diversity of form. No one makes a mistake who selects any of these varieties and pushes them with intelligence and vigor from either a commercial or fancy standpoint, although it is much better to combine the two methods. The records for both egg and meat production are all with these American varieties.

There are two methods of starting in in the poultry business with any new variety. First by purchasing a trio or pen of breeding birds. It is better to start in this way in the fall or early winter. Second by purchasing eggs for hatching from some reliable breeder of your chosen variety. This is the time of year to start by the egg method, and we commend it as the cheapest and best method for the amateur to follow. He can hatch out his chicks and grow with them. He can build his houses for next winter in the summer time—the only

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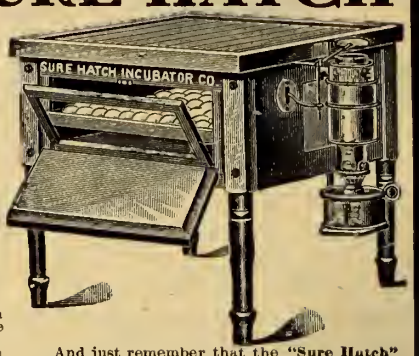

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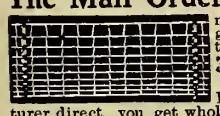

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good time of year to build a poultry house. He can learn to sort out and discard his culls as he goes along. With a small investment he has something to show for his money sooner than by any other method. True, he must buy or borrow his setting hens, but this can be done in April or May in almost every community, and these are the best months of the year to set eggs to hatch good breeding stock.

Beaver, Pa. T. E. ORR.

Feeds and Feeding For Egg Production.

A valuable lesson in feeding for egg production may be learned from nature. Fowls that are allowed to run at large and pick up their living about the ranch, lay most of their eggs during the spring months. Note the conditions that surround these fowls at this time; the weather is warm and there is plenty of food easily secured. This food consists of a mixture of grain and other seeds, green grass, clover, etc. The fowls get an abundance of fresh air and plenty of exercise—two important factors for large egg production. We should take the hint thrown out by nature and endeavor to make the conditions of spring time prevail throughout the year. Provide a cool place for the fowls in summer and a warm place in winter. Give them green food, grain, grit, and meat when practicable, but above all provide pure air without drafts and plenty of exercise.

Corn alone does not form a good food for laying hens, for it tends to the production of too much fat. If corn is allowed to form a large part of the ration, a large amount of work must be provided. This may be supplied by scattering the feed deeply in litter so that the fowls must scratch for it. Wheat forms a better food than corn, but a mixed ration is the best. The fowl not only relishes a mixed ration better, but such a ration will be more completely digested and assimilated than one composed of only one kind of food. A ration made up of corn, wheat, oats, barley, bran, shorts, clover or other green food such as mangel wurzels, cabbage, etc., ground fresh bone, and fresh meat scrap would, when properly proportioned and varied from week to week, be excellent for egg production.

As to the proportions of the various kinds of food to use in making up a ration space will not permit more than more than an illustration of the subject. Professor Wheeler, of the New York state Experiment Station, suggests a daily ration made up as follows: Cracked corn, 1 pound; wheat, .75 pound; corn meal, .75 pound; wheat middlings, .5 pound; buckwheat middlings, .5 pound; animal meat, .5 pound; fresh bone, .66 pound; and young green alfalfa, .75 pound. This forms a ration containing 1 pound of protein, 3.75 pounds of carbo-hydrates and .35 pound of fat, and having a nutritive ratio of 1:4.6; that is, 1 pound of flesh forming food to an equivalent of 4.6 pounds of heat and fat-forming food. This daily ration would be sufficient for 100 pounds live weight; that is, it would feed twenty 5-pound hens or thirty-three 3-pound hens.

At the Utah Agricultural Experiment Station the average of three years' experiments showed that Leghorn pullets consumed in a year 63.6 cents worth of food per fowl, and laid 167 eggs, which cost 4.6 cents per dozen and which brought $1.84. The profit from each hen was $1.20, or 188 per cent on food consumed.

J. J. VERNON.

New Mexico Experiment Station.

Field Strawberry Culture in Tennessee.

In the outset of this article, will say the ideal field for strawberries is one bounded on the north by a strip of woodland, with gradual slope to the south and southeast. Such fields will ripen their fruit several days earlier, being protected from cold north winds and late frost, and the southern slope giving it much more sunshine and warmth. But as such fields are not common, we will take any field that is fertile enough to produce good yields of ordinary crops, that is rolling enough to drain itself well. Sow the field in cow peas the summer previous to the spring you intend to set the plants. I emphasize the word spring, for it is decidedly the best time to set plants; in fact, it is about the only time to set plants in this latitude, and get a good stand, for notwithstanding care in firming the soil around plants, many will be pulled up during freezing weather if set in the fall.

Having harvested the crop of pea hay, the field should be turned as deep as possible and thoroughly subsoiled, so as to get a deep, loose bed of earth to hold moisture in dry times. In such soil the roots will go deep and go through a severe drouth and come out in fair condition.

This turning and subsoiling should be done in late fall or any time during winter that the ground will do to work, for when the first work days of spring come you should be setting the plants and not turning land. Setting should all be done in late February and early March if possible, in this section.

Now, to get your field set so it will be a pleasure to yourself and visitors to behold, use the following method: Harrow and drag the field till perfectly level, then take a light five-row marker, with runners three feet apart, and have a man to mark off land perfectly straight. This makes every row exactly three feet apart, which can hardly be done any other way. Follow this marker with single-shovel wooden plow with long broad shovel to get a good deep furrow for fertilizer. Sow evenly in the furrow thus made from six hundred to one thousand pounds per acre (according to fertility of soil) of fertilizer composed of one-half cottonseed meal and one-half high grade fertilizer, well stirred together. Run a plow in the furrow to thoroughly mix the fertilizer with soil, then take twisting shovel and list on this; now take drag again and get your field level once more, so you can use the marker once again. Start first runner of marker in first row and lay off land again, and you have a nice straight line to set plants in directly over fertilizer. After this marking is done, or in fact while it is being done, have another man marking cross-wise of field with another marker with runners fifteen inches apart. This marker can be made with fifteen runners and be pulled very easily by one man. Thus you have your field checked and ready to set plants. If the man at the marker is a careful hand the plants should be as straight in row as if set by a line. This may seem like too much trouble, but it is really quickly done, and gives one much pleasure in hearing others praise the neatness with which the work is done. Then plants thus set are much easier cultivated than those just set zigzag and crooked in the row. After the setting is completed commence cultivating and keep up till middle of September, or even later. Cultivate shallow and often, to keep down weeds and hold moisture. Never tolerate weeds and grass in berry field; fight them as you would an enemy, for weeds are great drinkers, and rob the berry plants of the moisture they should have. Use the hill or single plant system, as they are easier cultivated, and make larger berries, and we believe more of them; and then large berries must be grown nowadays if we find a good market for them. By hill system we mean every runner must be kept cut off before it takes root. Plants grown by this method, and all runners kept closely cut, will make very rapid growth and be prepared to bear an enormous crop of berries, single plants often bearing a quart or even more. We need no winter protection here, so do not mulch until just before blooming time, which is done to keep berries clean, and this important part should not be neglected, for nothing is more unsightly than dirty, gritty berries.

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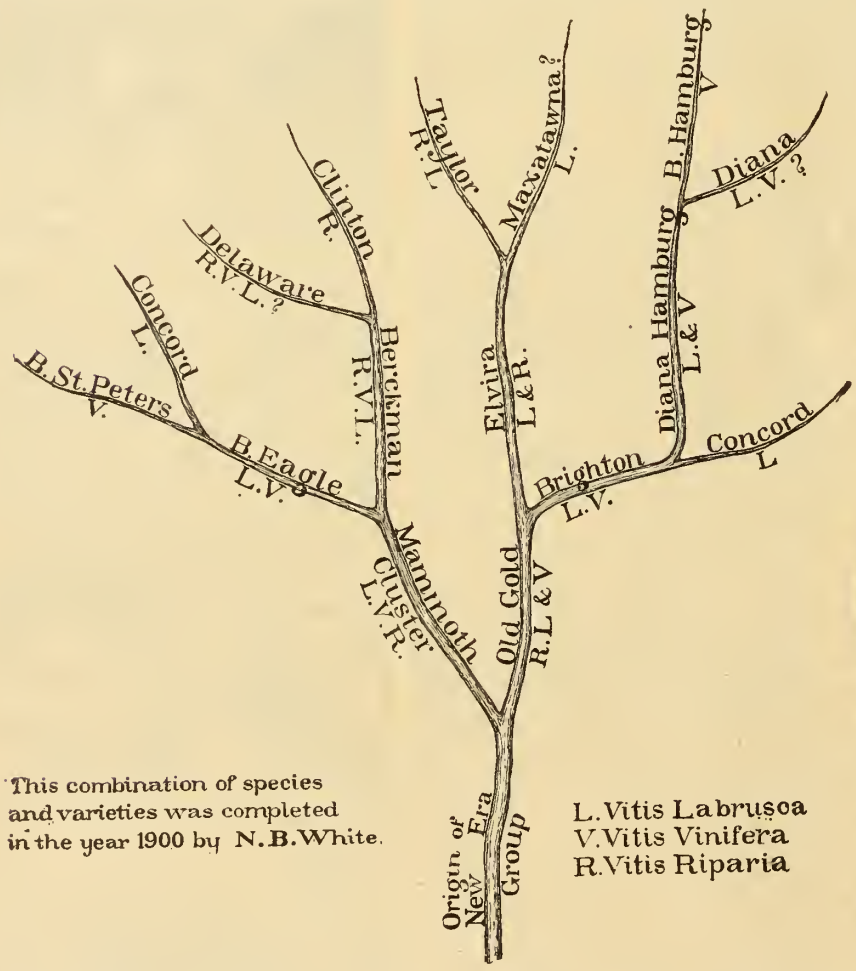
Breeding Grapes.

Recently we referred to the work of Mr. N. B. White, Norwood, Mass., and his work in hybridizing grapes. Mr. White has produced what he calls the New Era group of varieties, and sends us the accompanying diagram, to show the ancestry of this group. In regard to same Mr. White says:

"In the first place, the three species therein combined, viz: V. Labrusca, V. Riparia and V. Vinifera, are the source from which our best grapes have come, and as I believe, always will come, or that one or more of them will always be found in our best table grapes, as in the Delaware, Amber Queen, International, and King Phillip; all of which have the three species combined.

"It will be seen that the 'New Era' has the three species combined through many varieties of those species. The great advantage of thus combining so many species and varieties, is that our native grapes have been growing together, many times hybridized and crossed so that when planted, will not come true to seed, showing that the seeds are of a compound nature to begin with, and that they hold in their composition characters that we know nothing of, but by hybridizing and crossing, we put into the composition characters that the foreign species, notably the sprightliness furnished by Vitis Vulpina (Riparia), to all combinations that include that grape, and it is just that chara ter that makes the iKng Philip superior to many of the foreign grapes. It gives to it a winey character that is never cloying, as are many of the excessively sweet Vinifera grapes, and it is a noteworthy fact that there are many people in California that are tiring of the very sweet Vinifera as a table grape.

"As hybridizing and selection is the short road to success, I am of the opinion that the best grape in the world will be produced in this country and within a very few years, and that that grape will be a combination of our native grapes with a slight infusion of the foreign blood."



Fertilizing Apple Trees Individually.

One of the most successful apple growers in New York state, and probably the most uniformly successful grower in Oswego county, is Mr. Frank A. Willis of Pulaski. Mr. Willis has an orchard of about eight acres and the average annual yield is about 300 barrels. The fruit is so fine that it sells readily and brings the very highest prices, from $2 to $3 per barrels. This orchard was unproductive under careless management. Mr. Willis became interested in the care of his orchard in 1891 and has cultivated, sprayed and fertilized every year since.

Before improved methods were undertaken, the orchard was grown up to suckers and underbrush and had not borne a respectable apple for years, although the trees were old enough and large enough to bear big crops. The trees were trimmed out thoroughly and an application of barn manure given to start the growth; and of potash to encourage the formation of fruit buds. When the trees began to blossom, they were sprayed thoroughly four times in the spring with paris green and bordeaux mixture to kill the worms and fungi. Hogs were turned into the orchard to keep the growth of grass down and to eat the falling fruit, thereby destroying the larvae of injurious insects. The land has been plowed shallow and harrowed at frequent intervals several times during the past few years, and leguminous plants grown, such as clover, peas, etc. The annual fertilizing with complete commercial fertilizers containing a little nitrogen and strong proportions of phosphoric acid and potash has not been neglected. In 1897, the trees first bore a full crop of 250 barrels and since then they have borne every year. Some years the crop will be larger than others, but most of the trees bear every year. This, Mr. Willis believes, is due to the fact that the leaves are kept clean by spraying and we do know and take our chance with the known and the unknown for an improvement, and the more good things we put in, the better our chance for getting out something choice, either by a mingling of the characters that we put in, or by their uniting with the characters already there. The characters of the species and varieties of grapes that compose the 'New Era' combination are such that the chances are good for getting something choice when the seeds of that combination are planted. The writer has vines of it that should fruit this year and others that should fruit next year. They all show characters quite different from any individual grape put into the combination.

"The writer has several other combinations having more species combined than the 'New Era', which are giving large fine clusters of fine grapes, some measuring from ten to fifteen inches in length, and as yet have not been affected by mildew or rot, and ripen early. Now, when it is considered how many centuries it has taken to bring the foreign grapes up to their present size and quality it does not require a very great stretch of imagination to believe that those grapes will be surpassed in this country in a very few years, when the rapid progress that has been made in a single generation is considered. I say surpassed, because we have in this country grapes that have qualities that have never been found in the trees well fed with fertilizers. Mr. Willis feeds his trees as he would his animals. Instead of giving each tree an exact amount of fertilizers, he applies the fertilizer as he thinks the tree needs it. If a tree has borne an extra amount of fruit in any one year, that tree gets more fertilizer to reimburse it for the strain made on its vitality. Of course the large tree and the tree that seems to lack vigor, gets more fertilizer than the smaller and the more vigorous tree. Mr. Willis now has disposed of his dairy and uses commercial fertilizers almost exclusively. He tells the writer that he often spreads fifty to seventy-five pounds of commercial fertilizer under one apple tree, placing it well out away from the trunk, where the feeding roots are. The roots, he says, often extend many feet farther than the ends of the branches. Mr. Willis uses the brand of fertilizer known as 2-10-10. This brand contains 2 per cent ammonia, 10 per cent phosphoric acid and 10 per cent potash and is admirably adapted for general fruit-growing. There are thousands of small orchards in New York state that might be rejuvenated in a similar way and made to produce a profit to the owner instead of being an incumbrance to the land and an unsightly object to passers-by. There is no particular secret to it. Trimming, spraying and fertilizing will do it every time. L. J. FARMER.

Pulaski, N. Y.

Set Strawberry Plants with a Trowel.

I see some plant growers and others engaged in strawberry growing advocate setting strawberry plants with a spade. That might do in sand so light as to run the spade hole full, but for any other kind of soil it is a backset that the plant does not recover from for several months, and I do not think ever. It is like chopping off a limb with a dull ax.

Plants should be set and not stuck in the ground like the stake that marks the row, and the only way to set a plant is to set it. This can only be done with a good setting trowel, and then set the plant so the roots are spread out and well and evenly tamped. I have tried the spade and plant setters; I have Kellogg's great plant setter, but it is no good, as they have discarded it. I also tried a machine plant setter, but it was a failure; but the spade was worse than all. There is no man or boy that can make a hole with a spade and get the dirt at at the ends of the roots well tamped. There will be an air chamber in 95 per cent of the plants.

I go to the blacksmith shop and have steel trowels made of good steel that will keep bright. They are 12 inches long, handle and all, and 3 inches wide at the handle and taper down to a sharp point, with a nice, even curve from the handle to the point. And my men set the plants, and they grew from the start, and never one lost. One man will set about one-half an acre per day in this manner. H. W. HENRY.

La Porte, Ind.

I couldn't afford to be without the best fruit paper in the United States, and it shall always be a welcome visitor at home.—A. A. Stuckman, Bucyrus, Ohio.

The Fruit-Grower is just the paper fruit-growers need, and now that we have an Eastern representative we are more than ever pleased with the paper.—J. H. Fortenbaugh, Mechanicsburg, Pa.

DO THIS NOW

SPECTACLE WEARERS.

Just send me your name and address and I will do this: First I will mail you my Perfect Home Eye Tester, free. Then (after you have sent me your test) I will mail you a Perfect Fitting Five Dollar Family Set of Spectacles for only $1, which will include a pair of my Handsome Rolled Gold Spectacles, absolutely free of charge. I am just doing this to prove to every spectacle wearer in the world that my Spectacles are the most perfect-fitting, clearest and best in the world today, and I will return your dollar as cheerfully as you send it, if you yourself don't find them to be the finest, clearest and best you have ever bought at any price, anywhere. Address:—

I WANT AGENTS ALSO.

And any man or woman (also storekeepers), without any previous experience whatever can fit the weakest eyes with my Improved Metal Eye Tester, which is so simple that anyone can test with it with absolute correctness. If you are not earning at least $25.00 weekly don't delay another minute as my agents are making from $25.00 to $100.00 every week, selling my famous Spectacles, either in their homes, traveling, or in stores. My Agent's Outfit includes my Latest Improved Metal Eye Tester, a Handsome Traveling Spectacle Case and everything else necessary to start you right, also the necessary documents showing that Agents need no license anywhere.

Write me at once as this is the best time to begin. Address:—

DR. HAUX SPECTACLE CO., Haux Bldg., St. Louis, Mo.

NOTE.—The above is the largest Mail Spectacle House in the United States, and perfectly reliable.

Sprague Canning Machinery Company

Sales Office 42 River Street CHICAGO, ILL.

$20.00 AN EAR

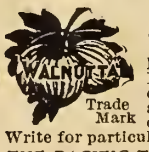
FOR 25 EARS, $500.00

Is what the first prize winner will get in the FARM, FIELD & FIRESIDE

$3,000 PRIZE CORN CONTEST

All subscribers to paper can enter without extra cost. Price, $1 a year for one of the oldest and best farm weeklies. Special terms to agents. Contest closes Jan. 1, 1905. Write for particulars. FARM, FIELD AND FIRESIDE, 50 Masonic Temple, Chicago.

GRAY HAIR RESTORED



Trade Mark

For Staining Gray, Streaked, Faded or Bleached Hair, Eyebrows, Eyelashes, Switches, Beard or Moustache, use WALNUTTA HAIR STAIN. Entirely harmless and does not wash or rub off. Contains no poisons. Lasting and easily applied. Gives a uniform color in Light Brown, Dark Brown or Black. Is not Gummy or Sticky. Absolutely Guaranteed. Druggists sell it. Agents make $3.00 per day. Write for particulars. Price 60c., sent plainly wrapped by mail, postpaid. TRIAL SIZE, 20c.

THE PACIFIC TRADING CO., Office: 89 Nichols Building, ST. LOUIS, MO.

PILES

NO MONEY TILL CURED. 27 YEARS ESTABLISHED

We send FREE and postpaid a 232-page treatise on Piles, Fistula and Diseases of the Rectum; also 108-page illus. treatise on Diseases of Women. Of the thousands cured by our mild method, none paid a cent till cured—we furnish their names on application.

DRS. THORNTON & MINOR, 1003 Oak St., Kansas City, Mo. and 3969 Olive Street, St. Louis, Mo.

RUPTURE

YOU PAY NOTHING UNTIL CURED.

A permanent, quick and lasting cure guaranteed. No cutting, no pain and no detention from business. Consultation and examination free. Call or send for free book, which tells all about rupture or hernia, with testimonials.

Dr. Ernest Henderson, 103 W. 9th St., Kansas City, Mo. *N. B.—I am also an expert truss fitter.*

Advertising in Horticulture.

One has but to look over Country Life or any other Horticultural paper carrying a number of advertisers to see that the science of successful, practical horticulture may be summed up in the words, "Successful advertising." The fruit-grower is beginning to take notes from men in other commercial lines and has almost come to the conclusion that success depends on his catching the eye of the public in some manner or other, calling the direct attention of the customers and probable customers to his superior products.

While the larger dealers in fruits have seen the necessity of amusing the public or making it satisfied with itself, the fruit grower has been studying the methods of grass culture, clean culture and pruning—he has paid more attention to the theory of horticulture than to the direct and practical methods of turning his products into dollars and cents. On both ends of the line of practical horticulture, advertising is considered a necessity. The Nurseryman has long known the necessity of careful advertising and the most successful men in these lines are the greatest advertisers. Nearly every company has some catchy word or phrase, some new fruit or fake to catch the attention of the probable buyer. In methods of advertising and catching the ear and the dollar of the public as well as in all other lines pertaining to their work, the nurserymen are far ahead of their brothers in the various lines of practical horticulture. The methods used by some of the nurserymen to catch the public eye are interesting novelties for those who are interested and who have an experimentive mind; heated discussion as to the general value of some worthless fruit, or fruit generally worthless, but doing well under certain localities; the working out of some horticultural theory which they know cannot be proven untrue till they have something else to put before the public; really artistic photographs by some of the more up-to-date men; manuals for planting and pruning and the like. These are some of the methods used by the various companies. Some use them all and some use only the best methods. Perhaps no one horticultural theory has been so well worked as the "whole-rooted trees" idea was up to within the last two or three years. The controversy as to whether Ben Davis is a valuable market apple or not has been quite as much the cause for its extensive planting as the fact that it is a heavy and regular bearer.

In all lines, successful advertising is the measure of successful horticulture. The name "Wizard of Horticulture" has been worth quite as much to Luther Burbank as has been his valuable creations. One forgets the creations and turns his attention to the man. He has taught the public to look in his direction. Now he can turn most any of his seedlings into a bank account and if it proves a failure we are pointed to the wonderful seedlings that have become a part of every orchard.

Very often it is a phrase that amuses the public which sells the fruit. Hale's "Same all through, U See Top U See All," appeals to our appreciation of humor. I remember seeing a sign painted on a roadside fence by some traveling evangelist, "Jesus Heals." Underneath some irreligious wag traveling for quite another sort of a master had written, "I Use Cactus Oil." Such an advertisement shocks and at the same time excites our appreciation of the ridiculous. A similar advertisement is used by one of the Southern strawberry growers and his crates come North bearing "The Lord might have done better—but he didn't." Such a crate turned towards the street would attract the passer-by and if the fruit was as good as the sign seemed to indicate it would find a buyer in the curious shopper.

The all important point to be taken into consideration by the grower after he has produced his fruit and carefully packed it for the market is the methods of successful advertising. He must find some way, other than the tasting of his wares, in which the public may know of the fine quality of his fruits. After the first trial the public must be taught to look for his peculiar brand knowing that it means better and more honest packing than any other brand in that market. The public always admires a big patch of red paint with black letters to set it in relief and if these black letters can interest, shock or amuse the reader, perfect uniform and well packed fruit will immediately find a buyer.

GEO. O. GREENE.

Amhurst, Mass.

Close Planting of Apple Orchards.

I desire to record some personal experiences along the line of orchard planting and fruit-growing and will not borrow from anyone, but confine myself to my own observations. Eleven years ago, after becoming a thoroughbred horticultturist (in theory), I acquired forty acres of land and, after making a diagram of same, proceeded to plant apple trees, working on the theory of close-set rows with wide spaces between them, running north and south, planting the trees sixteen and one-half feet apart and rows twenty-six feet wide. After deducting a strip of two rods wide from two sides of the land I had room enough for 3,696 trees, or forty-eight rows, with seventy-seven in a row.

In planting I followed the idea of making every other tree a victim of the ax in future years, when the trees became crowded. I think this theory is almost universally commended by the "smart ones," but in commenting on it they always add to the statement, "He will never cut out the alternates, because of lack of nerve," which sounds all right if you know the party I used as alternates Missouri Pippin largely and have found them mighty good bearers, but lots better "dyers," as fully one-fourth of them have gone out in twelve years. I believe this plan of planting an orchard to be correct, as when the trees are small they help shade each other, and I, at least, have not suffered from so-called "sun scald."

Thus far in my fruit-growing experience I feel very well satisfied and hope to keep it going. Not having sufficient range of varieties to compete with county exhibits, I have confined my efforts to invividual plates and have made three separate showings in as many years at our Southwestern Iowa horticultural meetings, resulting in winning first premium for each plate in every exhibit.

But enough of this, and now to come down to business. Some time since I read in the columns of your valuable paper something like the following: "Yes, the plan of thick setting of apple trees with a view of thinning is a good one," coupled with the remark, "I would like to see a photograph of the orchardist that had sufficient nerve to take an ax and chop out the alternate trees."

Not having the address of the above party nor a photo that does me justice, I write in hopes of this article catching his eye, and will say further "I am the man," and if he will pay for the expense of the picture I will get one taken, together with my ax, the demoralized trees and will include another "feller" in the picture who is helping me.

There is one phase of the subject, so far as I have read, that has been entirely ignored; that is, the supply of good obtained in this work. Apple wood is of the very best, and the trees furnish an incredible amount. Perhaps it is merely the exercise of a little common business sense that governs the whole matter. You have made no request for this or any other article from me and if it should fail to find a lodgement in your paper I hope and trust we may all continue on our several ways and I may continue to read your paper with ever increasing profit. Am ready to pronounce it the "king of all fruit papers." Yours for more apples,

F. P. SPENCER.

Randolph, Iowa.

The summer meeting of the Indiana State Horticultural Society will be held at the state forestry reservation, near Henryville, Ind., August 9 and 10, 1905. Particulars can be secured later from W. B. Flick, secretary, Lawrence, Ind.

It takes a good dealer to sell right lamp-chimneys when wrong ones pay so much better.

MACBETH.

The Index tells you, in ten minutes, all you need to know for comfort with lamps and the saving of chimney-money; sent free; do you want it?

MACBETH, Pittsburgh.

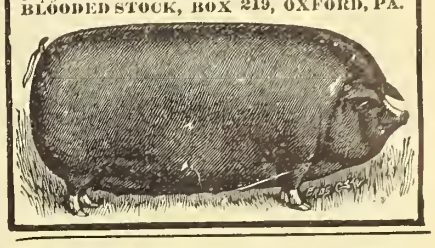
Many Claim Jerseys Superior

to every other milking and butter-making breed. Why? It will be thoroughly argued and questions answered in Blooded Stock for April. Mr. S. E. Nivin, Landenburg, Pa., and C. I. Hood, Lowell, Mass., are of international reputation and head the list of contributors.

Blooded Stock

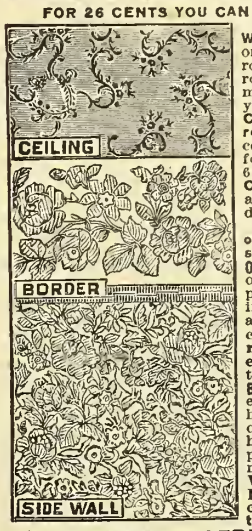
will devote nearly every column in April to this fascinating subject. It will teach its readers how to handle Jerseys to get highest percentages of cream and milk. You must subscribe! 25c a year.

May Blooded Stock will be given over to Poland-China Swine. Send for free sample copy and handsome booklet. Do it now.
BLOODED STOCK, BOX 219, OXFORD, PA.



WALL PAPER OFFER.

FOR 26 CENTS YOU CAN PAPER A ROOM.



Our New Plain Floral Wall Paper, as illustrated, only 1½ cents per single roll, 3 cents per double roll, handsome border to match, only ½ cent per yard (8 yards for 1 cent) **Cost of this paper for a room** 11x11 feet, height of ceiling, 9 feet, is 20 cents for sidewall and border 6 cents for ceiling, **TOTAL COST ONLY 26 CENTS,** allowing for two ordinary doors and windows.

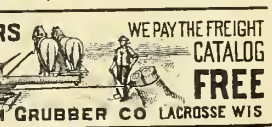
DON'T BUY A ROLL of WALL PAPER until you see **OUR FREE SAMPLE BOOK OF NEW PAPERS** and learn our astonishingly low prices, wonderful values in gilt, embossed, bronzed and ingrain papers, **at 6 cents to 20 cents per roll, same as dealers everywhere ask 12 cents to 60 cents per roll. THE BOOK OF SAMPLES IS FREE,** explains how to order, how to tell how much to order, tells all about how to hang paper, how to make paste, how to select harmonizing colors, etc.

Write and ask for Wall Paper Samples and the complete book **will be sent to you by return mail, postpaid, free.**

Address, **SEARS, ROEBUCK & CO., CHICAGO ILL.**

SAVE MONEY by buying the "MEND-A RIP" and do your own repairing. Will sew anything from a buckskin glove to the heaviest tug. Will rivet tin or leather. Made of forged steel. Agents make from $3 to $15 a day. Write now for special sample price. **J. E. STROYER & CO., Englert Street, Rochester, N. Y.**

STUMP PULLERS SEVEN SIZES $17.50 UP



WE PAY THE FREIGHT CATALOG FREE

DEPT L W.SMITH GRUBBER CO LACROSSE WIS

GAIN ACRES by clearing that stumpy piece of land **THE HERCULES** Stump Puller pulls any stump. Saves time labor and money. Catalog FREE. **Hercules Mfg. Co., Dept. 37 Centerville, Ia.**

BUY THE BENNETT STUMP PULLER TILE DITCHER Handy Farm Wagon & CORN HARVESTER Cat. each free. **H. L. Bennett, Westerville, O.**

FREE 118 PIECE DINNER SET

DON'T SEND MONEY—WE PAY FREIGHT.

THIS DINNER SET consists of **118** pieces of the handsomest chinaware ever manufactured. ***It is the largest Dinner Set ever offered by any firm in the world as a premium.*** Made of genuine porcelain china, guaranteed full size for family use, each piece magnificently decorated with clusters of red rose buds with delicate sprays of green leaves arranged in graceful festoons. The design is burned into the ware giving it that soft velvety glaze only found in the most expensive French china. ***Each piece is heavily traced with pure gold lines,*** knobs, handles and borders, and in addition the borders are exquisitely embossed. This grand set of dishes given ***absolutely free*** to every lady who will sell only a few pounds of our celebrated brand ***Red Cross Coffee. We mean just what we say.*** Sell a few pounds of our Red Cross Coffee and the Dinner Set is yours. ***We are determined*** to have every lady in the land use our fine coffee and to make it easy for you to introduce it to your friends, we will give for a short time ***with each*** pound of Red Cross coffee a beautiful imported three-piece Tea Set as shown in picture. This Tea Set is exquisitely decorated with flowers and birds of many colors, and each piece gold traced. This is an offer positively without a parallel. ***Think for a moment*** how easy it would be to sell a few pounds of coffee with such an inducement.

All we want is your services in introducing our Red Cross Coffee, and if you will ***send us a postal*** giving us your name and address we will send you by return mail a set of our beautifully illustrated offers free. ***Write to-day. You will be simply delighted.*** In addition to the Dinner Set, we give Stoves, Couches, Rockers, Parlor Suites, Bed Room Suites, Jackets, Capes, Skirts, Hats and everything in wearing apparel, in fact you can furnish your home from top to bottom and clothe yourself by selling our Red Cross Coffee. ***You do not spend a cent. We pay all freight charges. You cannot be out a single cent. We take all Risk.***

We ship the coffee to you and send you your premium ***with the coffee*** and also send the three-piece Tea Sets all together, and if you are not perfectly satisfied with everything, you may return the entire shipment ***at our expense.*** Nothing fairer than this, Is there?

Write to-day for our illustrated offers, order blanks, etc.

RED CROSS SUPPLY CO.

270 South Main St., ST. LOUIS, MO

FREE WITH EVERY POUND.

Are You Looking Ahead?

To the man looking ahead the Southwest has an urgent invitation. The opportunity is today when investment chances are good and homes can be purchased at from one-tenth to one-half the prices asked in the North and East.

To the Homeseeker.

Through the M. K. & T. Land Bureau, thousands of acres of rich farm lands (improved and unimproved), located along the line of the Missouri, Kansas & Texas R'y in Missouri, Kansas, Indian Territory, Oklahoma and Texas, are now offered for sale. The lands are especially adapted to the growth of corn, wheat, oats, fruits, vegetables, rice, cotton, sugar cane and for stock farming. The lands are well located as to markets, schools, etc.

To the Investor.

All over the Southwest, cities and towns are growing up, expanding, requiring more, demanding more, peopled by eager, pushing, wideawake citizens, who see the virtue of encouraging enterprises of every kind, the needfulness of getting more and better facilities, and more hands to develop the country.

The oil and gas fields of Kansas, Indian Territory and Oklahoma are practically new and offer wonderful opportunities for development along commercial lines.

BRIEFLY THE CONDITION IS THIS:

The Southwest is really in need of nothing save people. More men are wanted. In the Southwest are vast areas of unimproved land—land not yielding the crops of which it is capable. The same thing, in a different way, is true of the towns. Few lines of business are adequately represented. There are openings of all sorts—for mills and manufacturing plants, for small stores of all kinds, for banks, newspapers and lumber yards. Mechanics and professional men, both are in demand.

We are in possession of all sorts of information valuable alike to the investor and homeseeker. If you are interested, tell us what you want, how much you have to invest, and we will gladly furnish the information.

Write today for a copy of our book "Business Chances." It's free. Address

GEORGE MORTON,
General Passenger and Ticket Agent,
ST. LOUIS, MO.

The CHEAPEST FARM LANDS

In the United States today—soil, climate, markets, transportation facilities, and all considered—

Are SOUTHERN LANDS

They are the best and most desirable in the country for the truck and fruit-grower, the stock raiser, the dairyman and the general farmer.

Let us tell you more about them. The Southern Field and other publications upon request.

M. V. RICHARDS, Land & Industrial Agent, Southern R'y and Mobile & Ohio R'y, Washington, D. C.

CHAS. S. CHASE, Agent, 722 Chemical Bldg., St. Louis, Mo.

M. A. HAYS, Agent, 225 Dearborn St., Chicago, Ill.

Best Thing on Wheels
FREE RECLINING CHAIR CARS
ON THE
Henderson Route
ALL TRAINS BETWEEN
ST. LOUIS, LOUISVILLE
AND KENTUCKY POINTS
SPECIAL RATES
One-Way Colonist and
Round-Trip Homeseekers

When you travel, why not be comfortable? The up-to-date equipment, the safe and convenient train schedules offered by the HENDERSON ROUTE and the direct connections made in St. Louis Union Station with all trains from the West and Southwest solves the problem.

If you contemplate a trip, take the time to write us.

Insist on your ticket reading via St. Louis and the Henderson Route. This will insure you comfort in travel.

ASK US FOR RATES.

F. G. CUNNINGHAM, - - T. P. Agt.
W. C. LINDSAY, - - - G. Agent.
206 N. Broadway, ST. LOUIS.

WE CURE ECZEMA
Salt Rheum, Tetter, Piles, or any skin disease. This cure is permanent. We will send you a 25c box free. Send 10c to pay postage and packing. Empire Remedy Co., 419 Kansas Ave., Topeka, Kas.

Wire Fence That Lasts.

Persons who buy wire fence are interested in the durability of the same—it is the wearing qualities which make the fence of value. Among all the makes of wire fence on the market, the Page Woven Wire Fence has always had a reputation for its lasting qualities, and the following report from the man who bought the first of this fencing ever sold will be interesting, in showing the durability of the fence:

"In the fall of 1884 I gave Mr. Page an order for 80 rods of Page Fence—which, by the way, was the first fence he ever sold. This fence was erected in the summer of 1885, has had no repairs except new posts where they

have rotted off, has given me great satisfaction, and from present appearance will be a faithful servant through all my declining years." This letter was written by Austin Fitts, Rollin, Mich., and the accompanying illustration is made from a photograph of the fence, after twenty years of service. This is an object lesson of value to all who are interested in fence and fencing.

Of course Fruit-Grower readers know that the Page fence is made by the Page Woven Wire Fence Co., Box 324, Adrian, Mich., who will be glad to send catalogues and descriptive circulars to those who will apply for same.

Bee-Keeping Peculiarly Profitable.

City people, villagers, farmers—especially the women folk—find bee keeping fascinating, healthful, profitable. It is not difficult to handle bees properly. Like all other employments that bring excellent returns, bee keeping needs some study, care and good judgment. Lack of knowledge of the value of honey bees and a peculiar fear keeps many from this—an occupation that they would like after they had learned its first principles.

There are no secrets about handling bees, but there are methods that come only from experience which the amateur must know before he can succeed.

Men, who have made a success of bee keeping, send their practical every-day experiences to a paper called "Gleanings in Bee Culture." Everybody who gets this paper receives the benefits of these experienced men. "Gleanings" (as this bee paper is familiarly called by its thousands of friends) is published by the veteran bee men, A. I. Root Company at Medina, Ohio. It is a semi-monthly paper, overflowing with easy-to-read facts about honey, honey bees and their habits. It is a regular course of instruction in the art of setting bees to work so as to bring profit and enjoyment to their owners. It has a question and answer department, where all inquiries are answered free of charge. It tells how to protect bees from their enemies; warns readers of costly mistakes and tells how to prevent them; explains all the "ins and outs" of the business.

The bee works free and there is every reason why more people should make money with them. "Gleanings in Bee Culture" is authoritative and edited by actual bee-handlers. Over 20,000 people read it now. All our readers can have a copy free by sending their names to the above firm on a postal, or they can have a six months' trial subscription for 25c.

$2,000 For Horticultural Experimenters

In the last issue of the Minnesota Horticulturist, the offical organ of the Minnesota State Horticultural Society, appears the announcement of a prominent Minnesota nursery who offer a cash prize of $1,000.00 each for a new plum and a new cherry which shall meet certain requirements as to size and quality and prove hardy enough for successful culture in Minnesota and adjoining states. Minnesota has already taken a prominent position in the creation of hardy apples, as witness the famous Wealthy variety, which originated near Minneapolis. At the recent meeting of the Wisconsin State Horticultural Society, leading horticulturists expressed the belief that a plum equal in size and quality to Japanese and European varieties could be produced by hybridization with our native plums. The well-known hybrid between the plum and cherry recently introduced as the Compass cherry proves that there is a great field for further improvement in that direction. All of the improved varieties of fruits have originated with individual growers and experimenters. Here is an opportunity for our horticultural friends to compete for a worthy and legitimate prize. Interested parties should write The Jewell Nursery Co., Lake City, Minnesota, for particulars. This nursery was established in 1868 by Dr. P. A. Jewell and has a reputation for reliability.

A Good Point in Paint-Making.

The influence of temperature on the consistency of paint is not always sufficiently appreciated either in the factory or the painter's shop, says an exchange. On the whole, the manufacturer is less liable to deviate from the standard of composition on account of differences in the consistency of his raw materials caused by variations in temperature than the painter is when the latter thins his paint himself, because the manufacturer works to a definite formula and uses the same relative proportions of the various ingredients winter and summer. The painter, on the other hand, mixes his paints by judgment only, his sole criterion being the ease with which the material can be spread with a brush, and this necessarily implies that the proportion of the various thinners varies according to the temperature and other local conditions. (Paint, Oil and Drug Review.)

This is only one of the reasons why ready-mixed paints can never be as satisfactory as pure white lead and linseed oil mixed at the time of application, and put on by a practical painter. Without the power of anticipating the temperature at the time of use and the condition of the surface to be painted, the manufacturer of mixed paints can never make his mixtures such that they will perform their duties of protection and decoration without some defect. In house paint, the old-fashioned kind is still the best and, because the best, the cheapest for you to use.

You Should Read It.

Our readers who are interested in breeding pure bred live stock and like to get hold of good reading matter should by all means take Blooded Stock, a monthly published at Oxford, Pa. It takes up some breed of live stock each month and handles the subject very thoroughly. The best writers in the country have been secured on these special articles for 1905.

We have just received a copy of the February number that is devoted to Guernsey cattle. Wm. H. Caldwell, secretary of the American Guernsey Cattle Club, and Chas. L. Hill, Rosendale, Wis., who won a large number of the prizes on Guernsey cattle at St. Louis, had charge of this special issue, and any one interested in this great breed of dairy cattle should not fail to see this number.

The March number of this paper is devoted to Berkshire swine, and articles prepared by Mr. A. J. Lovejoy, president of the American Berkshire Association, and a number of other well-known writers make this issue one of the best papers ever published on the Berkshire hog.

The special feature that appears in this number is their offer of eight cash prizes to boys under seventeen, who make the best report of feeding a pig for six months. The pigs are furnished to the boys free.

Look up the advertisement of Blooded Stock in this issue and write them at once.

A Dictionary on Nursery Stock.

A large number of well edited, well printed and beautifully covered catalogues come to the editor's desk. Among those particularly noticeable this season is one from the Jewell Nursery Company of Lake City, Minnesota.

This complete catalogue should by all means be in the hands of every farmer, every fruit-grower, every landscape gardener in the country. It is illustrated with well-engraved half-tones, is edited with great care, and is especially complete as regards explanations of varieties. One specially notable feature is that every article is full-priced.

In the introduction the Jewell Nursery Company offer to pay one dollar in cash to any person discovering a misstatement of facts regarding any variety mentioned in their catalogue.

Dr. Jewell, who is a veteran horticulturist, is at the head of this nursery, and established this successful business in 1868. It covers twelve hundred acres of land, and requires nearly two thousand loads of fertilizers every year to give strength and hardiness to the growing plants. The location is along the banks and bluffs of the northern Mississippi, a locality unsurpassed for the production of hardy nursery stock.

Taking these points into consideration, we find them reflected in this complete and very satisfactory catalogue. We suggest to each one of our readers that they write to the Jewell Nursery Company, Lake City, Minnesota, and have the book close at hand for ready reference. It will certainly be a money-maker for them.

Millions of Peaches.

The words of our title is the enthusiastic expression used by a visitor in describing the orchards of Mr. J. H. Hale of South Glastonbury, Conn. From the more than two thousand acres of his great peach orchards, which are loacted at Fort Valley, Georgia, are gathered some of the finest peaches imaginable. The problem of successfully picking, packing and shipping the immense crop requires the skill of excelleut generalship during the six weeks of activity when the fruit is being forwarded to market. Mr. Hale has instituted such a perfectly organized system of operations that the giant task is accomplished with the least possible hindrance, and the result is that the famous Hale peaches arrive at their destinations in all their tempting lusciousness. No inferior grade stock is allowed to be placed on the market, and to this policy is largely due the reputation which the fruits from Mr. Hale's orchards have earned.

Although known as the "Peach King," Mr. Hale does not confine his attention entirely to peach culture. All kinds of berries, apples, plums, chestnuts, asparagus, rhubarb, etc., for home and market are included, also plants. His free catalogue gives complete information to those interested, and may be obtained by addressing J. H. Hale, South Glastonbury, Connecticut.

Now Is the Time to Buy a Washing Machine.

As the hot weather approaches, the family washing not only increases in volume, but the work of laundering it becomes more of a burden. For this reason, every family should have a good washing machine. One of the machines which has been advertised in The Fruit-Grower for some time is the Busy Bee washer, manufactured by the Busy Bee Washer Co., Box S, Erie, Pa. This is not a high-priced machine, but is well recommended by those who have used it. The manufacturers will send illustrated circulars, describing the machine, quoting price, etc., to all who address them as above. Attend to this matter before hot weather comes on, for there will be need of a good washing machine then.

NEW FIT CURE

At Last a Cure is Found for This Terrible Malady. YOU MAY TEST IT FREE.

Do you suffer from Epilepsy, Fits, or Fainting Spells? If so, I can cure you. I am curing hundreds where every other known remedy had failed, and I can cure you. Let me send you a full $2.50 treatment FREE as a test. This test treatment alone has cured many. Wm. C. Clark of Ithaca, Mich., writes: "It is with pleasure that I write and thank you for the great miracle you performed on my wife last spring. Your free trial treatment entirely cured her of Epilepsy of eleven years' standing. We cannot say too much for your wonderful treatment." Why not try it yourself? It may do for you what it did for this lady. Address Dr. Chas. W. Green, Monroe St., No, 155 Battle Creek, Mich.

To those expecting to attend meeting of
American Association of Nurserymen
at West Baden Springs, Ind., in June
THE
B. & O. S-W.

wish to present the following daily train schedule:

Lv. St. Louis.	Arrive Springs.
8:54 am	5:55 pm.
2:05 am...(except Sunday)	8:47 am.
9:29 pm	6:35 am.

Sleeper open at 10:00 p. m. for those desiring to take 2:05 a. m. train.

West Baden Springs affords the visitor many attractions. The hotels are first-class, and we will be pleased to render the delegates and their friends every attention.

For particulars, rates, etc., address

A. C. Goodrich, Trav. Pass. Agt., Kansas City, Mo., or

F. D. Gildersleeve, Asst. Gen'l Pass. Agt., St. Louis, Mo.

HOMESEEKERS' EXCURSIONS

If you want to visit Oklahoma, New Mexico, Arizona, Texas or any of the other sections of the Southwest in which fruit-growing is becoming such an important industry, investigate the low rate made by the

Santa Fe Route

ON FIRST AND THIRD TUESDAYS OF EACH MONTH.

The Santa Fe reaches every part of the Southwest, and with its frequent and well equipped trains and splendid roadbed, is best prepared to serve the public. For circulars or any desired information, address

W. J. BLACK, G. P. A., Topeka, Kan.
L. O. STILES, C. P. & T. A.,
St. Joseph, Mo.

HAVE YOU RENEWED?
The "Five for $1.00" Offer
AND THE
"Three Years for $1" Rate
WILL BE
Withdrawn May 1, 1905

Until that date we will accept renewals and the names of four NEW subscribers one year for ONE DOLLAR.

FRUIT-GROWER COMPANY
ST. JOSEPH, MO.

Very Interesting to a Horse Owner.

Kirksville, Mo., aJn. 29, 1904.

The Lawrence-Williams Co., Cleveland, O.:

I have cured lots of cases of fistula and spavin bone, hog, blood, with GOMBAULT'S CAUSTIC BALSAM. On hog and blood spavin removed all the bunch; but on bone killed it, cured the lameness and removed a larger part of the bunch. Can remove all if taken in time, also splints, curbs, thoroughpins, in fact all enlargements, and have met with the very best results. S. J. MILLER.

I cannot see how any farmer in Pennsylvania can do without The Fruit-Grower, for every farmer grows more or less fruit.—Wm. H. Grim, Hamburg, Pa.

Old Men Middle-Aged Men Young Men

Are You Weak, Worn Out, Discouraged and Unstrung?

If so, my Newly Discovered Philippine Remedy Will Quickly Restore You to Vigor and Strength. It is a Positive Cure for Weaknesses and Diseases Peculiar to Men.

TRY IT AT MY EXPENSE

There is a cure for every weak or worn-out man who will write to me for my new and Free combination treatment. I firmly guarantee to quickly and permanently bring you back the joy and comfort of manly strength. I care not who has failed to cure you, or what first caused the weakness; whether sickness, injury, excesses or

misuse. With this wonderful new remedy I rescue men from almost hopeless stages and restore them to vigor, potency and power so quickly and perfectly that the weakness never again returns. To prove that this is all true I will send to every suffering man who reads these lines a free treatment, sealed, with full directions how to use it. It costs you nothing to get this. It is free, absolutely free. I shall not ask or take pay for it, now or ever. Do not hesitate. All letters are strictly private. A cure is positively guaranteed if the disease is not advanced to the incurable stage of insanity, epilepsy, or consumption. If you need the remedy and want to be cured, write me today, and I will send the free treatment at once.

Dr. FREDERICK MAIN

Lock Box 644 JACKSON, MICH.

Cure Our Readers of Kidney Trouble, Bladder Trouble, Rheumatism.

68-Page Book and Free Treatment Free to All.

You, as well as any other reader of our paper who suffers from any uric acid disease of the kidneys, bladder or rheumatism and earnestly desires to be cured, can secure a free treatment of the well-known discovery by Dr. Edwin Turnock that seems to have such a wonderfully quick effect in curing these diseases.

Of course, if Dr. Turnock knew of your affliction and if he knew where you lived, he would send you this free treatment, but not knowing it we publish the facts so that sufferers can write the doctor for it and he will then send it promptly free of charge. Not only will he give you the free treatment, but he will also give full advice on how to cure yourself at home.

To show what really wonderful things are being done by this treatment the case of soldier H. C. Hamilton is told. He is 83 years old, a veteran of the Civil War, living at the Soldiers Home, Togus, Me. The trial alone, at 83, banished all his pain and kidney and bladder disease from which he had suffered since the war. G. G. Rector, of Marshall, N. C., was all crippled from rheumatism and a test of the treatment not only cured his rheumatism but made him stronger by thirty pounds. Mrs. Albert Stegemann of Whitney, Ont., Canada, had not known a healthy day in years until she took this discovery and was permanently cured in two weeks. The same can be said of Mrs. Henry Bloom, of Gateshurg, Pa., and Mrs. Cynthia I. Osborn, of Sweetwater, Mo., who was cured at 73. Mr. Henry Matsinger, 1624 N. Sydenham Street, Philadelphia, though a lifelong sufferer, needed only the trial to cure him of urinary troubles. The cures of Mrs. W. J. Kelly of Loda, Ill., Mr. William Hollister, of Halsey Valley, N. Y., and numerous others less afflicted are too well known to need be told again.

When you write for this free treatment remember it will be sent you without cost, as well as a 68-page book, telling all about your ailments. All you will have to do is to address plainly the Turnock Medical Co., 2681 Bush Temple Chicago, Ill. You will be under no obligations in any way, as they send the booklet and treatment absolutely free of charge to all our readers who ask for it. They make no charge—send no bills and ask no questions.

Fruit Growers send 10 cents and 5 names of fruit growers for 6 months trial subscription to THE PEACH GROWER, Savannah, Ga. It is a practical paper for growers of all kinds of fruit, of peculiar interest to peach growers. Published in the greatest peach state in the world, it publishes much matter of interest to peach growers everywhere.

Address The Peach Grower, Savannah, Ga.

YOUR NAME

on 100 cards 35c, prepaid. Send 2c stamp for samples. Westminster Ptg. Co., 4154-A Westminster Pl., St. Louis, Mo.

Central Nurseries, Waukee, Iowa.

This old-established firm has been doing business with Fruit-Grower readers for many years, and the many old customers of the firm, as well as new ones, will be glad to know that the firm is well prepared to serve its patrons this season. Mr. Spencer of the Iowa State Register recently visited the nursery, and after inspecting the stock for spring delivery, states that he never saw better nursery stock anywhere. This nursery was established in 1878, the founder being the elder John Wragg, who was so prominently identified with Iowa horticulture. In connection with the nursery at Waukee are the experimental plantings of the elder Wragg, so that at this time the J. Wragg & Sons Co. have the benefit of the work done by this pioneer in Iowa horticulture. This means much to persons who wish to buy nursery stock, for the firm is in position to give advice from practical experience as to the varieties which are best suited to given localities.

This firm has been doing business at Waukee for more than a quarter of a century, and will be pleased to quote prices on all kinds of nursery stock. The firm introduced the Wragg cherry, Stoddard plum, Iowa raspberry, Hartford pear, etc., and has a full line of varieties for spring delivery. Send list of your wants at once, and get quotations by return mail. Catalogue free to those who write, mentioning The Fruit-Grower. Send today, for it is a good catalogue.

Handy Wagons and Good Roads.

The good road question is on again in earnest. The state of Iowa has gone at it in an official way. They have established a good roads school at Ames, the seat of the State Agricultural College, and the state highway commission has engaged Mr. D. Ward King of Missouri as expert instructor in earth road maintenance. It is conceded that Iowa highways, and those of many other states as well, must be practically all earthen roads for a long time to come. Rutting in springtime is the great evil.

During a great part of the time in the spring months the roads are so heavy that it is next to impossible to haul a loaded farm wagon any distance without using up the team.

There is one way to largely overcome this difficulty, and that is to use a wagon with broad-tired wheels, such as the Low Down Handy Wagon, manufactured by the Electric Wheel Co. of Quincy, Ill. The amount of labor and wear on a team that is saved by the use of this wagon is enormous. As its name implies, it is a low wagon, and thus is very easy to load, more than half the lift being done away with.

It has broad-tired steel wheels, which do not cut up the roads and fields. These wheels are built of the strongest materials, and will stand any strain that can be put on them. They will last twice as long as the ordinary wheels.

Besides making the Low Down Wagon complete the Electric Wheel Co. can supply wheels to fit any axle skein, and it is a matter of just a few minutes to put them on any wagon.

The whole story of Electric wheels and details of construction will be found in the large illustrated catalogue, sent free to all our readers. Write for it.

Paying Strawberry Plants.

In the planting of a strawberry bed the question of quality is of very great importance. It is essential that new plants be strong and well rooted, and varieties must be chosen which are best suited to the particular climate and soil in which they are to be planted.

There is running in this paper an advertisement of a firm which makes a specialty of strawberry plants, the J. G. Harrison and Sons of Berlin, Maryland. They have made a careful study of strawberries for years, and they have acquired a reputation for the quality of their goods, until now the name, Harrison's Nurseries, is a guarantee of the very highest quality. They are especially careful in the packing of their trees and plants, and guarantee arrival in perfect condition.

We are informed by Messrs. Harrison that they have an especially fine stock of young, strong strawberry plants this spring, in upwards of 60 varieties, among them the popular Excelsior, Eleanor, Haverland, Michel's Early, Tennessee and Warfield.

Aside from their strawberries, Harrison's Nurseries are noted for their peach trees. The nurseries are situated in a climate which is especially adapted to the growing of peaches, and the Harrison peach trees are known for their hardiness and the flavor of the fruit. Messrs. Harrison also grow every kind of nursery stock. Send for free catalogue to Harrison's Nurseries, Berlin, Maryland.

A Good Spray Pump Catalogue.

The Fruit-Grower has received a copy of the catalogue of Barnes Mfg. Co., Mansfield, Ohio, which describes the full line of spray pumps and appliances manufactured by that firm. All kinds of pumps are manufactured, and all are described in the catalogue. A feature of this catalogue which will interest all fruit-growers is a list of the principal insect and fungous enemies which they will be called upon to fight, with brief description of them. The different formulae for making spray mixtures are also published, together with a good spraying calendar. The catalogue is small enough to be carried in the pocket, and should be in demand by all our readers. It is free to those who address Barnes Mfg. Co., Mansfield, Ohio, mentioning The Fruit Grower when they write.

Nims Bros., of Emerson, Iowa, have four Gold medals to their credit from exhibits of corn at the recent St. Louis Exposition. Every ear of corn entered was of their own raising and of the very identical kinds which they are supplying to their seed corn customers this year. Nims Bros. have years of experience in breeding and raising seed corn. Their customers get seed corn from first hands and corn of the highest germinating power. We call the attention of our readers to their advertisement in this paper. The known reliability of this firm leads us to believe that seed corn bought from Nims Bros., Emerson, Ia., will be just as represented.

The Lightning Sprayer.

D. B. Smith & Co., Utica, N. Y., who have advertised in The Fruit-Grower for a number of years, call the attention of our readers at this time to their Lightning Sprayer, which is equipped with brass automatic fancet and nozzle, works by compressed air pressure, and has safety valve attachments. It is claimed this sprayer will not clog, and the manufacturers would like to tell our readers more about it. Write for catalogue and full information, mentioning The Fruit-Grower when you do so. Attend to this at once, for the sprayer will soon be needed.

Archias Seed Store, Sedalia, Mo.

This firm has an advertisement in this issue, calling attention to the splendid line of seeds carried by this firm, also to its bee supplies, poultry supplies, etc. This is an old firm, and has an excellent reputation among those who have patronized it for years. A catalogue will be sent free to those who ask for same, mentioning The Fruit-Grower.

TRUCK AND FRUIT LANDS

ALONG THE

IRON MOUNTAIN ROUTE

IN ARKANSAS AND LOUISIANA HAVE PASSED THE EXPERIMENTAL STAGE, AND IT IS POSSIBLE FOR ONE TO PAY FOR HIS FARM IN ONE YEAR'S CROP AND STILL HAVE A RESERVE FUND TO CARRY HIM TO THE SUCCEEDING YEAR. $5 TO $10 PER ACRE IS THE PURCHASE PRICE. THE MAN OF SMALL MEANS SHOULD BUY NOW AND SECURE THE BENEFIT OF AN EXCELLENT INVESTMENT.

THIS IS THE RAILROAD WHICH CARRIES YOU TO INEXPENSIVE AND COMFORTABLE HOMES—

CLIMATE IDEAL.

FARMING AND STOCK RAISING THE YEAR AROUND.

4—TRAINS DAILY FROM ST. LOUIS—4

QUICK TIME, BEST SERVICE, SPECIAL HOMESEEKERS' RATES, AND FREE RECLINING CHAIR CARS.

THINK THE MATTER OVER, AND WRITE US FOR LITERATURE AND DETAILED INFORMATION.

H. C. TOWNSEND,
GENERAL PASSENGER AND TICKET AGENT.
ST. LOUIS MISSOURI.

$25 California

One-way tickets on sale daily until May 15. Los Angeles, San Francisco, Portland, Seattle—choice of routes.

You can go through New Mexico, or through Colorado. The Rock Island runs Improved Tourist Sleepers via both routes.

The trip may be made in perfect comfort at such a slight expense that you cannot afford to miss it.

Write today and we will send you our illustrated Tourist folder, giving details of Rock Island through service, with map and full information.

Rock Island System

JOHN J. GOODRICH,
City Passenger Agent, 6th & Edmond Sts.,
ST. JOSEPH, MO.

You Will Never Regret It When You Buy a Missouri Farm.

But where you have the advantages that you cannot find elsewhere. Soil that will produce the best of all kinds of crops and the center of the fruit country of the United States. The soil being all right and at the very door of the best market in the world. The Bruce Bargain Co., of Pleasant Hill, Mo., announces in our real estate department, the sale of several farms that will surely interest you as to location, price and improvements. Write to them today mentioning The Fruit-Grower.

HEAVES—Their Cause and Cure.

Heaves in horses are largely caused by the abnormal condition of the stomach due to over-feeding, followed by violent exercise on an overtaxed stomach. An animal with indigestion will show a certain amount of distress in breathing and cough more or less, and if allowed to run on will surely develop into a case of heaves.

Newton's Heave, Cough, Distemper and Indigestion Cure is the best remedy known to veterinary science, and is a guaranteed cure for the heaves in any stage whatever.

It does the work easily and thoroughly, leaving no ill effects of any kind. It reaches the seat of trouble by its action on digestion and its direct action upon the lungs and their nerve supply.

Horsemen all over the country are enthusiastic in its praise, and no one who values his animal can afford to be without it. Price $1.00 of dealers or by express paid on receipt of price.

Write the Newton Remedy Company, Toledo, Ohio, for their catalogue, containing valuable hints on the care of the horse, sent free to all who write for it.

Farm Canning Machines.

In this issue appears the advertisement of the Farm Canning Machine Co., Meridan, Miss. This company succeeds to the business of M. Foerg, whose advertisement has appeared in the columns of The Fruit-Grower every season for a number of years. These canning outfits are adapted to the use of those persons who want to can fruit and vegetables for home use, and also for those who wish to use their surplus fruits and vegetables in this manner and dispose of the canned goods later. The outfits have been used for many years by many Fruit-Grower readers, and have given satisfaction. Write to the advertisers for descriptive matter and prices of the outfits, which come in several sizes, with capacity ranging from 300 to 2,500 cans per day. Mention The Fruit-Grower when you write.

100 Ways FOR WOMEN TO EARN money; complete plan 10c. Mercantile Supply House, 1730 Jefferson St., Nashville, Tenn.

Grand Island Route

Short Line Between

St. Joseph and Kansas City

DOUBLE DAILY SERVICE, with new 80-foot Acetylene Gas Lighted Pullman chair cars (seats free) on night trains and Pullman high-back seat coaches on day trains, between Kansas City and St. Joseph, Mo.; Hiawatha, Seneca, Marysville, Kan.; Fairbury, Fairfield, Hastings and Grand Island, Neb.

Connections made at Kansas City for all points East, South and West

At Grand Island direct connections are made with Union Pacific fast trains for California and the Pacific Northwest.

S. M. ADSIT,
Gen'l Pass. Agent St. Joseph, Mo.

OKLAHOMA

Fruit Growers' Paradise

The Oklahoma Farm Journal tells about it twice a month. Most practical farm publication in Southwest. 50c. gets it one year. Send for sample copy.

Oklahoma Farm Journal
Oklahoma City, Okla.

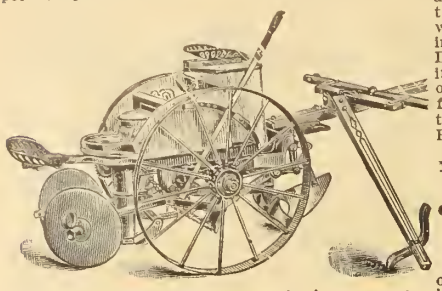
Make your own Fertilizer at small cost with
Wilson's Phosphate Mills
From 1 to 40 H. P. Send for catalogue.
WILSON BROS. Sole Mfrs., Easton, Pa.

MONEY IN POTATO CULTURE

When "Iron Age" Implements Are Used in Planting, Cultivating and Spraying.

Below we show a cut of the "Iron Age" (Improved-Rohhins) Potato Planter which machine is used and highly recommended hy the most critical and leading potato growers

The improvements recently added have made it still more valuable. It drops one hundred per cent of the seed correctly Makes no



doubles, no misses and will not hruise or puncture the seed

The "Iron Age" (Improved-Rohhins) Planter is adapted to all kinds of soil and may be used with or without the fertilizer distrihutor, as desired, making it a profitahle machine for every condition of soil in every part of the country.

With the "Iron Age" (Improved-Rohhins) Planter, "Iron Age" Riding Cultivator and the "Iron Age" Four Row Sprayer the potato crop as a money maker is assured, and can easily be made one of the most profitable of crops year after year. If you are interested in successful potato farming, write to the Bateman Manufacturing Company, Box 506, Greenloch, N. J., and secure Iron Age, their new hook for 1905, which explains in detail all of these improved machines, as also many others that save time, labor and money. Send a postal card today and look the matter up before spring planting time.

Of Interest to Stockmen.

The beautiful illustration given herewith is one which appears in an interesting folder just issued hy the O. K. Stock Food Co., Chicago. The suhject matter of this folder treats of the practical uses of stock food for conditioning stock anl keeping the animals healthy and productive. The topic is one which should interest all owners of stock whetrer they own many animals or few. Health is the ahsolute necessity to success

of stock whether they own many animals or insuring health is a most valuable article. More and more with the growth and development of agricultural interests advanced methods are being applied and the stock raiser can not afford to be behind the times.

The use of stock food, however, is not confined to the range and ranch. The farmer and dairymen are if anything, the greater heneficiaries hy its use, for it is especially calculated to keep the horses in condition for work and the cattle in the best condition for a large and rich yield of milk. The raiser of hogs is of all persons the last who can afford to disregard a study of this suhject. He knows only too well what the terms hog cholera and swine plague mean—to him it would meau total loss should these dreaded diseases gain headway among his herd and the use of a preventive such as O. K. Stock Food is a wise precaution which may save him hundreds of dollars. The sheep raiser is also interested and the needs of his flock, especially the young lambs, require the use of the most healthful food he can supply. This folder should be read hy everyone who is interested in stock of whatsoever kind and number. It will he mailed free to any address upon request. Application should be made to the O. K. Stock Food Co., Monon Building, Chicago. Their advertisement is on another page of this paper.

Prof. Holden Visits Henry Field's Seed House.

A pleasant incident in the coming of the corn train was the visit of Prof. Holden to Henry Field's seed house. He and two others of his party got up at 6 o'clock Wednesday morning and started afoot for Mr. Field's, hut as Henry had invited them, he met them before they got far on the way. They spent more than an hour looking through the establishment; as delighted children in a toy store. For Mr. Holden is a corn crauk of deepest dye, and his is that intelligent sort of enthusiasm that makes the world hetter. He went into the field and plucked a hundle of stalks for his car, aud took liberal samples of Henry's graded seed corn with him. Prof. Holden had known of this special machine which Mr. Field has for the grading of seed corn, and therefore was favorably impressed with the valuc of this graded corn to the farmer in getting an even dropping of seed in each hill from his planter. Mr Field may feel very higbly honored hy Prof. Holden's visit to his seed houses, as it was Pro. Holden's first visit to any seed house in Southwest Iowa. He could hardly tear himself away and Henry on his part was equally delighted with his visitors and their expressions of approval.—Shenandoah (Iowa) Sentinel.

Lighten Your Work.

Why so many farmers continue to use the work-making tools of their ancestors is easily explained. It is a habit. Farmers elect to improve their condition and lighten their labor as well as city folks. Habits are strong, hnt the common sense fellow anywhere must be willing to listen to solid argument and make a change. One of these habits is the use of the narrow-tired, high-axle wagon. Although useful on hard roads, macadamized or asphalt pavements, it is not truly fitted for farm work. It cuts deep into the sod or plowed ground; the height of the wagon hox on the axle makes the lift too high.

On account of its height from the ground and the large diameter of the wheels, the draught on the horses is heavy; the wagon weaves, twists, soon loses its original rigidity and compactness.

Ou the other hand, the low-down Farmers' Handy Wagon is just the contrivance fitted for economical service on dirt. Its wide tires roll down and flatten instead of making starting places for gullies; they improve the public highways, the lane roads, the way through the fields; they cut the strain on the horses in two. The height of bolsters run from 22 to 37 inches from the ground. Consequently the lift is very slight. These "Made in Saginaw" wagons are time economizers. Tbey take less time to load and unload; horses can haul a higger load in two-thirds the time required hy a narrow tired wagon. Then there are no hackaches, no wrenching, muscular strain, nor excess exertion to fear. Disastrous results in rupture or other internal injuries often fall to the lot of farmers because of high lifts ahove the waist line. A beautifully illustrated catalogue is ready for mailing to any farmer who will address the "Saginaw Handy Wagon," Saginaw, Michigan.

MODEL BUGGIES SOLD "ON TRIAL."

Only One Quality Buggy Factory In the World, Has Most Liberal Selling Plan.

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Its experience proves that hy means of the hig free Model Catalogue of Vehicles and Harness anyone can select just exactly what is desired without having to hunt up a huggy dealer or a harness shop. Just a little common sense and care in filling out the very complete order sheets which are furnished, is all that is necessary.

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A company that makes such a liberal proposition is going to he exceedingly carefnl to send the very best goods, and to see that everything is just as ordered. If anything goes wrong, the Model Carriage & Harness Co. mnst stand the loss of freight and other expenses, and lose a sale as well.

This Company rnns the only One Quality Buggy Factory in the world. It huilds high grade vehicles exclusively. Other factories build various grades of vehicles and thus cheap material is frequently used in high priced johs, and workmen who build both cheap and good huggies grow careless and often slight the work on a high priced vehicle.

The Model Carriage and Harness Company buys only first class material and employs only expert carriage huilders. As a result, Model Vehicles are all of uniform high quality.

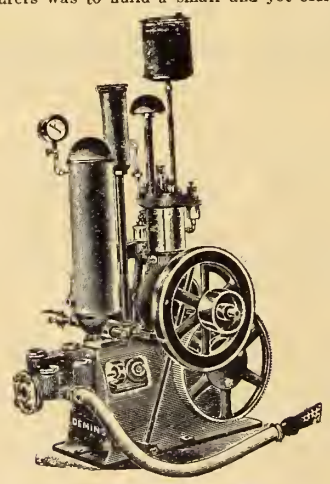
It will pay anyone who is thinking of buying a huggy or a set of harness to get the hig Model Catalogue, which is sent free on request.

The address of the Model Carriage & Harness Company is 115 Sixth St., Cincinnati, Ohio.

The Deming Power Sprayer.

Those of our readers who use or are intending to purchase power sprayers will be interested in the Gasoline Engine Spraying Macbine manufactured hy the Deming Company, Salem, Obio. The Deming Company are old and well known manufacturers of all kinds of spraying devices. The power sprayer here reproduced is one of their latest inventions. It meets admirahly the requirements of those who must employ a power of some kind to spray their large trees and in their large field and orchard operations.

The difficulty heretofore encountered hy manufacturers was to huild a small and yet efficient



gasoline engine which could be sold at a price orchardists could afford to pay. The Deming Company claims to have solved this problem.

The engine is light, simple and self contained. The cylinder is water cooled; the water tank being in hase of outfit. The water circulation is ideal. It has a strong electric spark igniter and improved dry hatteries. The pump is of a style already proven one of the most effective in the Deming line. The whole outfit can be conveniently mounted on a wagon bed or tank wagon. Any style or size of supply tank can he used. Any one interested in power sprayers will do well to send to the Deming Company for their catalog and full particulars about this machine.

Good Line of Spray Pumps.

Readers of The Fruit-Grower are familiar with the advertisements of the Field Force Pump Co., Elmira, N. Y., for these advertisements have heen appearing in our columns for years. Not all of them, bowever, have seen the 1905 catalogue of this firm, but certainly everyone who is interested in the subject of spraying should have it. The 1905 catalogue of this firm is perhaps the best that has heen sent out hy it. The entire line of pumps made hy the company is described and illustrated. The barrel pump is called the Empire King, and it is one of the hest-known harrel pnmps on the market. The parts which are exposed to the chemicals are made of hrass, with hrass valves, without any leather or rubber. This pump, too, has one of the best agitators which has ever been used on any spray pump. Two paddles revolve half way around with every stroke of the pump, so that the spray mixture is kept thoroughly agitated as long as the pump is being used. Another good feature of this pump is a hrush which keeps the suction strainer clean, so that the nozzles will not become clogged.

Another popular pump described in the catalogue is the Orchard Monarch, a power sprayer mounted on a wagon. This sprayer receives its power through a crank shaft and sprocket attached to the rear axle. An air chamber stores the power generated in driving from one tree to another, and a pressure guage registers the exact pressure. A hand pump is also supplied, so that in an emergency hand power can reinforce the power received from the axle. Except in rare cases, however, the power generated in driving from tree to tree is snfficient to spray even large trees. This is a most popular pump for large orchards.

Other pumps are knapsack pumps, single harrel pumps mounted on carts, tanks for spraying strawberries, potatoes, etc., this line being all pumps of high power. Pnmps for all other purposes are manufactured and are described in the catalogue.

The catalogue contains a spray calendar, directions for making sprayer mixtures, etc., and altogether the hook shoull he in the hands of everyone who is interested in spraying fruit trees or plants. It will he sent free to all who apply for same, and in writing the manufacturers, Field Force Pump Co., Elmira, N. Y., please say that you saw the advertisement in The Fruit-Grower.

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Is the electric-lighted train between Kansas City and Chicago that took first place in its first year, and holds it. Its route is via the short line of the

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Leaves Kansas City, Union Station, 5:55 p. m., and Grand Avenue Station 6:07 p. m. Arrives Union Passenger Station, Chicago, 8:55 a. m., the next day.
Carries compartment and standard sleeping cars, dining car, observation-library car, reclining chair car and coach. It is electric lighted, steam heated and perfectly ventilated throughout, and runs over a track protected by the absolute block signal system all the way.
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Southwestern Passenger Agent,
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Address .....

City ..... State .....

Time of Trip .....

Probable Destination .....

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On April 18th the Burlington Route will run an excursion to the Big Horn Basin, Eastern Colorado, Western Nebraska and the Black Hills on special round trip rates of $15.00 from Kansas City, St. Louis, St. Joseph, Omaha, and $20.00 from Chicago. Corresponding rates from other points.

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R. H. CROZIER,
Div. Pass. Agt., Burlington Route
ST. JOSEPH, MO.

About the South

A pamphlet issued by the Illinois Central R. R. giving detailed information on the following subjects: "Fruit Growing in the South," "Southern Farm Lands," "Truck Farming," "Dairying," "Stock Raising," "Grasses and Forage Plants," "Soils of Kentucky, Tennessee and Mississippi," "Market Facilities," "Southern Immigration," and "Letters from Northern Farmers."

Write today for copy which will be mailed you free of charge.

W. H. BRILL,
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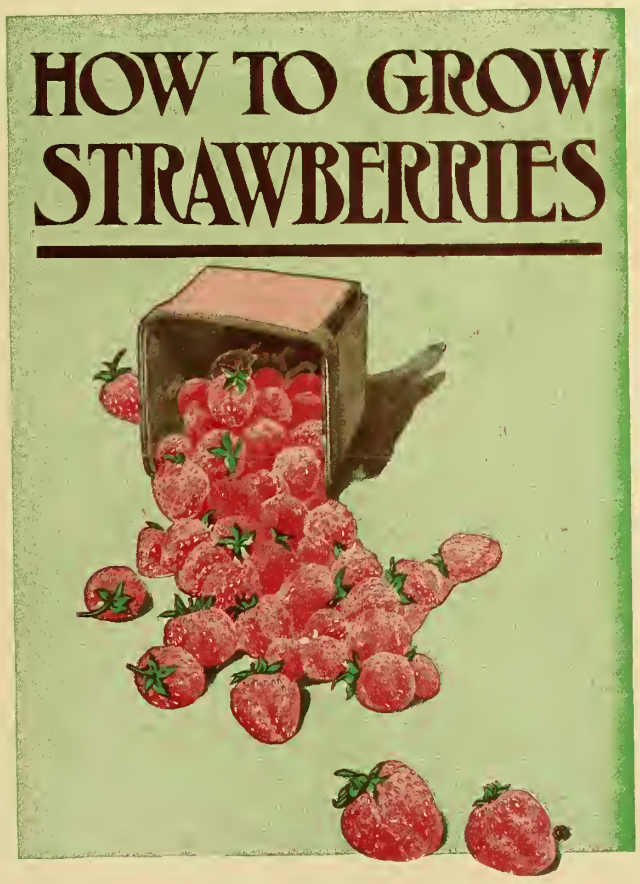
The five booklets of the "Bro. Jonathan Series" described below are now ready for mailing and will be sent postpaid on receipt of price, 25c each, or the set of five for one dollar. Every reader of The Fruit-Grower should have the entire set at hand for reference.

This is a series of booklets on different phases of fruit culture, which are intended to help those engaged in the pursuit of horticulture. They are not technical, in any sense, but while written in a popular style, are intended to be so practical that any one can understand them.

We are so confident that these books will be appreciated by the members of "The Fruit-Grower Family" that we offer to send the set of five on approval to any paid-in-advance subscribers. If they are worth the money, send a dollar; if not return them. No less than five will be sent on these terms.

Fac Simile of Cover Page Showing Size of Booklet

"BROTHER JONATHAN SERIES"—No. 3.



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No. 1=Propagating Trees & Plants

BOOKLET NO. 1 describes fully the process of budding, grafting, layering, etc., and as the different processes are shown by illustrations, one can readily understand how this work is done after reading this booklet. It is by Prof. W. L. Howard of the University of Missouri, with photographs by E. H. Favor, of the same institution.

No. 2=A Treatise on Spraying

BOOKLET NO. 2 is by Prof. J. M. Stedman, entomologist of the Missouri Experiment Station. This booklet does not cover the whole field of insect life, by any means, but it does treat of some of the insects which are most destructive to fruit crops, and gives directions for their destruction. Many of the most destructive insects are shown in the illustrations, and the booklet will be very practical in its nature.

No. 3=How to Grow Strawberries

BOOKLET NO. 3 is by Dr. J. C. Whitten, professor of horticulture of the University of Missouri. It treats of growing strawberries as a commercial crop or for home use, with illustrations which help to make everything clear even to the novice.

No. 4=The Home Garden

BOOKLET NO. 4 is by Prof. Howard and Mr. Favor. It tells how to make hotbeds, cold frames, etc.; how to handle them to the best advantage, so that the greatest crops can be secured. The more common garden vegetables are discussed, together with some which are too often neglected. This booklet will be helpful to one who has even a small garden in the city, as well as to the farmer with a more pretentious garden spot.

No. 5=Packing & Marketing Fruits

BOOKLET NO. 5 is by Prof. F. A. Waugh, of the horticultural department of Massachusetts Agricultural College, author of the well-known book on "Fruit Harvesting, Storing, etc." This book tells about the correct time for picking different fruits, describes different packages used in which to market them, with recommendations of best styles for different purposes. This booklet, like all the others, is fully illustrated.

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Customers are guaranteed stock free from "Black-heart," frosted roots and all other forms of winter injury

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THE WESTERN FRUIT-GROWER

ST. JOSEPH, MISSOURI

AN ILLUSTRATED MONTHLY MAGAZINE FOR PROGRESSIVE AMERICAN FARMERS

SUBSCRIPTION FIFTY CENTS PER YEAR THREE YEARS FOR ONE DOLLAR

VOLUME SIXTEEN MAY, 1905 NUMBER FIVE

FRUIT PACKAGES

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Bushel Basket.

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We also make Climax baskets for peaches, grapes and melons; 4-basket and 6-basket crates, Leslie and Hallock Boxes and Crates, and other styles of fruit and vegetable packages.

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Order early to avoid rush and possible disappointments. Address

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Leaders in Printing, Paper Folding and Made-up Boxes.

Specimen plants characteristic of uninoculated and inoculated field of Alfalfa, on farm near Bynum, Harford County, Maryland. The uninoculated plants turning yellow, though sown on ground richer and better than the inoculated field. Gain from inoculation with Nitro-Culture nearly 500 per cent by weight.

Bacteria AND Fruit Trees

It has been demonstrated by experiment that if Clover, Alfalfa, Beans, Peas, or any other leguminous crop has been inoculated with **Nitro-Culture Bacteria** and planted under fruit trees, that the nitrogen (gathered from the air by the Bacteria) will finally be carried to the roots of the trees, providing them with an abundant supply of nitrogen (the most expensive of all fertilizers).

Nitro-Culture

Also keeps the soil in good condition and free from weeds. This means of increasing the growth and productiveness of young trees is highly recommended by the

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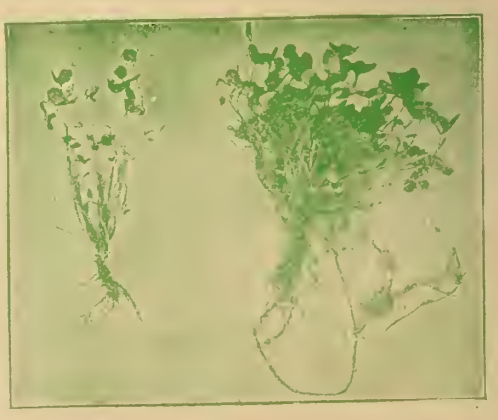
Save expensive nitrogenous fertilizers and write for free Booklet to



Inoculated clover on the right, uninoculatel on the left, grown in the same plot, from the same seed. (Taken from a Photograph.)

National Nitro-Culture Co.

West Chester, Pa.

The Western Fruit-Grower

An Illustrated Monthly Magazine For Progressive American Farmers.

Volume Sixteen. ST. JOSEPH, MISSOURI, MAY, 1905. Number Five.

Inoculation of Soils for Leguminous Crops

Recently there have appeared in the daily papers extravagant articles in regard to the discovery of Prof. Moore of the United States Department of Agriculture, this discovery being referred to by many of the papers as "a plan to sell fertilizers to farmers in small packages." These reports are all fictitious, for the most part, for Prof. Moore's discovery is not of this kind at all. It is really more important than that, however. The effects will be more far-reaching.

An issue of The Fruit-Grower devoted to the growing of leguminous crops would hardly be complete without an article on this work of Prof. Moore, for it directly concerns this class of crops. As is generally known, the legumes (or in general plants which bear their seed in a pod), have the power to gather free nitrogen from the air and fix it in the form of nodules on the roots of the plants. The formation of these nodules is due to the presence of certain bacteria which work upon the roots; without the presence of bacteria the plants may make a fair growth of plant, but the soil will not be enriched, as no nodules will form. In most cases, however, without the presence of the bacteria, the plants will not make a good growth. This fact explains why so many persons have failed in growing alfalfa; the bacteria were not present in their soils. The same is true of failures in growing cow peas, velvet beans, etc. This fact has been appreciated for some time, and it has been found necessary to "inoculate" the soils before a satisfactory growth of this class of plants could be secured. Many tons of earth have been sent from the alfalfa fields of Colorado to spread upon fields in other states where it was desired to grow alfalfa. Infection of soy beans grown in the United States was first secured only after soil was imported from Japan.

In using soil from one field to inoculate the soil of another, it has been found that frequently weed seeds and plant diseases are spread, and there are many other objections to the practice. The expense of transferring a lot of soil, for instance, is very great. Accordingly, Prof. Moore tried to find some plan whereby the bacteria could be established in a given soil, without the transfer of soil. He first prepared a liquid culture of the bacteria, taken from nodules of plants. Absorbent cotton is then saturated in this liquid culture of the nodule-forming organism. In this way millions of the bacteria are held within the cotton, and after this is carefully dried out they remain dormant, in much the same way as seeds, waiting for the proper conditions to revive them.

The "dry culture" thus produced needs only to be immersed in water to start the organisms into growth. To hasten the growth, however, it seemed best to furnish with the cotton culture two packages which contain elements which, when added to the water, furnish food on which the bacteria thrive and increase, so that within two days the clear water into which the cotton and the bacteria-food were placed has turned to a milky liquid, ready to treat seed or soil for planting. The process of preparing these cultures has been patented by the Department of Agriculture, to secure to the public the right to use same without any interference. The preparation of the dry cultures can only be undertaken by chemists with access to a laboratory, and therefore the ordinary person will be compelled to purchase them. Notwithstanding the government holds the patent to the process, no restriction is placed upon the manufacture of efficient and properly prepared cultures by any firm or individual. The government, however, will reserve the right to call attention to any firm which is not reliable in its work along this line.

So much for the work of Prof. Moore in devising a way to inoculate soils and seeds without the transfer of soil from an infected field to one free from the bacteria.

How the Bacteria Are Introduced Into a Field.

The problem of inoculating a given field is a simple one. When the cultures are sent out, there are three packages, one containing the absorbent cotton with the bacteria dried upon it, and two containing salts which are needed by the bacteria to reach their best development. Into a gallon of clean water, preferably rain water, in a clean bucket or tub, one package of the salts is emptied, and the water is stirred until dissolved. The package of absorbent cotton is then opened and dropped into the solution. The vessel is then covered with a paper to protect from dust and is set in a warm place for twenty-four hours; the water should not rise above blood heat. At the end of twenty-four hours the contents of the other package are emptied into the liquid, and in twenty-four hours more the solution will have a cloudy appearance, and is ready for use.

The seed to be planted is moistened with this solution, taking care that all seeds are touched by the same; then they are spread out in a shady place until thoroughly dried, after which they are planted the same as untreated seed. After having dried, however, the seeds can be kept for several weeks before planting, if desired.

The liquid can also be used to inoculate soil in the following manner: Take enough dry earth so that the solution will merely moisten it. Mix thoroughly, so that all the particles of soil are moistened. Thoroughly mix this earth with four or five times as much, say half a wagonload. Spread this inoculated soil thinly and evenly over the prepared ground exactly as if spreading fertilizer. The inoculated soil should be harrowed in at once.

Still another way to secure inoculation is to use the culture liquid to water plants already growing. One man reported to the Department of Agriculture that he watered his garden peas with the liquid culture, raking fine dry soil over the moistened soil. The effect was very noticeable, both in growth of vine and yield of peas.

What Plants Are Benefited.

In Bulletin No. 214 of the United States Department of Agriculture reports are received from persons who used the cultures on the following crops, with success: Alfalfa, red clover, garden peas, common beans, cow peas, soy beans, hairy vetch, crimson clover, Canada field pea, velvet bean, alsike, sweet peas and Berseem. Perhaps no other crop gave such uniformly good results as did alfalfa. Thousands of failures have been made in trying to grow this crop in various parts of the country, and the introduction of this system of inoculation has enabled many persons to succeed in sections where failure has been the rule before.

In this connection it should be stated that different cultures are made for each kind of plants. While it has been found that there is only one species of the organism, there is a physiological variation on different plants, and quicker and surer results are obtained by preparing separately cultures for each species of legume. In using these, therefore, it will be necessary for the farmer to state the plant he wishes to grow, so that he can receive the proper inoculation.

Inoculation Compared With Use of Fertilizers.

At the beginning of this article reference was made to the reports that this method of inoculation was characterized by some of the daily papers as "fertilizing the soil." But, as explained, of course it is not this, in the strictest sense. However, it has been found by actual experiments that the use of inoculated seed will secure in many cases even greater crops than where fertilizers are used and the seed are not inoculated. In the bulletin referred to the following reports are made:

One grower made a test with fertilized and unfertilized strips of field peas. "Inoculated seed did as much without fertilizers of any kind as seed not inoculated but supplied fertilizer (phosphate) at the rate of 800 pounds and a ton of barnyard manure per acre."

Another grower reported that his inoculated garden peas yielded one and a half as much as was produced on soil not inoculated, but which had been manured.

In the experience of growers it has always been noticed that the nitrogen-nodules are not formed on the roots of the legumes which are grown in soil already rich in nitrogen in nearly so great quantity as they are formed on soils deficient in nitrogen. This is due to the fact that where the plants can get the nitrogen from the soil they will not form the nodules on the roots as they would if the soil were poorer. To secure best results, however, the supply of potash and phosphoric acid in the soil should be normal. But if commercial fertilizers are to be used in connection with the cultures, care must be taken that the fertilizers do not come in contact with the inoculated seed. The fertilizer should be spread and mixed with the soil previous to sowing inoculated seed.

When Should the Farmer Resort to Artificial Inoculation?

On this subject the bulletin referred to has the following to say:

"The question naturally occurs to the farmer who reads of the wonderful work done by bacterial culture, 'How can I benefit by this discovery?' To begin with, it should be clearly understood that the nodule bacteria are only useful with the plants which nature has adapted to produce root nodules when these bacteria are present. These plants are practically all included in the leguminous or 'pulse' family, and the common forms sown are the clovers, peas, beans and vetches. Some experiments have been made by workers in this country to infect the roots of corn, wheat, etc., with nitrogen-fixing bacteria, but the results were negative in every case. Assuming that the farmer has decided to sow some legume—alfalfa, for instance—the first question is, 'does my land need this treatment?' The answer depends on several conditions.

When Inoculation is Necessary.

"Inoculation is absolutely necessary when—

"1. The land is at all poor or thin and has borne no legumes previously.

"2. The land has borne legumes whose roots were devoid of nodules. Even in soils rated as 'standard,' and capable of producing excellent crops of grain, etc., legumes lacking nodules frequently make a very poor showing.

When Inoculation Is Desirable.

"Inoculation is highly desirable when—

"1. The legumes previously grown on the land belong to another group of these plants. For instance, Bokhara or sweet clover (Melilotus) and bur clover are the only common legumes which give evidence of having nodule bacteria capable of infecting alfalfa.

"2. The soil produces a sickly growth of legumes, even though their roots bear nodules. This applies whether the leguminous crop is to be sown is the same as the preceding one or not. The introduction of the active organisms furnished by pure cultures may solve the difficulty.

When Inoculation Is Worthy of Trial.

"Inoculation is worthy a trial when—

"1. The crop, already sown, has made a stand, but gives evidence of failing from lack of the nodule-forming bacteria.

"2. A field, which has previously grown a good leguminous crop, begins to give even a slight indication that, all other conditions being the same, it is not producing the highest yield. This situation is the hardest to detect, because it depends upon a gradual loss of virulence of the bacteria already in the soil, and the only way of being certain of this condition is to try inoculation and note results.

When Inoculation Is Unnecessary.

"Inoculation is unnecessary when—

"1. In soils where the leguminous crops usually are producing up to the average and the roots show nodules in normal numbers. In such cases inoculation will give no material increase in yield nor will the soil receive additional enrichment thereby. This may be accepted as a general rule, although cases have been reported beyond what could be reasonably expected, due, in all probability, to

If Your Date Tag Reads "June '05" or any Date Previous to that Month You Should Send Renewal at Once

The month of April was another record breaker in our subscription department. More renewals were sent in than were received in any previous month.

A great many names are on our list, however, whose subscriptions expire with May or an earlier issue. If you remittance for renewal was not received in our subscription department by May 1st, the wrapper in which this paper is mailed will contain a **BLUE PENCIL MARK**, which is a reminder that you should write us at once and send remittance or arrange to have your time advanced and your name taken from our delinquent list.

If you are not prepared to send the money now, **write us**, and we will gladly advance you for **two years** and charge your account with **$1.00**, which you may pay any time during the year.

Your Credit is Good with us, but we prefer to carry the account on our books and let your **date tag** show that you are **paid up**. This makes things more convenient for our office force.

The subscription rate of The Fruit-Grower will soon be advanced to **a Dollar a Year**, but in the meantime any of our readers, if they choose, may pay in advance at the 50c rate, from one to four years, **but no more.** This will enable all readers to place themselves in position where the raise in price will not affect them for four years to come.

Read the ad about our "Brother Jonathan" Books. If you are paid in advance, we will send the five books post paid for inspection. If you like them send a dollar. If you do not like them, return to us. You take no chances. All who have inspected these books say they are the best of the kind ever printed. Shall we send you the series of five on approval? **THE FRUIT-GROWER CO., ST. JOSEPH, MO.**

the greater activity of the bacteria grown in pure cultures. Whether the increase under such circumstances would be sufficient to make inoculation worth while would depend upon the degree of deterioration which the organisms already in the soil had reached.

"2. In soils rich in nitrogen. Where plants can secure combined nitrogen in the soil they will draw from this direct source, even though they are provided with root nodules. Mention has already been made of the effect of rich soil upon the ability of the bacteria to form nodules. Growing legumes upon such soils where nodules are not readily formed is not advisable, as it is manifestly poor economy. With the aid of the nodule bacteria, legumes can be made to produce quite as well upon much poorer soils. Ground containing a high percentage of available nitrogen would thus be released for the growing of grass, grain or truck crops which do not possess facilities for utilizing atmospheric nitrogen. Of course, the use of rich soil would be justified if the legume crop should happen to be the most profitable in the region, or if the land should be of uniform fertility.

When to Expect Failure With Inoculation.

"Failure with inoculation may be expected—

"1. When the directions for preparing the liquid are not carefully followed. Reference has already been made to the necessity for strict adherence to a few simple but necessary instructions. In one instance, two dry cultures derived from the same 'stock culture' and used by the same experimenter gave widely different results in adjoining fields. The first, prepared without proper reference to temperature and manner of application, resulted in the loss of the seed (alfalfa) sown, no nodules being formed. In the second experiment, with more care taken, nodules were produced in abundance and the stand was a perfect success. The culture does not itself contain the nitrogen, but simply the organisms which potentially have the power of fixing nitrogen, and which, if properly handled, will increase in such numbers as to be of material benefit to the plants with which they become associated.

"2. When the ground is already thoroughly inoculated.

"3. When the soil is so rich in nitrogen as to prevent the growth of nodule-forming bacteria.

"4. When the soil is too acid or too alkaline to permit the development of either plants or bacteria.

"5. When the soil is deficient in necessary plant foods, such as potash and phosphoric acid, as well as in nitrogen.

"It should be borne in mind that inoculation will not overcome poor results due to bad seed, improper preparation and cultivation of the land, and decidedly adverse climatic conditions."

The foregoing explains what Prof. Moore's work means to the farmers, and how they can be benefited. The preparation of the cultures is now carried on by private companies, which are prepared to furnish cultures for the different crops mentioned in the article. In time it may be that inoculated seed can be purchased from the seedmen, but up to the present time, we believe, it is necessary that farmers buy the particular cultures they will need and inoculate their own soil or seeds, as desired.

Growing Cow Peas in Oklahoma.

The Oklahoma Experiment Station has the following to say of cow peas and their uses:

The following characteristics of the cow pea give to the crop such a value that no Oklahoma farmer can afford to leave it out of the list of crops which he grows:

First, the cow pea belongs to that very important and valuable order or group of plants, which, through certain provisions of nature, draw more or less directly upon the free nitrogen of the air for the larger part of their supply of this important and indispensable plant food, nitrogen. As four-fifths of the air is composed of nitrogen, this gives the cow pea and plants of the same kind access to an inexhaustible supply of this element that is so commonly lacking in many soils in sufficient amounts to produce good, vigorous growth of plants. Plants not belonging to this order to which cow peas belong cannot draw upon the free nitrogen of the air in any way, but have to depend for their supply of this essential element in plant growth upon the amount found in the soil in various combinations, and where frequently it is lacking in sufficient amount or available forms. It is evident that such a crop leaves the soil with less nitrogen in than it contained before the crop was produced and removed. On the other hand, when any of the peas, beans, clovers (a common name given to all plants of this order) are grown on a field, the soil is left richer in nitrogen after the crop has been grown than it was before. This is commonly expressed by saying that the cow pea and other legumes are soil builders because they add nitrogen to the soil.

In growing cow peas or any of the legumes, the fact must be borne in mind that for the plant to fully accomplish the above important results, the soil must be in proper tilth and contain the other essential plant foods in sufficient amounts, and possess no detrimental properties that will retard the growth of bacteria which cause the nodules to form on the roots of the cow peas and transform the free nitrogen taken from the air in the soil so that the cow pea can utilize it in its growth. If this is not the case, the cow pea or any of the plants belonging to the order may make a very meager growth and add but little or nothing to the soil. On a very poor or depleted soil a large yield of cow peas should not be expected at first, or of the crops that follow them, as it takes time to build up such a soil by cropping, but usually it may be done in this way, and is the most economical method. In this connection the important point should be kept in mind that, by properly using the cow pea in a rotation of crops, it is possible to fully maintain the amount of nitrogen in the virgin soil and extend its original fertility greatly with comparative ease and at practically no cost.

The second characteristic of the cow pea that makes it a valuable crop for Oklahoma is its high feeding value, as it is quite rich in the important and costly food nutriment, protein, containing much more of this ingredient than most of our common farm crops. The hay is richer in protein than red clover by about four pounds in the hundred and lacks but a trifle of being as rich as alfalfa in this important food constituent. The grain is richer in protein than many of the costly by-products that are often purchased by the farmer to supply protein. Cow peas added to the usual ration fed by the Oklahoma farmer will greatly increase its productivity and lessen its cost.

Both the forage and grain are eaten by all kinds of stock. Cattle, sheep and horses are fond of this crop in any form. Hogs getting nothing but corn will eat some of the hay and will do much better than when they are fed corn alone. When hogs have access to other kinds of green feed, they do not eat the vines very readily, and when turned into a good sized patch they root up the plants and eat nothing much but the roots. If there is not plenty of green feed to

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spare they should be turned on but a small patch of cow peas every day by means of hurdles. When so handled, they will eat all the vines. Hogs are very fond of the pods and grain in them.

Thirdly, the crop may be planted during four months of the crop season with almost universal success, as it is a vigorous, quick-growing crop and produces well. Being a hot weather plant, it is especially well adapted for summer planting as a catch crop following wheat, oats and other early crops. In a fairly early season two crops of cow peas can be grown on the same land in one season.

In the fourth place, cow peas are one of our best drouth-resisting crops, and drouth seldom cuts the yield below a profitable point. The grain crop may be a practical failure due to a severe and prolonged drouth, but no season has been so dry in Oklahoma but what during some portion of it there was enough moisture to grow a fair crop of cow pea hay.

While mentioned last, it is not the least important characteristic of cow peas that they are seldom subject to the ravages of insects or plant diseases while growing and they are entirely proof against the ever-present chinch bug.

As the cow pea is typical tropical plant, and hence a hot weather plant, it should not be seeded until the soil becomes thoroughly warmed and the season settled. In Oklahoma usually the cow pea should not be seeded earlier than the last part of April and preferably the first part of May. After this time, if the soil is in good condition, the crop may be seeded down to the last of July and even to the middle of August if only a moderate supply of green foliage is wanted. The statement is often made not to plant nearer than sixty days to a probable frost. The plant is very readily damaged by a light frost and if the seed is put into cold wet soil it will generally rot. On the other hand, if the ground is well warmed up and has sufficient moisture in it, the seed will come up in two or three days and make a rapid growth from the start, and the time during which the weeds will have a chance to grow will be of short duration.

The quantity of seed required to plant an acre to cow peas will depend upon the method used in seeding. When drilled in rows, two and a half to three feet apart for cultivation, half a bushel to three pecks of seed per acre, 30 to 40 lbs., will be found sufficient as a rule. If broadcasting or close drilling is to be used, one to one and one-half bushels should be the amount. If the ground is fairly free of weeds and the conditions for rapid growth are present, a lesser amount may be used. In Oklahoma drilling in rows far enough apart to admit of cultivation usually gives the best results, particularly in drouthy seasons. The operation is well done either with a corn, cotton or wheat drill. In many cases, broadcasting or close drilling gives excellent results, but these methods should be practiced only on clean, well prepared ground at times when the conditions are favorable for a rapid growth from the start. Even then it will suffer from dry weather that would not affect the crop under cultivation.

In planting this crop, the seed should be put down into the moist ground if possible, and in order to do this it may be planted two to three inches deep, as the seed puts out a strong, vigorous seedling that will reach the surface readily through that much soil. If the seed happens to go into dry soil, it will usually keep until rain falls to moisten the soil.

There is a long list of so-called varieties of cow peas, but many of them are but different names given to the same variety. The varieties differ in the time of ripening or that necessary for maturing a crop, and the character of the growth and the amount of forage or grain they produce. As a good early variety that produces a fair yield of grain and foliage, the Oklahoma Experiment Station grows the California blackeye. As a later growing sort that produces somewhat larger growth of vines, the Whippoorwill, commonly called speckled, is used. The season and the character of the soil will alter the character of the growth of the plant quite materially; that is as to how much it takes the form of the bush with short runners, or whether it has great long trailing runners or vines.

Space will not be taken in this article to dwell upon the cultivation of this crop, as there is nothing required differing from our ordinary crops. It will respond to and pay for a well prepared seed bed and good cultivation, the same as any crop. On a good seed bed, followed by thorough cultivation, it seldom suffers materially from dry weather. In preparing oat or wheat stubble for this crop, the ground may be plowed or the stubble well disked, or it may be opened up with a lister and the peas drilled down in the furrow. All of these three methods have given good results on the experiment station farm at Stillwater. So planted, a good yield of grain has been obtained and one to two tons of cured hay per acre. If the partly matured plants or even the matured plants be cut off above the ground early enough in the season, a fine second growth will spring up.

The matter of harvesting and storing the seed and the methods of harvesting the vines for hay and the machines to use are discussed in bulletins of the Oklahoma Experiment Station. Generally some trouble is experienced in curing the hay, as the stems are large and sappy and cure much slower than the leaves. Very frequently the crop is left in the field until the leaves are all lost or the hay ruined by the rain, or it is put into the stack too soon and the hay heats. This crop should be cut for hay when the first pods that set ripen. At this stage the hay will not be as difficult to cure as that from immature plants. At the best, the hay must be left in the field several days, and generally a week, and some times longer, in order that it may properly cure. The process of curing may be hastened some by stirring and opening out the cocks, but care must be exercised not to lose all the leaves in this operation. The possibility of heating in the stack may be greatly reduced by alternating the cow pea hay with straw in the stack. Even if it does heat a little in the stack, the cattle will eat it. While it makes a valuable hay and the farmer should not be without it or a similar hay, if he thinks it is too much trouble and work to make a hay crop of it, he can utilize it as a pasture for which it will serve an excellent purpose.

The practice of planting cow peas between the rows of corn at the time of laying by the crop frequently reduces the yield of corn. The corn should be near enough to maturity before the peas are planted so that they will not have a chance to get large enough to take moisture needed by the corn in maturing. The outcome of this practice will largely depend on the season and rainfall. Many times cow peas so planted produce a good crop of grain and forage and usually a paying crop of forage if the corn is on well prepared ground and has had good cultivation. No more moisture will be taken from the corn ground if it grows cow peas than if it grows crab grass.

When the purpose of the crop is forage, cow peas and corn are quite frequently planted at the same time in the same row, drilling the corn first, following with the cow peas. This makes an excellent combination and the practice should be followed more frequently.

As valuable and seemingly indispensable crops as red clover and alfalfa are, an Oklahoma farmer can get along without them if he will fully utilize cow peas.

A farmer who does not grow some of these leguminous crops, which are sometimes called nitrogen gatherers, is not alive to his own interests.

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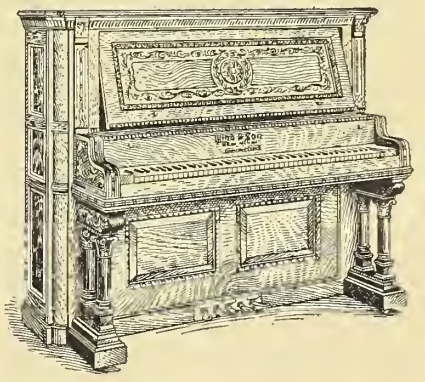

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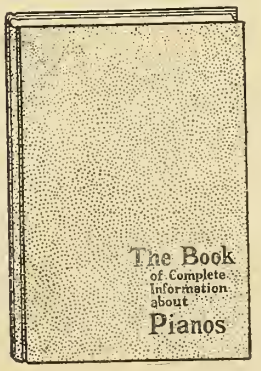

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Cowpeas in the Orchard

The cow pea is the great orchard crop for Missouri, as well as for other sections of the central west and south. That does not mean that it is always the best crop to grow in the orchard under all circumstances and to fulfill all purposes of an orchard cover crop, but it fills the bill oftener than does any other species of plant. Being a legume it augments the available supply of nitrogen in the soil, thus enriching it; it renders the orchard soil more porous and mellow; it renders the soil more drought-resistant in the long run; it may be sown late enough so as not to stand in the way of clean cultivation during spring and early summer; the cow pea is fairly efficient in protecting the soil from washing; the cow pea crop is valuable for hay or to be pastured to hogs. These and other virtues may be ascribed to it as a crop to grow between fruit trees.

Wherever the orchard soil is so poor and thin that it needs fertilizing the most important problem is to furnish the needed fertilizer in the cheapest possible way. The three chief fertilizing ingredients necessary, are nitrogen, phosphorous acid and potash. The cow pea cannot increase the amount of phosphorus or potash in the soil, but it can supply the nitrogen, getting it without expense from the air. Where fruit trees are making poor wood and leaf growth, due to poor soil, it is usually safe to assume that nitrogen is one of the plant food elements that are lacking. This may be secured by growing cow peas in the orchard. In many old, wornout soils which have long been tilled the soil may also lack the other two essential plant foods. In many of our comparatively new soils there is enough phosphorous and potash so that the nitrogen supplied by the cow pea will be sufficient to bring the orchard up to good thrifty condition.

Aside from enriching the soil in nitogen, the cow pea improves its general physical condition, rendering it more porous. A hard, lumpy, crusty orchard soil does not respond well to cultivation; it is difficult to get the land in good shape. A single crop of cow peas will mellow it to a great extent. The more porous and spongy the land, due to the growth of cow peas, the better it will withstand drouth. The cow peas add humus to the soil, which enhances its water-holding capacity. The fact that the soil becomes more porous also makes it possible to form a better dust mulch by cultivation which also increases the possibility of checking evaporation of the soil moisture. The rains of winter and early spring mostly flow off over a hard, crusty soil while they sink into a mellow cow pea soil and are stored for the dry, hot months of summer. During the dry summer of 1901 the soil in two of our orchards under experiment remained fairly moist under the cultivated surface where cow peas had been grown the previous year, but much dryer where no cow peas had been grown.

Where cow peas are grown on steep land which has a tendency to wash the stubble, if allowed to stand unplowed until spring will check the washing to a considerable extent, though not to the extent that some other crops do. Even after plowing under the peas the soil will not wash so much as it would if the cow peas were not there. The fact that the soil is mellow and loose allows the water to soak in instead of washing off, thus holding the soil in place.

The variety of cow pea to select for the orchard depends upon the locality, the length of the season in which they are to grow and the purpose to which they are to be put aside from their value to the orchard. If clean cultivation is to be given the orchard during the first part of the season it may be desirable to delay sowing the cow peas until late June, or even the first of July in southern localities. In this case it is best to sow very early varieties so they will have time to mature. Among the best early varieties for this purpose are the Whippoorwill and New Era. These sorts mature in a short time. The Black is also fairly early and will mature if sowed during the last week in June, from central Missouri southward.

If the cow peas are to be pastured to hogs, a (profitable disposition to make of them in orchards that are of bearing age so the hogs will not injure the trees), varieties which produce many seeds are desirable. Fortunately the early varieties mentioned above are good seed bearers and make a large quantity of hog feed. Some also of the later varieties make many seeds. It is well to ascertain what sorts seed best in your particular soil and select these if they are to be used as feed.

If hay is desired the Clay and Red Ripper are good, for they make lots of vines and a good hay crop. If grown for hay the peas should be sown earlier as most of those which make a good crop of hay take a longer time in which to mature. The Black, which is fairly early, also makes a fair hay crop. Where it is desired to sow as late as July 1, and at the same time to secure hay, this variety is one of the best.

The peas may be sown with a grain drill, closing every alternate drill hole so as not to get them too thick. They may also be sown broadcast and harrowed in, but this requires more seed. From one bushel to one and one-half bushels of seed to the acre is sufficient. The smaller the seeds the less seed required. The Black has large seeds and requires rather more than the other sorts named.

Where clean cultivation is being given the peas may be harrowed just as they are coming up, so as to leave a good dust mulch on the ground. The peas grow all the better for this harrowing and cover the ground before the soil can again crust over. The harrowing should be done with a spike tooth harrow. If the soil is very light, or if this digs up the plants, the harrow teeth should slope backward enough so they will not kill the young plants. It is rare, however, that harrowing endangers the young plants. We have harrowed them until it looked as if most of them were harrowed out of the ground and had them grow all the faster for it. The harrowing should not be delayed until the plants are large, or injury will result.

If cut for hay the work should be done when the pods begin to ripen. At this time some of the plants will still be making blossoms. It is best to mow the plants, however, before their leaves begin to be shed. They should lie in the field until the juice is died out of their stems. This may take two weeks. Most beginners make the mistake of putting up the hay too soon, in which case it is sure to mould. Raking and handling in the field should be done on dewy mornings, when the plants are tough, so the leaves will not be broken off. We have gotten the best results by allowing the peas to lie for a few days and then raking them in windrows. These windrows may be turned once in a while until the hay is dry.

If pastured to young hogs which are not accustomed to hustling for themselves in the wods, there is little danger of the animals injuring trees which have become well established at bearing age. Sometimes old hogs will injure fruit trees, particularly if many of them are confined in a small orchard. So long, however, as there is plenty of feed in the orchard, there is little danger of injury from well fed hogs and many find them to be beneficial to the orchard. They kill many insects and the windfalls that are infested with codling moth and fungous diseases.

If cow peas are grown in the orchard every few years, they should keep the soil in fine condition. If the soil has once become very poor it may be best to grow several crops of peas in succession, but in orchards where the trees are doing well a crop every three or four years will answer. This enables the grower o rotate crops. For example in young orchards in which corn is grown, cow peas may be rotated with corn and good results will be obtained.

Cow peas are also a good crop for vineyards. At the Station we grow cow peas regularly in the vineyard. The grapes are given thorough cultivation until late June, when the cow peas are sown. Before this practice was begun, it was a problem to hold the soil about the roots of the vines. After cropping with cow peas for several seasons the land washes but little and the vines grow better and bear better. The cow peas make sufficient cover so one does not get in the mud when pruning in wet weather in early winter or spring.

Whether grown in the orchard or vineyard the peas should usually be plowed under the following spring as cultivation begins. In this way they protect the soil without losing any essential part of their fertilizing value.

DR. J. C. WHITTEN.
Missouri Experiment Station.

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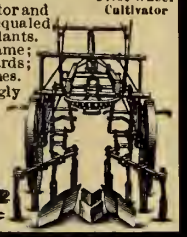
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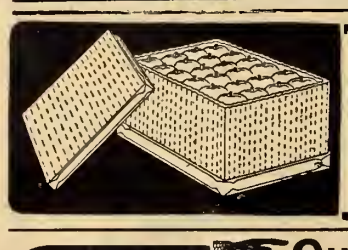
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Cover Crops for Northern Orchards.

Within the past year or two there has been a revival of the discussion regarding the best soil treatment for a bearing orchard. These opinions, while differing much in detail, may in general be grouped under the heading of those who favor clean culture and those who advocate the sod-mulch system.

Each section of the country presents its peculiar phases of this problem for solution. The severe winters and abnormal rainfall conditions prevailing in the last five years in the Northwest has greatly tended to impress the fact that under certain conditions each of these schools possess some superior points.

In the historic winter of '98 and '99, many thousands of orchard and nursery trees were root killed in the Northwest. The ground was largely bare of snow and under these conditions, the root-killing was excessive, while in localities where there chanced to be a covering of snow or a blanket of weeds, sod or any kinds of vegetation, the trees fared much better. All of this served to emphasize the value of a snow blanket and also the necessity of providing an artificial one of some kind as a substitute, on account of the uncertainty of snow in the Northwest. Even in winters of ample snow fall, we do not enjoy its full benefit in the prairie section, on account of the fierce winds from the Northwest which keep the snow on the move and finally deposit it in the valley, leaving the greater portion of the elevated country barren and exposed. A slight covering of vegetation of any kind, aids materially in forming an anchor for the snow and holding it in place.

An apple, by weight, is more than three fourths water and in the dry summer of 1901, the value of clean cultivation and dust mulch to conserve moisture, was forcibly demonstrated.

The winter cover crop strikes the golden mean between these two extremes and recognizes the value of clean culture in summer and a vegetable blanket for root protection in winter. It thus combines the good features of both systems. It permits of clean cultivation until the active growing season is past. About the middle of July or first of August the cover crop is sown and in its growth considerable quantities of water are consumed, which aids in the hardening up and ripening of the wood of the trees for winter.

Humus plays a very important part in determining the water-holding capacity of a soil. Under clean cultivation the humus supply of a soil is very rapidly consumed, hence the necessity of frequent renewals. This is supplied in the plowing under of a cover crop. Much of the soil of the Ozark country would be greatly benefited in this respect, by the frequent plowing under of clover or some other crop which would increase the humus supply of the soil. Plant food, especially nitrogen, is also added to the soil by this process. Much of the plant food stored up in the soil is locked up, so to speak, and cannot be used by the plant until it has been worked over or changed chemically and brought into an available condition. This working over is done by certain kinds of soil bacteria and the presence of humus in the soil does much to encourage them in their work, as it forms a harbor or more favorable medium for these bacteria to live in.

One objection to clean culture is in the fact that such soils are very likely to wash seriously during the winter and early spring. A winter cover crop acts as a soil binder and prevents this very largely. As this crop is sown at a dry season of the year a thorough preparation of the seed bed is important. The soil must be well pulverized to bring the soil particles in close contact with the seed coat, otherwise, germination is apt to be poor. Rolling after the seed is sown, is a great advantage.

The kind of a cover crop to sow depends much on the character of the soil one is dealing with. On clay soil, some nitrogen gathering crop, such as Canada field peas, soy beans, or hairy vetch, is excellent. However, in this latitude, frost comes rather early for soy beans as this plant is easily affected by cold, while the field pea grows quite late. Hairy vetch is an excellent cover crop for thin soils, but the present price of the seed makes it rather expensive. On the black prairie soil, which is usually quite rich in nitrogen, oats, rye, pumpkins, or some non-nitrogenous cover crop is desirable. In our own orchard, we gathered an excellent crop of Hubbard squash last year and allowed the vines to remain as a cover crop. This plant does not form the vegetable blanket that some others do and yet it aids materially, at least, for holding the snow in place if there chances to be any.

A. T. ERWIN.

Iowa Experiment Station.

Curing Cowpea Hay.

The curing of cowpea hay is not an easy task, for the hay requires some time to cure, and if not properly handled the leaves will shatter badly. The Mississippi Station gives the following directions for curing the hay:

"The cutting is done when the crop is fully mature, which is about the time the pods begin to ripen and the foliage begins to change color. The mowing machine blade is kept sharp and run as close to the ground as possible. If the peas are in rows the cutting can be done much cleaner and better with a very sharp hoe, and at very little additional cost.

"If the weather is good, as is usually the case when the crop is ready, in August or September generally, the vines are raked up the same or the following day, and put into cocks of the size that two men can handle with a fork when cured. They are left in the cocks for four or five days, being turned over once or twice during the time, then hauled to the barn or stack. In case they are put in a stack a good covering of grass hay is necessary in order to shed the water. The sides of the stack should be built straight up to prevent water spoiling the outside hay. Putting in cock is desirable, because the hay is then cured by the circulation of air through it, and not in the direct sunlight. Any hay is better when cured in the shade. If the weather is damp or rainy the hay is not raked at all till cured, when it is carried directly to the place where it is to be stored. If it continues to rain for several days after cutting, do not touch the hay till ready to put up, and then be sure it is dry when packed away. This is a precaution that must be observed in storing any kind of hay—do not put up when even moist with dew, or it will mould. The crop may sometimes be lost in a protracted wet spell, but can generally be saved in such condition as to make very good forage.

"Other methods are practiced in saving hay. One is to put up green and is entirely satisfactory, when so packed that air can circulate freely through it. One of the methods of putting up green is to erect a stack pole and nail a strong cross piece on the pole extending to the outer edges of the stack. Put on a layer of green vines two or three feet thick, then nail on another cross piece, and so on to top of stack, finishing off with grass hay. The cross pieces prevent the vines packing down closely and at the same time allow the air to enter the stack. They can be cured and kept by this method. It is somewhat more expensive than curing in the field, as it necessitates the handing of a great amount of water in the green vines, and the cost of stack pole, cross pieces, etc., amount to something."

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Some Experiments in Growing Cowpeas

During the last few years the matter of soil improvement by the rotation of crops, has been receiving much attention. The rapidly increasing area of the abandoned farms in the Eastern states, with this area rapidly spreading westward bears sad evidence of the fact that the American farmers have been wasteful of the soil's fertility. Not only has the necessary elements of plant food been lessened in our soil, but the humus and the other elements regulating the tilth have been used up so that it is only with difficulty that many of our farms can be cultivated, and even then they produce crops so poor as to scarcely pay for the labor of planting and cultivation.

But by a carefully managed system of rotation of crops, most all of these farms could be brought back to the proper condition of fertility or perhaps made very materially better. In the mineral particles composing our soils there are usually sufficient mineral elements, with one exception, to maintain a luxuriant growth of plants. This one element which is lacking is nitrogen, one of the most important for the growth of plants, yet one of the most fickle and unstable of all of the elements. When a nitrogenous fertilizer of some sort is applied to these soils, a hearty response is had by a bountiful increase in the harvest. But nitrogenous manures are hard to get and expensive to buy; however, nature has supplied a way whereby nitrogen can be cheaply and easily supplied to the soil. All of the plants of the clover family have the peculiar ability of grasping the nitrogen of the air and incorporating it into their own tissues, and upon the death of the plant this nitrogen then becomes available for other plants.

During the past four or five years, Prof Mumford of the Missouri Experiment Station, has been conducting experiments demonstrating the effect of the fertilizing action of cowpeas on soil planted to corn, wheat, and rye. In one of these experiments one acre of corn was planted on land which had been in corn for forty or fifty years without any change, and which had been producing a harvest of about eight bushels of very poor corn per acre. The soil was extremely hard and stiff, and contained practically no humus or nitrogen. On an adjoining acre in the same field was planted cowpeas, and both crops given the necessary cultivation for their best development. The corn made a very feeble stand, the stalks being very small and were much scattered over the field, while the tallest of them were not higher than a man's head. At gathering time this plat yielded eight bushels of poor corn, as had been its custom for the preceding years. The acre of cowpeas made a very good growth, however, as was expected, since this plant will make a good growth on very poor land. In the south where the cowpea is more extensively grown, there is a familiar saying that land too poor to grow cowpeas is extremely poor indeed

Rye six feet tall, on land having produced a crop of cowpeas the previous season. In the center background may be seen the top of a man's hat and a seven-foot pole.

But this acre of cowpeas, when mowed for hay, produced a ton and a half of excellent hay. During the next season both plats were planted to corn and given the same care and cultivation and at gathering time the plat planted to corn the preceding year yielded ten bushels of corn, while that planted to cowpeas yielded thirty bushels, an increase of two hundred percent. Estimating the value of these crops in dollars and cents, with corn at fifty cents per bushel and cowpea hay at ten dollars per ton, the plat planted to corn alone had returned only nine dollars while that planted with cowpeas and followed by corn, returned thirty dollars. In other

COWPEAS AND CORN.
At gathering time this corn yielded eight bushels of poor grain, while the cowpeas produced a ton and a half of excellent hay.

words, one crop of cowpeas followed by one crop of corn, produced more than three times as much money as did the same area on the same soil when planted to corn alone. Such yields as this are not phenomenal, however, for farmers all over the state are practicing this method of rotation and are getting as great if not greater differences in increased yield than did the Experiment Station.

In another experiment where wheat instead of corn was used, there was had a gradual increase in the yield of wheat, but not as marked as was the increase with corn. In this experiment the soil was more fertile to begin with, but still was a cold, stiff clay loam. The wheat and cowpea were grown on the same land four years in succession, resulting in the production of one hundred and forty-five bushels of wheat and five tons of cowpea hay. Estimating the value of this with wheat at seventy-five cents and cowpea hay at ten dollars per ton, the one acre in four years returned in cash $158.75, or approximately $34.65 per year.

In this experiment the wheat was harvested early in July, and as soon as it was moved from the field the ground was plowed and planted immediately with New Era cowpea. This in turn was cut for hay during the last week in September, but before it had reached its fullest growth. As soon as the hay could be taken from the field a disk harrow was run over the soil without the ground having been previously plowed, and the wheat for the next season's crop planted early in October. This rotation of two crops on the same field in one season has been kept up for four years and the soil has not only been improved in tilth and fertility, but the yield of wheat has increased also. In a corresponding plat where no cowpeas have been grown, the soil has been decreasing in fertility and the yields of wheat becoming smaller year by year.

Practically the same results were had where cowpeas and rye were alternated. One striking thing in this rotation, however, was the remarkable length attained by the rye straw, as is shown by the accompanying photograph. In the soil on which cowpeas has been grown the stems lengthened out until they were over six feet tall, and with a remarkable dense stand. On the plat not planted with cowpeas the rye made only an ordinary growth, and with a much poorer stand.

That the cowpea or any of the many other leguminous crops, is an excellent improver of the soil is being more widely recognized each year. Many of the farmers throughout the country are now regularly alternating wheat and cowpeas and are not only increasing the yield of wheat by improving the fertility of the soil, but are adding materially to their cash receipts from the hay of the cowpea.

E. H. FAVOR.

Mo. Exp. Station.

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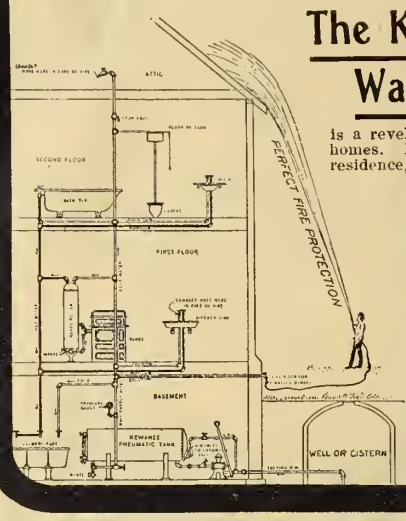

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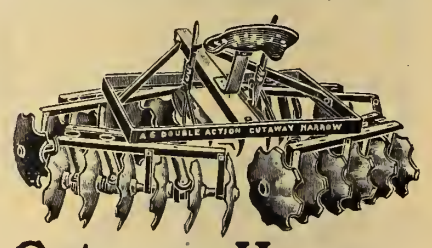

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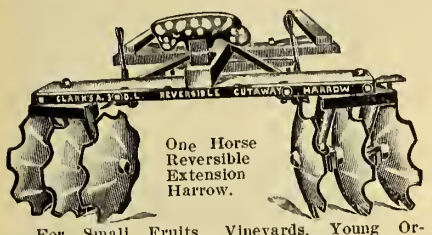

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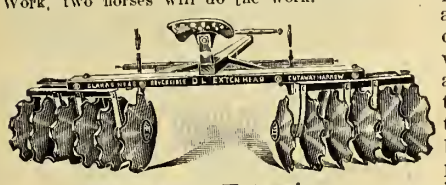

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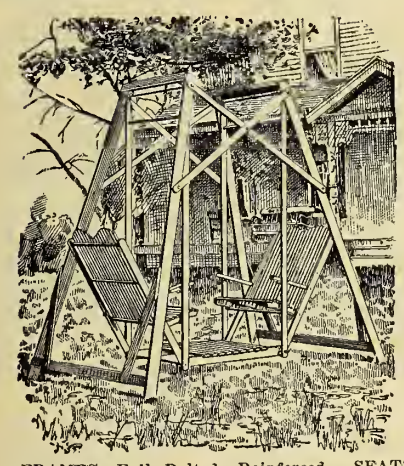

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Cowpeas and Hogs in an Orchard.

Most fruit-growers will agree with me that the first few years of a fruit tree's life should be stimulated to active and vigorous growth, by either cultivation or fertilization, and as the former is much the cheaper and most usual, we will suppose that this plan is to be adopted in securing an ideal orchard. This cultivation should begin with early spring and end in June or July, and should be followed by some crop that will not only cover the ground to prevent washing and leaching of the soil, but a crop that will add fertility as well. No plant is so near suited to this general purpose as the cow pea.

In my orchard in Perry County, Mo., I have the orchard divided into plots of twenty to thirty acres, and always grow cow peas in two or more of these plots, and hog off the peas when ripe. Plant in rows three feet apart if late cultivation is desired for the trees, and run a cultivator through the rows twice, giving cultivation to both the peas and the trees. One peck to the acre will be ample seed if planted with one-horse corn drill. If late cultivation is not desired, sow broadcast or with wheat drill, one bushel to the acre. In sections south of St. Louis, 15th to 20th of June is my favorite time for seeding. Farther north earlier seeding should be followed. My practice is to sow one plot Whippoorwill peas for early hog feed, and Red Ripper for late. The latter kind will remain on vines or lie on the wet ground all winter, and remain sound and fertile until spring. Pea vines lie close to the ground and prevent washing of the land during the winter and spring months, and will furnish fifteen to twenty bushels of hog feed to the acre equal to like quantity of the best corn—in fact, is better for the growing hogs, but not equal to corn for finishing hogs for the market.

Peas should never be allowed to remain on the ground during the whole winter, as field mice are very fond of them, and they are liable to get so numerous as to damage the trees by burrowing around the trunk of the tree, and gnawing the roots and body near the ground. I had the misfortune several years ago to lose nearly my whole herd of hogs from cholera, and did not pasture down as I intended, and many trees were damaged and killed by mice.

Many different varieties of peas are advertised by the seed houses, but after trying nearly all kinds I prefer Whippoorwill for early and Red Ripper for late. Next best early is New Era and Blacks for late. It is important that Missouri or Southern Illinois grown peas be secured for seed if possible, as seed grown in the far south will not mature so early as northern grown peas, and require a longer season to mature.

Experiment stations that have tested the fertilizing qualities of peas, claim an average crop will add about 100 pounds of nitrogen to the acre. This is the most expensive ingredient in all commercial fertilizers, and cost around ten cents per pound when bought in this form. In a crop of cow peas it costs comparatively nothing, as the hog feed will much more than compensate for the cost of seed, and cultivation, and what is eaten by the hogs is not lost, but added to the soil from their droppings, in a condensed form of manure or fertilizer ready to be taken up by the trees, in the most available form. I have been growing peas for the past fifteen years on this plan, and still practice it, and know it to be the best cover crop that can be grown, and in connection with the hogs gives the grower an annual revenue from his orchard that he would not otherwise have had, as we fruit-growers often have failures and no returns. But by this system we can always depend on a revenue from the sale of fat hogs. I have other crops growing in other plots so as to give a continuous pasture from early spring until hogs are matured.

If your readers are interested, will give this in a later issue on "Hogs in an Orchard."

W. R. WILKINSON.

St. Louis, Mo.

(We know The Fruit-Grower readers will be glad to have a further report of Judge Wilkinson's experience.—Ed.)

The Nurserymen's Program.

The thirtieth annual meeting of the American Association of Nurserymen will be held at West Baden Springs, Ind., June 14, 15 and 16, and is expected to be one of the best meetings the organization has ever held. Mr. H. P. Kelsey, chairman of the program committee, sends us the following program of the meeting. Each subject is allotted a definite period of time, so that the program can be carried out in regular order.

Wednesday Morning, June 14th, 10 o'clock.

Calling to order—Pres. E. W. Kirkpatrick, Texas.
Welcome to Indiana, Andrew J Rhodes, Indiana.
Response for the Association by the president.
President's address.
Reports of secretary and treasurer.
Reports of committees.
"The Cost of a Tree," Harry L Bird, Michigan. Discussion by Aubrey Frink, Florida; J. Horace McFarland, Pennsylvania; Herbert S. Chase, Alabama, and members.
Nomination of state vice-presidents.

Wednesday Afternoon, 2 o'clock.

Election of state vice-presidents.
"Grading Nursery Stock," L. A. Berckmans, Georgia.
"The Low Prices of Ornamental Stock," Chas. Maloy, New York.
"The Grape, the Commercially Neglected Fruit," T. V. Munson, Texas.
"Experimental Orchards for Nurserymen," L. C. Corbett, U. S. Dept. of Agr.
Ten minutes will be devoted to the discussion of each of the foregoing papers by the members.

Wednesday Evening, 7:45 o'clock.

By aid of the stereopticon the extremely interesting papers of the evening sessions will be fully illustrated. It has been the endeavor of the committee to make this year's program an eminently practical one, and we believe all the subjects presented are of unusual interest to every member. As the room must be darkened, members are respectfully requested to be present at 7:45 sharp.

"A Tree Garden to Last a Thousand Years" (stereopticon), J. Horace McFarland, Pennsylvania. Discussion by J. Woodward Manning, Massachusetts, and members.
"Soil Inoculation" (stereopticon), Dr. Geo. T. Moore, U. S. Dept. of Agr. Discussion by J. H. Hale, Connecticut, and members.

Thursday Morning, June 15th, 9 30 o'clock.

"The New Horticulture," H. W. Stringfellow, Texas.
"Best Methods of Improving Our Standards in Trees, Fruits," G. L. Taber, Florida. Discussion by members and W. C. Reed, Indiana.
"Quality vs. Quantity," Prof. John Craig, New York. Discussion by members.
"Plants in Department Stores," Howard A. Chase, Pennsylvania. Discussion by members.

Thursday Afternoon, 2 o'clock.

"Office Management," Tohmas B. Meehan, Pennsylvania. Discussion by Chas. J. Brown, New York. Wm, Pitkin, New York.
"The Fruit Exhibit at the World's Fair." Wm. P. Stark, Missouri. Discussion by J. S. Butterfield, Missouri, and members.
The session will adjourn at 3:30 p. m., when the American Protective Association and the Nurserymen's Mutual Protective Association will hold their annual meetings as per notices of the respective secretaries of those organizations.

Thursday Evening, 7:45 o'clock.

"Picking, Packing, Grading and Shipping Fruit" (stereopticon), J. H. Hale, Connecticut. Discussion by members.
"Crown Gall and Root Knot" (stereopticon), Geo. G. Hedgcock, U. S. Dept. of Agr. Discussion by C. L. Watrous, Iowa; J. H. Hale, Connecticut, and members.

Friday Morning, June 16th, 9 o'clock.

Election of officers.
Selection of place for next convention.
Appointment of committee on resolutions.
New business.
"Refrigeration of Nursery Stock and Storage in Cellars," Madison Cooper, New York. Discussion by members.
"Excluding Nursery Advertisements Quoting Prices," James M. Irvine, Missouri. Discussion by Theo. Smith.

Friday Afternoon, 2 o'clock.

"The Evolution of Importing," James McHutchison, New York. Discussion by Hiram T. Jones, New Jersey; Andre L. Causse, New York; F. L. Atkins, New Jersey.
Answers to questions deposited in Question box.
Report of Committees.

Friday Evening, 7 o'clock

Fruit Banquet—This is a special feature, and it is hoped will be an enjoyable one. Many members have kindly agreed to contribute liberally fruits in season in their respective sections, and a choice selection is now assured. Native wines are also expected. Prominent members and well-known speakers will respond to toasts and the dinner will be presided over by one of our leading members, Mr. J. H. Hale, acting as toastmaster. Tickets will be issued at a reasonable price per plate, and must be secured from any member of the program committee or the secretary of the association up to Thursday night, the 15th of June. There will be dancing after the banquet, the music being furnished by the Baden Springs Hotel Company.

Saturday, June 17th.

A special excursion has been arranged to Mammoth Cave, Kentucky, and details will be announced in advance. Members wishing to take in this excursion must apply to the committee before Friday at 2 p. m.

PURE WHITE LEAD

The House Paint Question

Nearly all house paint can be classified in this way:

1. **Pure White Lead and pure linseed oil (the best paint), mixed to suit varied conditions of season, weather and surface at time of application.**
2. **Mixed paints, sold in cans, ready to use.**
3. **Adulterated white lead and oil.**

The **second class** is used by people who think they will save the cost of hiring a painter; by men posing as painters, who have not learned their trade; and by others who do not know that to get the best results, paint **must** be prepared to suit the peculiar conditions of the work to be done.

(Combinations of water, benzine, barytes, whiting, asbestos, rubber, silica and similar material of little or no paint value are sold under the name of mixed paints by some paint manufacturers.)

The **third class,** has no excuse for its existence. This adulterated lead is palmed off on people who want and ask for the pure article; it is used by some painters who undertake to do a job for less money than it is worth.

(Cheap material without paint value is frequently mixed with White Lead to increase the profits of the manufacturer and dealer. The man who owns the house on which the stuff is used is the sufferer.)

The **first class, Pure White Lead,** is used by conscientious, practical painters, and is specified by property owners who have studied the paint question sufficiently to discover its simplicity. Pure White Lead mixed with Pure Linseed Oil possesses in the highest degree those qualities necessary to the decoration of a house and its proper protection from decay. It has been the standard paint for generations and will be, always, with all men who appreciate that **cheapness** is not always **economy** and that **handiness** does not always mean a **saving of labor.**

Our booklet, "What Paint and Why," tells the truth about house paint in simple language. Sent free from any of our offices.

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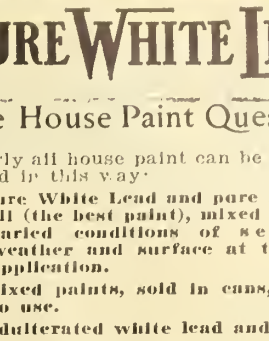

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Iowa grown cowpeas, New Era, the surest cropper, $2.25 per Bushel.

Delivered prices on large lots.

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ST. JOSEPH, MISSOURI

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W. G. Campbell, Jr., General Manager James M. Irvine, Managing Editor

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Entered as Second-Class Matter in the Postoffice at Saint Joseph, Missouri

Vol. 16. MAY 15 ,1905. No. 5

Now that our special subscription offers have been withdrawn, no one should cease to try to get new subscribers to The Fruit-Grower. The paper is worth the price we ask for it, and many persons will really be more apt to subscribe now than they would at special rates. A great many persons have classed The Fruit-Grower among the cheap publications when they learned that five subscriptions were accepted for $1. They could not realize that a good paper could be sold for that sum. Now that these offers have been withdrawn, these persons will be more apt to appreciate The Fruit-Grower. Ask them to subscribe—ask everyone to subscribe, in fact, before the rate is advanced next year.

Apple buyers are now beginning to tell their stories of the losses which many firms have sustained the past season, on their apple holdings. And it is certain that some firms have lost heavily. In telling the stories of the losses, however, care should be taken that the public are informed concerning the class of fruit on which the losses were sustained. Some time ago we had occasion to examine some New York apples, on which it is evident that someone lost money. But it was hardly to be wondered at that money was lost on this fruit, for it was fruit which should never have been stored. The quality was poor, the fruit being very scabby, and it had not held up well in storage. It was a very slow sale, for the apples did not present an attractive appearance. Another lot, this lot being Greenings, was in especially bad condition. Added to the poor quality at picking time was added the damage which came from long storage; the fruit was more or less scabby, although comparatively free from worms, and it had "scalded" badly in storage. No one wanted such fruit, and consequently the price was low. Whose fault was it? We do not know. Who sustained the loss? We do not know that, either, but one thing is sure: The loss ought to have been sustained by the one who packed and stored such fruit, for it should never have been stored at all. At the time this inferior fruit was selling at a very low price, good, sound, well-colored apples were selling a high prices. Fancy Winesap and Jonathan were retailing at $2.50 per bushel, and even poor old Ben Davis from Colorado was bringing $2 per bushel. It was not the fault of the market—the demand was good for good fruit. It was the fault of the fruit itself, and it will likely always happen that one who packs and stores such grades of fruit will lose money—and he ought to lose money, too.

The Fruit-Grower has received the fourteenth biennial report of the Kansas Department of Agriculture. This is a book of 1,044 pages, with 175 illustrations and it is one of the best Secretary Coburn has ever sent out—and that means it is one of the best which has ever come from any state. Kansas is receiving very much attention now with its fight with the Standard Oil Company, and some persons may get the idea that Kansas is a great oil state, and that therein lies her wealth. But this is a mistake. Kansas is an agricultural state and a good one. Her wealth lies in her agriculture, and this board of agriculture with its very efficient secretary, has done much to improve agriculture conditions. Secretary Coburn tells us that the farm products for 1903 and 1904 were worth $754,954,208. This is about 5 per cent more than for the two previous years, and is more than the state ever produced before. Kansas is prosperous, even without its oil products, and will be as long as wheat, corn, potatoes, hay, cattle and hogs are as much in evidence as they have been during the past few years.

With the running of telephone lines throughout the country districts, farmers are confronted with a nuisance and an evil which has for a long time worried residents of the cities—i. e., the butchery of trees along the roadside to permit the stringing of the wires. It is really enough to make one "fighting mad" to have some lineman who wants to put up a telephone or electric light wire, butcher a tree which has been years in growing, and which is injured beyond recovery by the cutting and sawing to which the lineman subjects it. In some cities attempts have been made to stop the practice, but in many cases these efforts have failed. In St. Joseph, for instance, a house-mover found that a large hard maple tree, planted at the curb, and with wide-spreading branches, interfered with the moving of an old shack of house which he was transferring from one point in the city to another. His men started to cut all the branches from one side of the tree, to permit the passage of their house. The owner of the tree objected, and by threatening to shoot the man who cut the tree he drove them away. The house could not be moved, and a few nights afterward someone cut down several large hard maple trees. Everyone in the neighborhood was incensed, and all were morally sure who had done the work—but it was impossible to prove it, for the work was quietly done at night, and nothing could be done. The house was worth only a few dollars, at most, and the trees had been generations in growing. But in this commercial age they had to be sacrificed. These things should not be allowed, and in every section farmers should see to it that the trees are respected when lines are to be strung. Dedham, Mass., has a regulation, which has been declared legal, which prohibits any one from working in street trees except someone appointed by the tree warden, and any public service corporation which has need of cutting a limb from a street tree must obtain permission from the warden, and usually these corporations employ someone appointed by the warden to do the necessary pruning. Similar regulations are in force in Lowell, Mass. A long time is required to grow good trees, and they should be preserved. Everyone who loves a tree for its own sake recognizes that it has rights which must be respected, and those who have not this appreciation must be forced to obey certain regulations for the protection of street trees. This is a problem for the cities, but it is becoming a problem for the country folks, now that trolley lines and telephone lines are being extended to the rural districts.

Do you read the advertisements in The Fruit-Grower carefully? Read them all, every month. Scarcely a day passes that someone doesn't write to ask where they can purchase this or that article, which may be advertised in our columns regularly. Study the advertisements. By so doing you will save money.

The Trip to Texas.

An excursion of fruit-growers will leave St. Louis on the night of June 20, over the Cotton Belt Railway, for a trip through the fruit section of Eastern Texas. This is the country, it will be remembered, where Roland Morrill of Michigan is doing things, and where many other growers are producing excellent peaches and other fruits, as well as tomatoes, potatoes and other early vegetables. This excursion will be made at a time when it is expected the Texas growers will be in the midst of the peach season, and is undertaken for the purpose of acquainting Northern growers with the possibilities of the Texas country and with the methods in vogue in that country. In the party will be many of the leaders in horticulture in the Middle West, and a most enjoyable trip is promised. The Cotton Belt hauled about 1,600 cars of produce from this territory last season, and this year the crop is expected to be even better.

Leaving St. Louis at 8 o'clock on the night of June 20 by special train, the party will arrive at Tyler, Texas, the following afternoon. The train will be made up of reclining chair cars, excursion sleepers and standard Pullman sleepers, so that any class of accommodation desired can be had. The orchards in the vicinity of Tyler will be inspected, and a side trip will be made over the Lufkin branch, on which line are located the orchards of the Morrill Orchard Co., the Cherokee Orchard Co., and the California-Texas Co. The Morrill Company alone has 12,500 acres of land, which is rapidly being put out in fruit and truck. Mr. Morrill will help to welcome the visitors.

After inspecting the orchards and fields and witnessing the operations at shipping time, the visitors will be free to return as they please, the return tickets being good for 21 days.

Special rates will be made for this trip. This rate will be on basis of one fare for the round trip, plus $2. Stop-over privileges will be allowed, so that the visitors can inspect other localities on the trip. The rate of one fare will apply from St. Louis, but special rates will be authorized for the occasion from points in Missouri, Illinois, Indiana, Ohio, Michigan, Iowa and Wisconsin and other territory. Those who are interested should write to E. W. LaBeaume, G. P. & T. A., Cotton Belt Route, St. Louis, Mo., in regard to the matter, and he will take up with the line of railway you will use in getting to St. Louis, to secure rates from that company. The better way is to read the advertisement of this company on the last page of this issue, and send the coupon, asking for full information. It will be cheerfully furnished, and if this is done now, there will be ample time to make all necessary arrangements for special rates from all points.

First Article Was a Prize Winner.

I received your letter and check for first prize for gardening article, for which accept my thanks. As this was the first article I ever wrote in a prize contest, I was much surprised to win the first prize, but was pleased that I did. Success to Brother Jonathan and The Fruit-Grower.

MRS. ETTA B. STEWART.
R. F. D. No. 3, Oregon, Mo.

H. C. Goodman, Early, Iowa, writes that he protects trees from injury by mice by using tin cans. Both ends are taken out of the cans and they are ripped open on the side. Then these bands of tin, as they are then, are placed about the trees. They need not be removed, as they will easily spread as the tree grows.

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$25 FIRST PAYMENT
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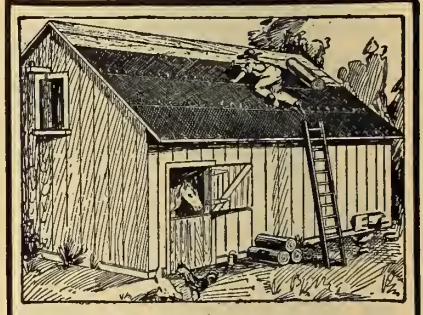

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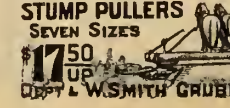

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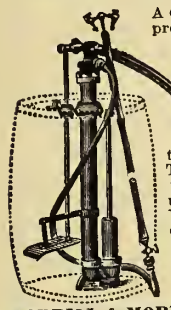

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is the subject at issue and no wide awake farmer will doubt which is more desirable.

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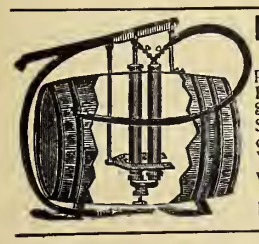

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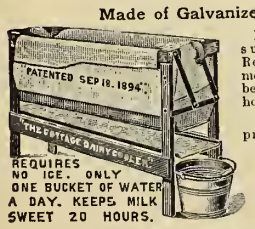


In winter a safe. In summer a refrigerator. Requires no ice. Thermometer stands 20 degrees below the atmosphere in hot weather.

Sold on trial and approval. No agents wanted. We sell direct from factory and save purchaser agent's profit. Write for catalogues and special introductory offer. Address

MILK COOLER AND STOVE FACTORY
Rogers, Bell County, Texas

FARM TELEPHONES

BOOK FREE — How to put them up—what they cost—why they save you money—all information and valuable book free. Write to

J. ANDRAE & SONS, 869 W. Water St., Milwaukee, Wis.

The Family Circle

In accordance with announcements which have been made during the past few months, all special subscription offers were withdrawn on May 1. Our regular rate of 50 cents per year now applies, for old and new subscribers.

Some subscribers want to know about extending their subscriptions, in view of the increase in subscription rate to $1 next January. We will allow anyone to extend his time to not more than four years from present date, at 50 cents per year. No extension for a longer time at this rate.

How about getting clubs of new subscribers? Well, they must be paid for at the regular rate of 50 cents a year. But we will give a premium of one of our Brother Jonathan booklets for every new subscription sent in by a person whose own name is on our list. These booklets sell for 25 cents each—and they are worth it, too—so that every reader of The Fruit-Grower should feel interested in getting new subscribers to secure these premiums free.

Everyone who is interested in growing apples, peaches or strawberries, should be especially interested in Booklet No. 2, "A Treatise on Spraying," at this time, for this booklet tells about the insects which prey upon these fruits. This booklet also has the different formulae for making insecticides—kerosene emulsion, tobacco tea, paris green, arsenate of lead, etc. This is the booklet which everyone needs in the fighting of insects, for most of the insects are shown by drawings and they can be easily recognized. This is a premium which everyone ought to earn just now. If you want to pay cash, the charge is 25 cents.

We think this is now plain enough: Old subscribers can renew their subscriptions at 50 cents a year, up to four years from now. New subscriptions must be accompanied by 50 cents, and for every new subscription we will give the person sending it, provided his name is on our list, a copy of one of our Brother Jonathan booklets, to be selected by person sending club. Five new subscribers, accompanied by $2.50, entitle one to the entire series of five booklets.

All of this, of course, is preparatory to the increase in our subscription rate next January. At that time the rate will be advanced to $1 per year. The paper will be improved—in fact, is being improved. One improvement is the use of colored cover designs every month, which render the paper more attractive, we believe. A great many of our readers have written us in regard to the proposed change, and nine out of every ten persons recommend keeping the paper a monthly—in fact, the sentiment is nearly unanimous against a semi-monthly.

Most of these subscribers realize that The Fruit-Grower is worth $1 a year, especially since improvements are to be made, and they therefore express their willingness to pay the increased rate. Of course there are some who object. This letter, for instance, is from a man of that sort:

"Inclosed find $1 to renew my subscription for three years. I see that you contemplate raising the subscription rate. As sure as you do that, you can cancel my name off your list as soon as the three years is up, without any further notice. You ask the view of your readers. My view is this. Publish the paper twice a month, about the size it is now, and leave out all advertisements. Yours truly,

"Dubuque, Iowa."

Whew! Twice a month, as large as at present, and leave out all the advertisements. And no increase in subscription price! There it is. We thought perhaps this subscriber was trying to have fun with us, but there is his letter, and he sent $1, so there was no foolishness about the matter. But it can't be done, brother. We wish it could, but it cannot. The very proposition is about like the man they told us about in Georgia last year, who ran for office on the platform of being in favor of largely increasing the appropriations for public improvements and decreasing taxation at the same time. He was also in favor, he said, of giving an office to every man who applied for the same.

But he wasn't elected, so he never had a chance to show how these things could be done, and so we don't know how to accommodate this Iowa brother.

We will add just here that we do not regard the advertisements as an objection—rather the reverse is true. We would not pay as much for a paper like The Fruit-Grower without the advertisements as we would for one with a line of business like that appearing in our columns. Our subscribers who do not read the advertisements are missing something, and we recommend that they study them carefully, and profit by them.

The letter quoted above is one of only a very few—a dozen or so—which we have received which do not approve of our decision to raise the subscription price. We never had so good a subscription month as we had in April. Ordinarily subscription receipts show a decrease as farmers become engaged with their spring work, but this year the subscription department has been rushed to the limit, and April broke all records. We never received such a nice lot of letters, either, as we received last month, and for the encouragement which they brought we are profoundly grateful.

F. S. Kirkpatrick, Lynchburg, Va., says: "I inclose $1 for renewal for three years. It looks like buying Albemarle Pippins for 25c a bushel."

About a year ago we adopted the Brother Jonathan trade mark, and it has become known all over the country. The other day we received a letter addressed like the following, and it came right through without a hitch. It was mailed one day and we received it the next:

After 3 days, return to
Bro. G
PRINCETON, Scott Co., IOWA.

St Joseph Mo

The smiling countenance of Brother Jonathan was the only thing to indicate that it was intended for The Fruit-Grower, but we got the letter all right. We hardly recommend this form of address, however, but it shows that Brother Jonathan is becoming widely known.

Are our readers keeping account of their gardening operations this season? We hope that a great many are, and that they will get some good photographs, so that we can have some illustrated articles for our Gardening number next March. Don't forget this matter now.

Also, those who are interested in spraying should try to keep in mind certain phases of their experience which will enable them to contribute to the Spraying number next February. Good photographs will also be desirable in this line.

During the summer season The Fruit-Grower hopes to present some special articles which will keep the paper up to a high standard even during the dull season. No one can afford to overlook these summer numbers, for we want the matter to be seasonable and to the point. Not the least important feature of the summer season will be the reports concerning the probable crop of fruit in all sections. If you can help to make these reports more effective, drop us a line, for we want them to accomplish the greatest possible good.

BROTHER JONATHAN.

Special Prices

furnished on early orders. Send us your list of wants for estimate. Do it now. We can save you money.

For 30 days we will book orders for the following lowpriced collections of shrubs and roses. **Strong, field-grown plants,** true to name, carefully packed, delivered in the fall, or spring 1906, as desired. Remittance must accompany order.

Collection A. $1.00—1 Hydrangea, P. G.; 1 Syringa; 1 Deutzia; 1 Weigelia.

Collection B. $1.00—Four Roses, 1 Crimson Rambler, 1 White Rambler, 1 Yellow Rambler, 1 Dorothy Perkins, (new) choice.

Collection C. $2.50—12 Hardy Perpetual roses, **best named varieties,** excellent assortment of colors. Makes an ideal rose bed.

Catalogues on request. We aim to give you a square deal.

The National Nurseries
LAWRENCE, KANSAS

WOODVIEW NURSERIES

Until surplus is reduced will quote Special Prices. Name number wanted and size, when you write. 50,000 Apple, 50,000 Peach, 13,000 Pear (6,000 Bartlett), 25,000 Sour Cherry, largely Early Richmond, Dyehouse and Montmorency; 8,000 Japan Plums. Catalogue.

B 4, MT. HOLLY SPRINGS, PA.

Kansas City Nurseries

A general line of Nursery Stock, WHOLESALE and RETAIL. GRAPE VINES, a heavy stock of Concord and Moore's Early, one and two-year, Worden Niagara, etc., one-year. Small fruits, Rhubarb, Asparagus, Ornamental Shrubs, Cal. Privet, etc.

We publsh the best and cheapest 80-page Co-operative illustrated descriptive Catalogue in the market of which we have just issued a new edition.

This is the great Railroad center of the West, and we can ship drect to almost any point without transfers.

Blair & Kaufman

Office 233-34 Rialto Bldg. Kansas City, Mo.

The Right Place to Buy Trees

is where you can get the best trees at right prices. This you can do by buying from us. Our trees are propagated direct from choice bearing, re-selectd trees, they will produce fruit of highest color, richest flavor, most uniform size and the trees are hardy, early and prolific bearers. We guarantee our trees and prices to please. If you want an apple that will keep until the new crop comes in, plant the Missing Link apple.

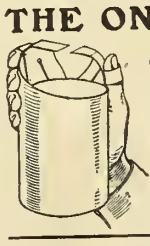
Missing Link Apple Co.

Nurserymen, CLAYTON, ILLINOIS.

RAPE It pays to sow **Dwarf Essex Rape** which has proved to be the most valuable forage plant in existence for Sheep, Hogs or Cattle. Costs only about 35 cents per acre for seed; yields 20 tons per acre. Our seed was grown in Essex, England, and is extra choice. Descriptive circular and sample free if you mention this paper. Ask for copy of our large illustrated catalog of Garden and Farm Seeds. Free for the asking.

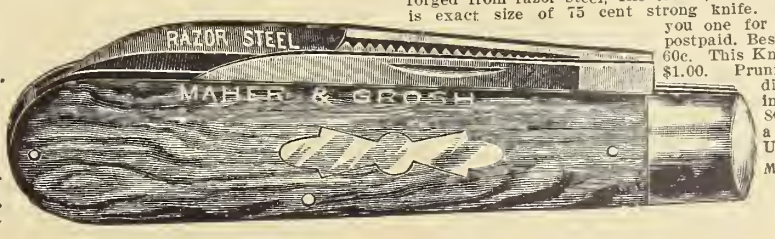
IOWA SEED COMPANY, DES MOINES. IOWA.

THE ONLY SUCCESSFUL CHERRY PICKER



You can gather cherries much faster; the cherry is not touched by the hand or bruised. The long unsightly stem is severed and most of it is left upon the tree; hence the fruit looks much more attractive in the box or basket. It also keeps much better and the fruit buds for the next year's crop are not injured. The device consists of two steel jaws hinged together at the lower ends, and at the top are two shear-like clipping edges. One of the jaws is movable under the thumb and the other is riveted to the receptacle, which holds a pint. It is held in one hand and operated easily and rapidly. The other hand is free to hold the twigs, etc. Every cherry that is clipped goes into the cup and is secured. The picker was thoroughly tested last season and gave entire satisfaction. Sent post paid on receipt of 75 cents. Money refunded if not satisfactory. **Elwood Tatum, West Branch, Iowa**

Direct Trade Wanted with Fruit-Growers



Every M. & G. blade is handforged from razor steel, file tested, warranted. This cut is exact size of 75 cent strong knife. We will send you one for 48c; 5 for $2, postpaid. Best 7-inch shears, 60c. This Knife and Shears, $1.00. Pruning, 75c; budding, 35c; grafting 25c. Send for 80-page free list and "How to Use a Razor."

Maher & Grosh Co.
97 A Street, Toledo, Ohio.

Maj. Holsinger's Department

The April meeting of the Missouri Valley Horticultural Society was, as usual, held in the club rooms of the Coates Hotel. The number assembled was not large. Vice-president W. G. Gano called the meeting to order. Secretary Mrs. Harriet Chandler read the minutes. The first paper was by Asa Chandler, on "Profits in Horticulture as Compared with Agriculture or Stock Raising." Mr. Chandler had engaged in farming and found it a rocky road, having lost heavily in stock, having the diseases incident in hog cholera, with the foot and mouth diseases in sheep, the black-leg, lumpy jaw and kindred pests in cattle. The packers, too, having the fixing of prices, reduced the profits to a minor quantity. The frost, absence of water, or too much water, with cyclones, hail and frost, made farming in the West in years past a very unsatisfactory business.

While there are some drawbacks in fruit growing, yet not so many as have been encountered by ordinary farming. True we have to encounter frosts, with low temperature in winter, hot and dry climates, with a multitude of insect enemies preying on our fruits, yet still the balance of the ledger is with the fruit-grower.

Mr. Chandler was quite severe on the dog. "I would levy a tax of ten dollars on every dog."

Mr. Cellar: "I think $10 too much of a discrimination on the dog. I think a good dog a necessity; a bad dog is a nuisance."

Mr. Gano then read his paper on "Difference in Handling Fruits Now and Thirty Years Ago."

This paper called up many reminiscences of the past thirty years. Thirty years ago fruit-growing was like Kansas City—in its infancy. In 1872 I took charge of the Park orchard late in the season, after the apples had been badly frosted. I think I put away 500 bushels of Ralls Janette. These apples had no market value until spring, when I bought the whole lot at 10 cents per bushel. At that day there were only two commission men in Kansas City and they handled such commodities as hides, poultry, etc. There were no stores in the city that handled fruit then, except in small quantities and few did that. So as spring opened, I had to haul my apples to Kansas City and huckster them from door to door.

Apples then were kept in ordinary cellars. There were no cold storage and no adequate fruit package such as barrels and fruit baskets. Any fruit shipped was shipped in bulk. With small fruit it was still worse, as the soft fruit was handled in trays and had to be measured in quart measures, using a paddle to measure the fruit. This was also true of the cherry, which in those days were picked without stems. As the Leslie box came in use and as the cherry, being soft and becoming wet, would soon spoil, so they had to be picked with the stems. This was to the consumer very unsatisfactory, and the producer was maligned as a "cheat and a fraud." With the peach our first package was the one-third bushel wooden bucket. These seemed satisfactory at first, but were supplanted by one-third bushel boxes. In turn these gave way to the four and six basket crate and a multitude of basket forms. Then we have not only refrigerators, but cars with refrigeration. In picking apples, instead of piling in the orchard "to sweat" they go immediately into boxes or barrels, and the same day are in cold storage. In this way the life of the apple is prolonged indefinitely and thereby such apples as Jonathan, Grimes' Golden, etc., that were known as fall apples, are carried into the following summer with all their freshness and delicious flavor.

The commission firms have increased until there are possibly 100 of them, all eager to handle the product of the orchard and farms. Every grocery, too, is engaged in the sale of fruits and vegetables. The railroads have developed an activity in the shipment of fruits.

To us of the past, who have been able to see the evolution in the handling of fruits by our railroads, it is ago was handled the first package of strawberries by an express company, that was carried from Cobden to Chicago, Ill., by our friend B. F. Smith of Lawrence, Kan., who is still hale and hearty. Now there are thousands of car loads of this fruit yearly carried into this as well as the Chicago mar- truly wonderful. About forty years ket, not alone by the express companies, but by and refrigerator cars. This will apply to other small fruits. How much of our present prosperity and happiness comes to us in the producing of and consuming of such quantities of fruits I will not attempt to conjecture. I question if any other line can show a greater development than can the wonderful evolution of fruit growing during the past thirty years.

Mr. Wilson said: "We have not yet arrived at perfection in fruit packages, nor in the handling of our fruits. We will see still greater development along these lines."

Mr. Goodman gave some useful hints on the box as a package possessing merit over the barrel as an apple package. The cost of the box was 10 cents while the barrel cost 40 cents, or the expense was 10 cents greater for a 3-bushel barrel than three bushel boxes. Then the fruit which is packed in the box will sell for 10 to 25 cents more per bushel than the barrel "The chief difficulty is in the proper material for boxes. We used gum, but it was not satisfactory; it split badly."

On "Present Fruit Conditions," Mr. Cellar said that Ben Davis was showing up badly. That many of their trees showed no bloom, while on others one side, or perchance, one limb had bloom.

As to peaches, there was only one opinion among the members that the peach had been hit very hard and that only a tree here and there showed up well.

We noticed recently some six or eight miles south of Kansas City, on a high elevation, an occasional tree quite full of bloom. Whether on account of elevation or variety, we did not have the opportunity to determine.

Plums, pears and apricots were quite satisfactory as to bloom and prospects were never better for crop than the present.

The only fruit on exhibition was some magnificent Black Bens which for size and beauty were unexcelled by any apples we have ever seen.

This closes our indoor meetings for this season. The society was truly fortunate in having such a delightful place in which to hold our meetings. The society indeed feels grateful to the managment of this great hotel for their kindness and generosity. May their shadow never grow less.

Major Holsinger: I always enjoy your page in The Fruit-Grower, and feel greatly benefited from time to time by your experiences. Your article o nbees sounds nice and easy, and as I am an amateur in bee culture and have an empty hive I want filled, and lots of trees, will you kindly tell me how to get the bees down? That seems to be the most important thing after having secured the bees. Also about how high to put the hive and how to secure it. You are all right on Kieffer pears; they are all right if properly ripened. Hope to find a reply in next Fruit-Grower. Am very respectfully, Mrs. Victoria Boyle.

It is indeed pleasant to be appreciated. Thanks. As to getting the bees down, that is easy. When the bees are all in I go up and close the openings and carry down on the ladder or let down with a rope. As to the height to place the hives, that is immaterial. I usually look for a forked tree where a perch is most easily made. I nail two slats on which I make a platform; on this set the box for the bees. They will find it whether four feet or a hundred from the ground. It is my custom to allow the bees to remain on their perch until cold weather or late fall. Care should be taken to anchor the hives to the tree, otherwise you may find them blown down. I learned this by my own experience, to my regret. FRANK HOLSINGER.

IRRIGON
OREGON

IRRIGON is one of the newer irrigated sections of the Northwest.

IRRIGON is 179 miles east of Portland, Oregon, 160 miles west of Baker City, Oregon, and 220 miles southwest of Spokane, Wash.

IRRIGON is situated on the Columbia and Umatilla rivers, and on the main line of the O. R. & N. (the through line of the U. P.).

IRRIGON is but little over one year old, but has a population of over 500, good school building, church, stores, city waterworks, etc., etc., with over 100 pupils in daily attendance at one of the best schools in Oregon.

IRRIGON has more days of sunshine than any other point in the Northwest.

IRRIGON'S soil is ideal for fruit, vine and vegetable.

IRRIGON has the best market and shipping facilities of any town in Oregon, Washington or Idaho.

IRRIGON is able to ship strawberries, potatoes, melons, peaches and cherries fully two weeks ahead of any other section in the northwest.

IRRIGON is the center of the irrigated lands of the Oregon Land & Water Company, embracing about 40,000 acres, and has one of the best irrigating systems in the West.

IRRIGON'S water supply comes from the Umatilla river, the annual discharge of which equals the flow of the Ogden and Weber (Utah) rivers combined.

IRRIGON offers better inducements to the homeseeker, who wishes to go into intensive farming, than any other place in the country.

IRRIGON lands may be secured in 5, 10 or 20-acre tracts at moderate prices, and on five years' time, one-fifth down, balance in four equal payments, at 6% interest. A perpetual water right goes with all land, the annual maintenance fee being $1.50 per acre. Write for our advertising matter, including a booklet giving the names of over 300 satisfied purchasers.

The Irrigon Irrigator the best Weekly Irrigation Journal published in the U. S.; $1.50 per year; 10 weeks' trial, 25 cents. The Irrigator tells from week to week all about the wonderful progress being made at irrigon. Address THE IRRIGATOR, Irrigon, Oregon. Sample copy free if you mention Western Fruit-Grower.

Oregon Land & Water Company
F. B. HOLBROOK, SUPERINTENDENT
Irrigon, Oregon

Absolutely Safe & Reliable— Ask your friends

Caldwell Tanks & Towers

NO POINT IS TOO REMOTE

for florists and gardeners are so built as to be shipped at the minimum freight charge. After arrival, any intelligent mechanic can erect one from the plans and directions furnished.

W. E. CALDWELL COMPANY, LOUISVILLE, KENTUCKY.

JOHANNA PEACH

HARDIEST SEEDLING

After 32 degrees Below Zero, Feb. 13th and 5 below freezing while in bloom, and still a good percentage of fruit. This is the Peach for you to plant. A 2-cent stamp will bring you a colored plate and full description. Orders booked now. Supply limited. BUDS FOR SALE after July 1st of it, and all best kinds of fruits, from Bearing Trees.

SALESMEN WANTED—To sell this Hardy Peach and other Choice Stock, that can be had only from

WILL S. HALL, Proprietor. **Sunny Slope Nursery, Hannibal, Missouri**

FREE—*The* APPLE SPECIALIST

We want to extend our paper into new fields to new readers and subscribers. Therefore to all who will send the NAMES OF 25 APPLE GROWERS, we will send ONE YEAR FREE, the only paper devoted exclusively to the apple industry. How to produce more and better fruit each year and then get the best prices in the best markets, is its mission. It is an orchardist and commercial paper disseminating only useful information, and nothing overlooked or left out pertaining to the apple cause in any way, shape or form.

Mention The Fruit-Grower and send 25 names of Apple Growers to

THE APPLE SPECIALIST :: :: QUINCY, ILLINOIS

A Good Investment.

There is money to be made by any intelligent farmer in a portable Saw Mill. It assures good wages for horse and men during the "off season" when otherwise the time would have to be devoted to unprofitable "odd jobs."

The best mill for this purpose, is, we believe, the one manufactured by the De Loach Mill Mfg. Co., of Atlanta, Ga. It has few parts, is easy to understand and to operate, and is sold at an attractive price. They will be glad to send their catalogue to any one who will mention this paper. It's worth having.

WANT A GOOD KNIFE?

Here is what customers of Maher & Grosh, 97 A Street, Toledo, Ohio, says of their knives: "I purchased one of your knives about one year ago and has been one of the best knives I have ever used"—O. A. Shirk, Lansing, Mich., Box 385.

Seed Potatoes

Plant **Northern Michigan Grown Stock.** Wonderfully productive; yielded 560 bu. acre last year. Early varieties: Michigan, Ohio, Six Week, 60c bu. Late varieties: Beauty of Hebron, Carman No. 3, Superior, Uncle Sam, 50c bu. 100 bu. lots Carman No. 3 or Uncle Sam, $40.00.

H. BLEMHUBER & SON, Specialists Marquette, Mich.

WANTED

One or more parties to go in on a commercial peach orchard. Climate and location ideal; land cheap; shipping facilities good. Address G. A. Lavender, Box 397, Mena, Ark.

Our Specialty **BOXES** FOR PACKING Green or Dried **FRUITS** Our Specialty

If interested, write us for prices. CALIFORNIA PINE BOX & LUMBER CO., Rialto Bldg., San Francisco, Cal.

$52.50
To You Direct is all we ask for
Our Rubber Tired Split Hickory Hummer
2-year guarantee. Sold on 30 Days Trial. Guaranteed solid rubber tires cut out jar, joits and rattling. Is a Special Low Price. 192-page Free Catalogue tells all. Buggies $35 and up, all Split Hickory. Write for it.
The Ohio Carriage Mfg. Co. (H. C. Phelps Station 46) Cincinnati Ohio
$52.50

Have You Seen the New
Garden Magazine
Not only the most successful and beautiful, but it is also the most readable and helpful periodical on practical gardening ever published in America.
Send ten cents for a sample, or twenty-five cents for a three months' subscription.
Doubleday, Page & Company
133 East 16th Street,
New York City.

Strawberry Plants
We have for Fall and Spring an extra fine lot of young, healthy plants, true to name; other plants and trees. Send for Free Catalogue.
John Lightfoot, Sherman Heights, Tenn.
R. F. D. No. 2.

To those expecting to attend meeting of
American Association of Nurserymen
at West Baden Springs, Ind., in June
THE
B. & O. S-W.
wish to present the following daily [illegible] train schedule:
Lv. St. Louis. Arrive Springs.
8:54 am.....5:55 pm.
2:05 am...(except Sunday)...8:47 am.
9:29 pm.....6:35 am.
Sleeper open at 10:00 p. m. for those desiring to take 2:05 a. m. train.
West Baden Springs affords the visitor many attractions. The hotels are first-class, and we will be pleased to render the delegates and their friends every attention.
For particulars, rates, etc., address
A. C. Goodrich, Trav. Pass. Agt., Kansas City, Mo., or
F. D. Gildersleeve, Asst. Gen'l Pass. Agt., St. Louis, Mo.

MAY and JUNE EXCURSION TO The SOUTH
There will be cheap homeseekers' and settlers' tickets on sale to the South in the territory of the Southern Railway and Mobile & Ohio in May and June, and in other months this year. The May and June excursions will give you full opportunity to investigate the South during the gathering of early potatoes, and many vegetable crops, of early peaches and other fruits, of grasses and grains, and will show the homeseeker what southern farmers, and especially what northern settlers in that section are doing. Fruit and truck raisers make $50 to $500 an acre. Lands which enable them to do it can be had at from $3 to $15 an acre. Go down and see if this is not true. Excursion dates are May 2 and 16 and June 6 and 20. Information about southern farm locations furnished by
M. V. RICHARDS,
Land and Industrial Agent,
Washington, D. C.
Chas. S. Chase, Agent,
622 Chemical Bldg., St. Louis, Mo.
M. A. Hays, Agent,
225 Dearborn St., Chicago, Ill.

Metal Shingles. Fireproof. Best for house or barn. Easily laid. Prices catalog and testimonials free. MONTROSS CO., Camden, N. J.

Virginia Homes
You learn all about Va. lands, soil, water, climate, resources, products, fruits, berries, mode of cultivation, prices, etc., by reading the VIRGINIA FARMER. Send 10c for 3 months' subscription to
Box A54. FARMER CO, Emporia, Va.

Gardening Department

Plant Cowpeas Now.

I have been talking all year about cowpeas, and now is the time to put my talk into practice. May and June are the months to put them in, and if you let the time pass without putting in at least a trial patch of them, don't say afterward that I didn't tell you in time. It is my firm belief that they are the most valuable catch crop that can be put in, and that northern farmers do not half realize what a good thing they are neglecting.

Remember that the cowpea is not a pea at all, but a bean, and must stand lots of hot weather to do well. The hotter the better, and it will stand lots of drouth, too. They should not be planted till after corn planting is over. Mine last year went in the 20th of May, and they made rapid growth from them on without a stop. I drilled them in rows two feet apart and used about a bushel of seed to the acre. Rows three feet apart would have done just as well, for the vines grew fully ten feet long, and made a tangled mass that a rabbit couldn't get through. I had several varieties, but the New Era seemed to be the best and earliest, with the Whippoorwill next. All ripened seed, and I believe there would have been fifty bushels of seed to the acre if I had threshed it, but I pulled vines and all and fed that way. They made hay equal to the best clover and about twice as much of it. The only trouble was to cut it. You never could get a mower through that mass of vines, and it had to be done by hand. I have since learned that by putting the rows a little wider apart and mixing in a little cane or Kaffir corn seed, the vines will be held up off the ground so that a mower will handle them. This year I will mix in about two quarts of Kaffir corn to a bushel of peas, and the mixture will feed well together and will be easier to harvest.

Cowpeas enrich the soil the same as clover does, and a crop of them will be equal to a good heavy dressing of manure. By planting a row of cowpeas between the rows of corn when you lay it by, you can put back as much into the soil as the corn takes out, and have a mass of fall feed in the corn besides. If you have little pigs or sheep to run in the corn in the fall, they will know just what to do with the peas.

For poultry there is nothing better. The vines can be pulled with the pods left on and given to the hens in the winter time. They will enjoy scratching them over to get the peas.

The Value of Soja Beans.

Soja beans are suited to a still wider range of territory than the cowpeas and can be grown anywhere in the United States. They came originally from China, and are grown for table beans there, being as universally used as white beans are here. The flavor is strong, but the Chinaman seems to enjoy it.

The bush is upright, from one to two feet high, very leafy and rank growing. The beans range in size from that of the white navy bean to almost the size of a marrow bean. Most of the varieties are yellow in color, but some are green, and one sort is black. The pods set very thickly and have three or four beans each. The seed can be planted any time after corn planting and a crop can be ripened in this latiture sown as late as the first of July. In fact I grew a good crop on an old strawberry bed plowed up after done fruiting. The seed can be broadcasted or drilled and cultivated. I have grown them both ways and prefer to drill, but the other way is all right. The vines can be fed green or made into hay, and are equal to clover in feeding value. All kinds of stock eat them readily. In my opinion it would pay to grow them as a regular crop, but I have always used them as a catch crop in the garden, in little patches that were vacant late in the season. For utilizing an old strawberry bed after fruiting there is nothing better. They are worth all they cost to plow under for green manuring, for it will be just like a clover sod. Think what it would be to have a clover sod every year. By putting in soja beans or cowpeas as catch crop you can pretty near do it.

Sowing Clover in Corn.

In the eastern states a great deal of the clover is seeded in corn at the last cultivation, sowing it behind the cultivators and covering with a scratcher. I don't see why we cannot do it here, and I propose to try it this summer. I have a 40 acres in corn that has been in clover for a great many years. I expect to get 100 bushels of corn to the acre this year on it, and if I can get a clover sod to plow under again I can get just as good a crop again next year. When we cultivate the last time, say in the middle of June, I will sow broadcast about six quarts of clover to the acre, and cover it with a harrow tooth cultivator. If it fails I will be out very little but the seed, and if it wins out, as I believe it will, I will have a good crop of clover to plow under next spring. It is worth trying anyway. The corn may smother it out, but I notice that the weeds always come up and grow in the corn in the fall, and where weeds will grow, clover will surely grow.

Seeding Waste Land.

I have a little corner of land subject to overflow that has always been an eyesore, grown up to weeds and thoroughly useless. This spring I seeded it to brome grass and alsike. It looks fine now, and I believe I will get the best of the weeds. Both the brome grass and the alsike are great stayers and I have faith that they will convert that waste land into the best little corner of grass on the place. I know that brome grass is generally recommended as a grass for dry land, but I have had patches of it on low land for two years now and it is as fine a grass for that kind of land as I ever saw. It is my private opinion that it is a better grass than timothy anywhere you put it. It is especially valuable for the gardener, as it makes such rapid growth and catches so easily. If sown early it will make a hay crop the first year, and if sown as a catch crop in the summer it will come on very early in the spring for either pasture or hay.

Sow Onion Seed for Sets Now.

Now is the time to put in onion seed for sets. Drill it in rows 12 or 14 inches apart and use about 30 to 40 pounds per acre. That is very thick, but you want it thick, so that the onions will grow small and ripen down well. Tend them just like any onions, and they will be ready to pull in August or September. They generally bring much more a bushel than the large onions, and cost no more to grow except the extra cost of the seed. For varieties, I would advise White Silverskin (Portugal), Australian Brown, Extra Early Red and Yellow Danvers. Any variety can be used, but these are the best, as they are good keepers and are sure to ripen down well.

Plant Seed for Late Cabbage Now.

From now to the first of June is the time to plant late cabbage seed in the hills where it is to stand. I generally plant about the last of May, drilling the seed in in rows 3½ feet apart. When the plants are about two or three weeks old I thin them out to about two feet apart in the row and let them stand that way. It is much better than transplanting the plants, as you are surer to get a stand. The plants never being moved, grow better, too, and seem to make larger heads. Tomatoes for main crop can be handled the same way and make the largest, finest tomatoes of any.

A Reliable Institution.

In this issue of The Fruit-Grower appears the advertisement of the Missouri Valley Seed Store, St. Joseph, Mo. This firm is not to be confused with the Missouri Valley Seed Co., which last year suffered financial reverses. The present company is composed entirely of new men, and is financially responsible and reliable in every way. The company is particularly anxious to keep in touch with the fruit farmers, and to this end has a complete line of spray pumps, insecticides, etc. Rush orders for paris green, copper sulphate, sulphur, etc., can be filled and shipped same day, and the company also carries a stock of Disparene at all times. This will be appreciated by those who use this greatest of insecticides, for it saves sending to Boston for the Disparene.

The horticultural department of the Missouri Valley Seed Store is in charge of Mr. J. B. Good, who is a member of the St. Joseph and Platte Purchase Horticultural Societies, and who keeps in close touch with the fruit-growers generally. The company solicits the patronage of Fruit-Grower readers.

Write "Osgood," Binghamton, N.Y., about their "New Idea" ready to weigh "Pitless Scale."

Names of Farmers Wanted
The Farmers' Record wants names and addresses of farmers anywhere in the U. S. They want to get them interested in their big farm magazine, which now has a large circulation and is acknowledged to be the best farm paper in the West. The subscription price is 50 cents per year, but if any of our readers will send them five farmers' names and addresses and ten cents in stamps or silver, they will enter you as a subscriber fully paid for a whole year and also send a copy of the "Horse and Cattle Doctor," a valuable book telling how to treat sick stock. Address
FARMERS' RECORD
Montgomery Bldg., MILWAUKEE, WIS.

Write F. C. Boyd a postal for prices on
RHODODENDRONS
and a general line of Forest Tree Seeds and Seedlings.
F. C. BOYD, GAGE, TENNESSEE.

THE FARMER'S JOY
Sickle and Tool Grinder, with Emery Dresser and Wrench. $3.45
Sharpens Mower Knives, all Tools, Plow Points, Shears, etc. Guaranteed satisfactory or money back. With all Steel Foot Power Frame, and Polishing, Disc Grinding and Saw Gumming Attachments, $3.95 extra.
Western Implement Co.
Dept. K, Port Washington, Wis.

Dixon's Superior Strawberry Plants
have made a way for themselves. Our trade this season has far exceeded that of any previous year. Our plants have been as good as the best, and a long list of customers are satisfied. We are growing a larger acreage of plants than ever. Besides strawberry plants we will grow 2,000,000 raspberry and blackberry plants. Do not forget that our catalog deals in facts only and appeals to your common sense. Our new catalog will be ready to mail January 1, 1906. Address
F. W. Dixon, Holton, Kan.

Reliable Commission Men
The firms whose addresses appear below are all members of the National League of Commission Merchants, which fact insures their reliability. They are in the business to stay, and will appreciate and satisfactorily care for business of Fruit-Grower readers.
COYNE BROS.,
160 S. Water Street, Chicago, Ill.
Fruits, Butter, Eggs, Poultry.
SEESSEL & ASHNER,
Memphis, Tenn.
Produce and Fruits.

MAIN PIPE LINE
To Navigable Waters of the Missouri

The Great Kansas Independent Refinery Will Not Be Robbed By Criminal Rebates, But Will Occupy Independent Ground By Piping to a Great Waterway and Owning Steamboats and Steel Barges.

STOCK NOW SELLING FOR $80 PER 1,000 SHARES CERTAIN TO ADVANCE TO $750 PER 1,000 SHARES IN NEXT SIX MONTHS

THIS great enterprise will immediately install Refinery No. 2 on the banks of navigable water close to Kansas City. Will own steamboats and barges and what oil does not market to the millions of inhabitants in the two Kansas Citys, Omaha, Council Bluffs, St. Joseph, Leavenworth and other large cities close at hand, they will ship by water to the big cities from St. Paul to New Orleans and from St. Louis to Pittsburg.

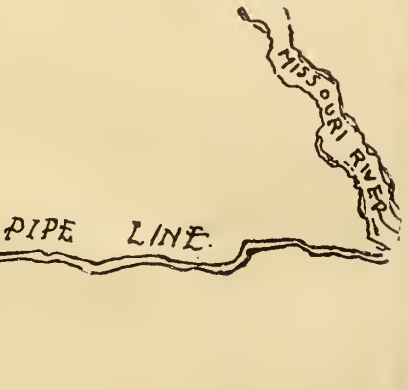
WHEN you join our band, now nearly two thousand strong, you practically secure an interest in two great refineries, over three hundred miles of pipe lines, thousands of barrels of tankage, dozens of tank cars, over twelve thousand acres of oil lands and hundreds of producing wells, and steamboats and oil barges to carry the refined oil to the markets of the world.

REMITTANCES are coming in on every mail from California to North Carolina, from Mexico to Ontario, and from Florida to New York. Popular approval is backing the Uncle Sam Company, men are working for it, papers are talking for it and, in fact, it is growing to a mountain of strength. It is the only formidable foe to Standard Oil oppression west of the Alleghanies. Money invested is not only sure to increase ten-fold in solid values, but at the same time you will strike a blow for justice in the oil fields.

This picture is one of the views secured of the refinery grounds at Cherryvale, April 19. Today there are over ninety men working on the refinery proper and on the first big 40,000 barrel steel storage tank which arrived this week. The Uncle Sam Company will build large tankage to store the oil that is now in abundance in the oil fields. Some day it will be more valuable. Now is the time to buy and hold it. The Cherryville plant will be ready to ship refined oil in less than seventy days, and work will commence in less than ten days on plant No. 2, which will be built on the banks of navigable waters close to Kansas City. When you buy stock in the Uncle Sam Company you secure stock that is growing in value while you sleep, and in less than six months will be worth at least 75 cents per share, or nearly ten times the present price. Men are coming into Cherryville on every train, and people drive from miles around to witness the work on the great refinery. Work will be pushed steadily forward with a vim. If you have money to invest it will pay you to consider well before you delay many hours, for the Uncle Sam stock is selling and selling fast, because business men realize it can go at par and that the company is pursuing safe methods and is on a practicable basis. If you do not have money enough to pay all cash for stock read over the installment offer made in this announcement. $800 will now buy ten thousand shares.

Refinery No. 2 on the Banks of Navigable Waters.

The most important move of a refinery company is to locate refineries and build pipe lines so that it can market oil without being held up by criminal rebates which are so hard to prove. The Uncle Sam Company is guarding against just such underhanded knock-outs as these, and work will soon be under headway to lay the pipe line to navigable water. The plant will be located some time next week at some point between Holiday, Kans., and Kansas City. Our attorney is now negotiating for the right of way for the pipe line, and as soon as the first thirty miles are secured the company will at once commence laying pipe. The man who thinks the Uncle Sam Company will not build Refinery No. 2 and connect it with a main pipe line over 150 miles long will spite his own pocketbook. The Uncle Sam Company does things. Some sixty days ago it advertised it would build a refinery at Cherryvale. Well, come down and you can see for yourself that it is fast completing what it started. There are thousands upon thousands of dollars back of the Uncle Sam Company, and few people really realize its giant strength. And it is growing stronger every hour. If you want to help strike a blow for justice in the oil fields and at the same time tenfold your investment, send check or draft today for stock, before it advances to 15 cents per share. Things are moving down here, the Uncle Sam Company is the company of the hour, and the stock you can buy now will not be offered long at 8 cents per share.



Secures Four Thousand Additional Acres of Rich Oil and Gas Lands.

Within the last 24 hours four thousand acres of the choicest oil and gas properties in the Cherryvale and the Coffeyville oil fields have passed into the control of the Uncle Sam. These lands give the Uncle Sam control of nearly seven thousand acres and 74 producing wells. Two drilling rigs are now steadily at work. The Uncle Sam

When you invest your money with this company you not only get on the right side of the oil troubles, but you are in line to realize big profits. Standard Oil stock one time sold for less than one-fifteenth of the present value or selling price. Take a lesson from the great advances on that stock and secure a good-sized block of stock in the Uncle Sam Company before it goes to ten times the present price.

or controlled by the company, and they have room for over 3,000 more wells. Money is pouring in at the above rate per day, and will increase. We can prove our statements as to remittances by our bank books. You will never be able to buy the stock cheaper than 8 cents, and any man knows, as the work nears completion the value increases and the price must advance. Better secure some of this stock while you can and reap a great reward by so

millers and the manufacturers of Wichita, Topeka and Winfield pay very high prices for coal, even when they buy it in several car lots. The Uncle Sam Company from its Cherryvale plant, will establish large stations for both refined and fuel oil over the South and Southwest and especially in Winfield and Wichita. The company already has stockholders scattered all over the southern part of Kansas and the territories. These men, as well as the citizens of Kansas, will be loyal to the oil from the great Kansas independent refinery. There will be stockholders enough to protect the market, and there is an

ever completed, and he is a conservative, reliable driller, and knows what he is talking about."

Every Banker, Every Leading Merchant, Doctor, and in Fact All Cherryvale, Is Backing the Uncle Sam Company With Their Cash.

When you buy stock in this great refinery company you pay no more for it than hundreds of other investors. In Cherryvale almost every leading man in the city owns stock in the company and is working for its grand success. They paid money for the stock, too. It was not given to them

will be burning in your lamp or under your furnaces. By owning its own oil wells and with a pipe line and refinery on the banks of the navigable water of the great Mississippi system every man must admit that it is following along the lines of safe business methods and that profitable results are certain under these conditions. When you buy the stock you not only further the ends of justice in the oil fields, but invest where the investment is sure to pay tenfold. Can you afford to turn down an investment like this? If you delay long the stock will cost you more money, as there are nearly two thousand men directly interested in the final grand success of this great company and they are working with their friends and also doubling up their holdings. The very minute the pipeline reaches the refinery near Kansas City this stock will be in demand at close to par or $1 per share. No investment in the world offers what this company offers, and there are men enough back of the company to guarantee a square deal, and that is all that is necessary to make money in the refining of oil for the profits are great or the Standard oppressors could not divide millions yearly in dividends as in their history.

Standard Oil Stock Sold One Time for $40 Per Share. Now It Is Selling for $660 Per Share and Is Paying Enormous Dividends.

The Uncle Sam Company is the only refinery company in the West today that offers protection to its stockholders by following certain methods that will bring great returns. The Standard Oil oppressors are like a Comanche Indian. They will shoot a fellow to pieces after he is down and cannot help himself, but the enterprise that reaches out and secures a leverage in the markets of the world it leaves alone, for like any other coward, it does not care to criminally fight a competitor, unless it knows before it goes after its scalp that it can secure it. How can any organized band of plunderers do anything to hinder the onward march to grand success of the great Kansas independent refiners, when, within a radius of one hundred miles, it will have a friendly market for more oil than it can refine? On the other hand it can, through its own steamboats, ship by water at very small expense refined oil to any point on the Mississippi or its tributary river fronts. Remember the men who are behind the guns in the Uncle Sam Company are Kansans and the kind of men who have grown up with gophers and grasshoppers and have met hardships before, and they will come pretty near taking care of themselves, even though they are up against a crafty, underhanded set. vestors rushed in their money for stock with such confidence of success. Never has a record been maintained in the Central West where the subscriptions for stock were equal to the demand for the Uncle Sam stock.

For the benefit of those who may think they will have all summer to join this great company, we will say that the net sales of stock for Thursday, April 20, were $5,400; paid in cash, $3,166. On Friday, net sales equal $5,970; cash paid in, $3,164.40. Now the company is just thoroughly advertised. Men are working for it all over the United States. The sales on Thursday and Friday are not one-half of what they will be during some of the days in the next month. The man who thinks the Unce Sam Company will not build the pipe line to the water front, and another refinery, simply shows that he is off in the upper story. People have confidence in the Uncle Sam Company. Money talks. Work will be crowded ahead with vim. Stock that is now selling for 8 cents per share will be in greater demand at 15 cents per share in six weeks than it is now at 8 cents. When you line up with this company you join a winner and you also join a band of determined men who are working for a square deal in the oil fields, and what is more, they are going to get it. The remittances mentioned did not come from one or two men, they represent sales on stock from 500 to 5,000 shares. These men will all sell stock to their friends, and they to their friends, and, like the endless chain letter, the Uncle Sam Company will grow until the stock is all placed and the great work is accomplished. Better join our band today, before it is too late, for if you delay others will secure what you want. $400 will buy 5,000 $1 shares.

Financial Condition of the Company.

Authorized capitalization, $10,000,000. Par value of the stock is $1 per share. Every share of stock draws the same amount of dividends as any other share. The company has in cash in its treasury and in gilt-edged installments, payments and lands, oil wells, machinery, buildings and other assets, on a conservative basis, $260,000, free of DEBT. There is in the treasury at this writing 6,775,000 shares which will be sold at 8 cents per share or higher. The chances are 10 to 1 that the last stock will bring close to 50 cents per share; at any rate, you can depend on close to $1,500,000 back of this company in cash before the treasury stock is all sold. Now just figure a moment for yourself. The company has no dead-head stock. Every share sold has been cash to the treasury. One refinery is as good as built. Nearly 7,000 acres of oil lands, with close to 100 oilers, are now owned

Company Would Be Justified in Advancing the Stock to 20 Cents Per Share Right Now.

There are deals enough pending in the United States right now to sell all the balance of the stock of this company twice over. The very minute the pipe line to Kansas City is even over half way completed the stock will sell readily at 50 cents per share. The assets back of this stock and the bright future ahead would justify the company now in advancing the stock to at least 20 cents per share. When you secure the stock at 8 cents you secure value received and then some.

When You Buy This Stock You Are Securing an Interest in Practically Two Great Refineries, Over 12,000 Acres of Oil Lands, 300 Miles of Pipe Lines, Thousands of Barrels of Storage and Tank Cars and Steamboats.

When you buy the stock of this company you really secure an interest in a great deal more than is represented now. Every day additional machinery is being secured. Today men and teams have worked all day unloading part of the first big steel tank. It's just a question of weeks until men will be laying the pipe line to Kansas City and every day additional oil lands are going into the control of the Uncle Sam. Another fact you must bear in mind when you figure on buying this stock is that this company is well advertised, and through the best and most influential advertising mediums in the United States. Millions of people will read about this company. The company has stockholders all over the Southern states, as well as away up in New England. Also California and in the Dominion of Canada. Every stockholder is vitally interested in aiding the company place the balance of the stock for the quicker it is sold the faster the work will move. Now is the time for you to place your shoulder to the wheel—right now, before the stock advances out of your reach. Remember that while you read this announcement the telegraph wires will be ticking their orders and that the mails will be loaded with letters ordering this stock. From one part of the United States to the other men will be at work, for the whole nation is interested in the welfare of Kansas in her fight against the Standard oppression and spoliation. The Uncle Sam Company offers a practical way for every man whose heart throbs for justice and a square deal, and who at the same time would like to place a few hundred dollars where the returns are certain to be large.

The Germans of Kansas are Falling in Line.

Through the assistance of some good friends of the Uncle Sam Company the Germans of Kansas are fast securing Uncle Sam stock. In fact there are enough Kansas Germans right now interested in the stock to control the German vote of Kansas. When a few Standard Oil henchmen try to sneak into the legislative halls of Kansas you will see the great advantage in the Uncle Sam Company having men back of the company in every voting precinct in the state. The present just law must be maintained on the statute books and other good ones passed, and it is just such a company as the Uncle Sam that will yield a power when Standard Oil crooks, in disguise, try to work their rabbit's foot on the people of Kansas. The Uncle Sam Company now has enough men interested so that it could put over one thousand men in Topeka in twenty-four hours if the interest of the company demanded it. This is another good reason why your money is safe in this company. Four or five capitalists could be downed by the Wall Street plunderers, but when you do up two or three thousand little fellows there will be something doing. No legislator will sell out his constituency if there are even twenty-five determined men at his home, in the Sunflower state, to hold him in line when they go at matters as they usually do and as the independent refinery stockholders will.

Drastic measures will be necessary to down Standard Oil boodle, but that is what the Kansans know they will have to overcome.

Cherryvale Refinery Will Supply the South and Southwest—Large Storage Stations Will Be Maintained at Winfield, Wichita and Topeka.

Three barrels of fuel oil are equal to one ton of coal, which cost the thrashers and farmers in Western Kansas over $5 per ton, while the big take into consideration that refinery No. 2, on the banks of the river, can reach the north and the northwest with steamboat connections with all the big cities of the Mississippi system. Don't that look like the Uncle Sam Company meant business and that it will be a factor for years to come in the oil fields? A few dollars invested now will continue to grow in value and pay your children dividends after you are gone. Just think this matter over seriously, and do it now. The company wants you with them; wants every man who desires to help himself and help this company secure grand success. Safe methods will be pursued at all times and if you buy stock now you get in at a price that will be more than doubled in the next sixty days. Now is the time to act.

We Can Not Write Many Personal Letters.

This week we have had from two to four men answering letters of inquiry. Tuesday, 110 inquiries came in. Now, we would like to write every man a personal letter, and we appreciate the words of encouragement meant, but our office force is working more than sixteen hours a day to get out the stock that is remitted for. After you read this advertisement we would advise you to mail check or draft without delay and also let your friends know of the great opportunity the Uncle Sam is offering. The stock may be advanced any day, and if you remit promptly you will secure yours at 8 cents, and if you wait to receive an answer to your inquiries you may be too late to secure stock at that price. The company is intelegraphic communication with over 200 men, and reaches over 1,600 investors every two or three days by special reports. The line-up of this company's organization is something that few people realize. It is strong and is growing stronger every day, hour and minute. Remember the day that the Uncle Sam pipe line reaches Kansas City the stock of this company is almost sure to be worth par, and at any rate, ten times the present price. The investment is safe. What more can any reasonable man expect?

ANOTHER GREAT OILER..

Our Farmers' Field a Nine Time Winner.

Since setting this advertisement, and just as the page was ready for press, Secretary Tucker sends the following. The Uncle Sam folks are surely in luck:

"Cherryvale, Kans., April 22.—Undoubtedly the largest oiler ever secured in Cherryvale field was drilled in and completed this afternoon on the Nick Veeder farm near the refinery.

"This is Uncle Sam Refinery Farmers' Well No. 76. The well starts off at 150 barrels the first twenty-four hours, is high-grade oil, has forty-seven feet rich pay oil sand and proves up over sixty additional sure locations in the Drum Creek holdings of the Uncle Sam Refinery Company, and increased the value of refinery proved oil properties at least 50 per cent. 'Pete,' the Pennsylvania driller, who has drilled in over thirty wells in the Cherryvale and other Kansas oil fields, says this well has the most pay oil sand of any producer he has

Maximum Freight Rate Law Passed In Kansas Is a Clincher in Favor of Both the Producer and Consumer of Oil. Other States Will Follow Soon.

It is no longer possible for railroads to go into combines in Kansas with the Standard oppressors and make the independent companies pay the oppressor's freight, as they have sandbagged people in other states and are still doing. In Kansas today there is a maximum freight rate on oil which although reasonable will be made still lower when the next legislature meets, if not in a special session before two more years roll around. This same law in time will be passed in Missouri, Nebraska and Oklahoma and other states, for this law enables the people to secure their refined oil at reasonable prices. Why should the taxpayers of Missouri, Oklahoma and Nebraska be held up by these Wall Street plunderers when it lies with'n their power to help themselves? However, the Uncle Sam Company is banking only on what it is sure of. It has the great domain of Kansas to distribute its refined oil and with a pipe line to the water front can reach millions of inhabitants along the river cities, even though the interests of the adjoining states are not protected by maximum freight rates. The Uncle Sam Company now has stockholders enough in the adjoining states to bring strong influence to bear in legislative halls. When you buy stock in this company you line up with a company that is strong enough to protect your interest.

Pumping Station on the Kansas City Pipe Line Will Be Near Garnett, Kansas.

Long before the pipe line is completed to Kansas City, and in fact, by the time it reaches the pumping station that will be located near Garnett, Kans., you will see investors rustling to secure this stock at even 30 cents per share. Why not get in on practically the ground floor now at 8 cents per share and secure the advantage of the great and increasing value that is sure to come?

Personnel of the Company.

James Ingersoll, president.
J. H. Ritchie, vice-president.
H. H. Tucker, Jr., secretary and treasurer.

The above men promoted and placed on a dividend-paying basis the great Publishers' Oil Company of Cherryvale. The great bulk of the stock of the Publishers' Company was sold from 8 to 12 cents per share. This stock steadily advanced until it reached 35 cents per share and was taken off the market, and you cannot buy out a single one of the above men today even at $1.25 per share.

NOW IS THE TIME TO BUY YOUR STOCK

For a few more days the Uncle Sam Company will sell Treasury Stock as follows:

500 Shares, ... $ 40.00	2,000 Shares, ... $160.00	5,000 Shares, ... $400.00
1,000 Shares, ... $ 80.00	2,500 Shares, ... $200.00	10,000 Shares, ... $800.00
1,500 Shares, ... $120.00		

The Stock is Non-Assessable, and the par value is $1.00 per Share.

The time to invest in a company is when that company is selling its ground floor stock. When you buy stock in the Uncle Sam Company at $80 per 1,000 shares, you pay no more than hundreds of other investors. The company is strong now, and is hourly growing stronger. By September 1st you will see this stock up close to the dollar mark. Why not help yourself, and also this company, by remitting today for at least 1,000 shares of stock?

INSTALLMENT OFFER GIVES EVERY MAN A CHANCE

The Uncle Sam Company would rather have ten men go together and take one thousand shares each than to have a few men take a large amount of the stock. The company wants men who have a vote and who will stand by the company when it has criminal discrimination to contend with. Better see your friends and raise a club and take ten, fifteen or twenty thousand shares right now. Subject to raise without notice the company will sell stock as follows on installments:

500 shares $5 cash, with 5 monthly payments of $8.	4,000 shares $40 cash, with 5 monthly payments of $64.
1,000 shares $10 cash, with 5 monthly payments of $16.	5,000 shares $50 cash, with 5 monthly payments of $80.
2,000 shares $20 cash, with 5 monthly payments of $32.	10,000 shares $100 cash, with 5 monthly payments of $160
3,000 shares $30 cash, with 5 monthly payments of $48.	20,000 shares $200 cash, with 5 monthly payments of $320.

HOW TO SEND MONEY.

Make your checks, drafts or money orders payable to The Uncle Sam Company or to H. H. Tucker, Jr., secretary. Write your name plainly, tell us how, or to whom you want the stock issued, and we will forward stock by return mail, and also send you weekly report thereafter, thus keeping you fully posted. Address

H. H. TUCKER, Jr., Secretary, Cherryvale, Kansas

Distance no obstacle. Drop us a postal card. We will send you a catalog on Low Down Wagons and Wood Wheels to fit any wagon and getting 'em. They can be bought by mail just as well as if you were here; and we take the risks and pay the freight on 'em. We will make you glad you ever heard of us.

Hillsdale Wheel Co.
HILLSDALE, MICH.

WE WANT YOU to Send Us Your

Illustrated Fruit Book

now and let us make you prices on your probable needs for next season's planting. Our Stock is true to name and free from disease.

We employ no agents, but it will pay you to make up a club order.

J. Bagby & Sons Co.
New Haben, Mo.

NURSERY STOCK

We can fill your wants in Strawberry, Raspberry and Blackberry Plants; Grapes, Currants, Gooseberries, Trees, etc., for Fall or Spring delivery.

Write us your wants and we will endeavor to please you.

Elmhurst Nursery
M. E. Chandler, Argentine, Kan.

Knox Nurseries

ONE YEAR CHERRY

We now have promise of another fine crop of One-Year Cherry for fall 1905. Those wishing to plant this fall will do well to get our prices. We can please the most critical with these trees.

We also have a fine lot of two-year Cherry, Peach, Pear and a general line or nursery stock. Do not fail to write us before you buy.

H. M. SIMPSON & SONS,
Vincennes, Indiana.

3 MONTHS FREE

If you are interested in any kind of an investment, Oil, Mining, Plantation, Industrial, Lands, Stocks, Bonds, Mortgages, etc., send us your name and address and we will send you The Investor's Review for three months free of charge. A journal of advice for investors. Gives latest and most reliable information concerning new enterprises. Knowledge is power. Great opportunities come and go. Great fakes also. Get posted before investing. Write today.

INVESTOR'S REVIEW, 1534 Gaff Bldg. CHICAGO, ILL.

Fruit Growers send 10 cents and 5 names of fruit growers for 6 months trial subscription to THE PEACH GROWER, Savannah, Ga. It is a practical paper for growers of all kinds of fruit, of peculiar interest to peach growers. Published in the greatest peach state in the world, it publishes much matter of interest to peach growers everywhere.

Address The Peach Grower, Savannah, Ga.

OKLAHOMA

Fruit Growers' Paradise

The Oklahoma Farm Journal tells about it twice a month. Most practical farm publication in Southwest. 50c. gets it one year. Send for sample copy.

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Questions and Answers

In answer to the query of W. O. M., Lawrenceburg, Tenn., in April number, I think his apple that is "10 to 14 days earlier than Early Harvest and of good size," must be a seedling, unnamed, for the White Juneating is the earliest variety I know of, and it is only three or four days earlier than the Early Harvest and is small in size. The pear he mentions is remarkably large for one of the Jap. type. I notice he says nothing about quality. While some of this type may be useful for pickling and preserving, it is doubtful if any will be found that are fit to eat out of hand, unless there is an intermixture of other "blood." The distance (16 feet) is too small, for the vigorous specimens of this type that I have allowed to fruit will need at least 30 feet if blight does not overtake the tree. Some of these Jap. pears are very productive and occasionally one seems to resist blight in a great degree, but as a dessert fruit—oh no!—B. Buckman, Illinois.

Protecting Trees from Mice.—In the April number a Maine subscriber asks how to protect trees from injury by mice. Tell him to write to Will B. Otwell, Carlinville, Ill., and get his tree paint, and he will have no more trouble with rabhits, mice or borers. I have used this paint for five or six years, and can say it will do all Mr. Otwell claims for it. I would not he without it for twice the price of it. The April number of The Fruit-Grower was worth $1.—C. A. Hasenyager, Bern, Kan.

From Another Subscriber.—In answer to the query of H. W. L., Brooks, Maine, in April number, I would say that I lost a number of trees from mice a year ago last winter, and I determined to try Warnock's Tree Paint last winter, and did so, with the result that these peach trees are ready to put forth this spring at the proper time. They are all peach trees and are apparently uninjured by the tree paint. The mice gnawed apple trees in a neighboring field and one unpainted tree among the peach trees, but not one painted tree was touched. Mr. Warnock claims the paint remains effective for three years.—A. F. Tenney, Massachusetts

Good's Whaleoil Soap.—In the April number H. G., Bossardsville, Pa., asked about the whaleoil soap manufactured by James Good of Philadelphia. I have used Mr. Good's Caustic Potash Whaleoil Soap No. 3 with very fair results. It will keep the San Jose scale in check, but does not effectually squelch them as does the abominable lime-sulphur-salt wash, nor has it been found so effective by our Massachusetts Experiment Station as Bowker's Tree Soap, made by the Bowker Insecticide Co., of Boston. However, I rely solely on Good's soap to use for dipping scions for grafting, and the scale is not spreading.—A. F. Tenney, Massachusetts.

Wants to Know of Hardy Peaches.—I think the time is opportune for us to try to bring out some information concerning hardy peaches. How would it do to ask members of The Fruit-Grower Family to give their experience briefly. None of the budded peaches stood the cold of last winter, except Triumph and Alexander, and they are early and worth but little. No varieties have bloom except these two and Champion, but I think there are other varieties fully as hardy if we knew what they are. How about the Bokara peach; is it hardy and of good quality?—S. S. B., Gallatin, Mo.

Fruit-Grower readers who have anything to offer on this subject are invited to send their reports in as few words as possible. Let us find some varieties which are as hardy as the ones named, and are at the same time of good quality.

Flowers to Furnish Food for Bees.—J. K., Van Buren, Ark., wants to know the crops to plant or cultivate which will furnish a supply of food for bees, extending over as long a period as possible. He says he has heard of some sort of vine to run up a trellis, and wants to know what it is. Who can tell him?

O. W. B., Newton, Iowa.—How are plums propagated?

For the most part, they are propagated by budding, the work being done the same as peaches, during the late summer. The full process, together with process for grafting, etc., is fully described in Booklet No. 1 of our "Bro. Jonathan" Series.

E. S. M., Chelan, Wash.—Last spring I set a small apple orchard, and this spring some of the trees are dead. They were evidently killed by a white or light cream-colored worm, three-fourths of an inch long, with a tapering body and oig head. This worm ate its way into the tree at the surface of the ground. Some of the trees were entered, but were not dead, and I dug out the worm and plastered up the wound with fresh cow manure. How can I prevent these worms from entering the trees, and what is the best remedy after they get there? (2) English walnuts are proving a success here, and I want to start an orchard next year. Shall I plant the nuts this fall or next spring? Is there more than one variety of English walnuts?

Your trees are doubtless infested with the round-headed apple tree borer. This insect is illustrated and described in Booklet No. 2 of our "Brother Jonathan" series; price 25 cents. The thing to do now is to examine all the trees which are not dead, and dig out the borers with a sharp knife or pointed wire. No wash is recommended as absolutely sure to keep out all the borers, but Prof. Stedman recommends the following wash as one of the best he has used for this purpose. After applying the wash, however, it is still best to watch the trees, so that any borer which may have entered may be dug out. It should be remembered, too, that this wash will have no effect upon the borers which may be in the tree; it will only keep them away. The wash recommended by Prof. Stedman is made as follows: Dissolve as much common washing soda as possible in six gallons of water; then dissolve one gallon of ordinary soft soap in the above; slake a quantity of lime to a thick paste and add enough of this to the above mixture to make a thick whitewash, which will stay upon the tree an eighth of an inch or so in thickness. It is better to scrape off all the loose bark possible from the trunks and main limbs of the trees, and also remove the earth from the base and scrape the loose bark from this. Apply the wash liberally from the main limbs to the ground, covering all portions of the bark. The dirt can then be placed about the base of the tree as before. (2) It will doubtless be better to buy English walnut trees of known variety, as there are a number of varieties. California nurserymen should be able to furnish them, and advise as to their planting.

A. J., DeQueen, Ark.—I set 24 Benoni apple trees two years ago, and three of them died last year. Most of them have quite a number of warty knots on the bodies and some on the limbs, from the size of small shot to bird's eggs. What is the cause and remedy? I believe the knots are caused by woolly aphis. If so, would bisulphide of carbon destroy them?

Answer by W. L. Howard: The wart-like knots mentioned are no doubt the same that are often found on perfectly healthy apple trees. It is not known what causes these growths, but they seem to be perfectly harmless. It is possible for the galls ordinarily found on the roots to grow on the trunk or branches, but these do not seem to be of this character. I do not think they are caused by woolly aphis, but it is possible that this insect may infest the tree at these places if the bark is broken. If these insects are present they may be seen by the cottony appearance of the depression in the bark, in which case the best treatment would be kerosene emulsion.

G. C. G., Covington, Ky.—Will you kindly inform me through your paper how to procure and plant water maple seed to grow young stock, or is there such a thing as seed on water maples? When is the proper time to prune water maples?

Answer by W. L. Howard: It will not be difficult to collect seeds of the soft maple in the spring as soon as they have ripened. They usually fall in great numbers upon the ground and may be collected with ease. They should be planted immediately. If it is absolutely necessary to prune the trees, the work should be done in late winter.

W. S. T., Corbett, Okla.—I have some apple trees six years old that have died. On examination, I find the bark is dead just under the top of the ground. Can you tell me what is the cause of the injury?

Answer by W. L. Howard: It is impossible to say with certainty, but it would seem that the trees are affected with what is known as "collar disease," which often kills fruit trees, especially the Grimes' Golden. Root rot sometimes causes trees to die just beneath the surface of the ground. There is no known remedy for either trouble.

C. C. M., Rockport, Ind.—I have about 25 wild plum trees which are about 4 inches in diameter of body. These trees grew up from roots of Japan plums, which had been grafted on wild roots. They are healthy and vigorous and I would like to work them over to good varieties. What kinds are suitable for this section, and how should I top-work these trees? Should I graft or bud them, and when should I obtain scions or buds? (2) I also have a lot of seedling peach trees which were sold to me for Elberta. They are now about five years old. Could these be budded to good varieties? If so, when is the proper time to do this?

Answer by W. L. Howard: Such plum trees may be renewed by top-grafting, using any variety desired. Since the trunks are so large it would perhaps be best to saw off the principal branches, leaving arms six or eight inches long, and inserting two scions into each; wax over the wounds. The work should be done in spring just as the leaves are beginning to come out, but the scions should be perfectly dormant and should have been collected in late winter and kept in a cool place where they could not grow. If the scions fail to grow, there will be numerous sprouts come up which may be budded about the first of September. The buds may be secured from the new growth of any variety of plum desired. The buds are taken at the time the budding is done. The methods of budding and grafting are fully described

Irrigable Government Lands

So rapidly have the irrigable lands in the Big Horn Basin, Wyoming, been taken that the Canal Company having the contract for constructing the works to irrigate the lands whereon we have been locating people have requested the cessation of locating for a little, until canal-making can begin to catch up.

As we have exclusive contract, however, to locate quite a tract, practically untouched, containing some of the very finest of the lands in the whole Basin, we shall continue to receive and receipt for applications and set apart and reserve the choice lands for the applicants in their order and hold the reserved tracts for them until the canal company is again ready for formal locating. For those who prefer to have plenty of time in which to get ready for the first payment on water rights, this affords just what they want—first chance at some of the best of the land, to be safely held for them until they get ready to file upon it.

For those who would like to go upon the lands soon, I have arranged for a few tracts of first-class land, in a neighboring proposition—same sort of land, same price, soon to have a new R. R. within 1 to 5 miles, an inexhaustable water supply, perpetual water right; the only difference being in the terms of payment, to this extent: that the locater will pay one-fourth of the price of the water-right as his first payment; the balance divided into many small payments, instead of one-fifth cash and one-fifth per year thereafter, as in case of the lands we have been locating.

For a limited number of persons who would like to go upon their land within the next 60 to 90 days, I can get a good piece of this land. It is choice and good. I also have a few quarters—and some smaller tracts, more or less improved, which the locators, for one reason or another, (as will always occur, where there are so many) will sell.

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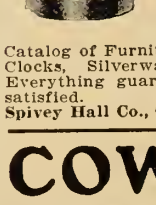

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in the booklet, "The Propagation of Plants," which will be sent for 25 cents by The Fruit-Grower. (2) Peach trees cannot be successfully grafted. They should be cut back in late winter or early spring, causing young sprouts to spring up which may be budded as described for the plum.

C. G. B., Tipton Ford, Mo.—What fluid can be used to spray weeds and grass to destroy them? I think I have read of such a preparation, which is used for this purpose.

Answer by W. L. Howard: One of the best fluids we have used for killing weeds is a one per cent solution of formaldehyde. This material may be purchased at the drug store in small quantity and diluted with water. It usually costs about fifty cents per pint. This amount will make up twelve and one-half gallons. In quantity formaldehyde may be had from wholesale drug houses for about $2 per gallon.

L. E. T., Milan, Tenn.—Please tell me how to keep insects off canteloupes.

Answer by Prof. Stedman: The best plan is to cover the cantaloupes over with newspapers, holding the same down with clumps of earth or stones, until they have gotten a good, thrifty start. They will grow as well under the papers as if the papers were not there. When the plants have gotten a start, remove the papers, after which the bugs are not apt to do any particular damage. If, however, they do threaten, you can keep them off by sprinkling wood ashes or air-slaked lime over the platns. In case this fails, you can spray with kerosene emulsion in the case of sucking insects, or with any of the arsenites if they are biting insects.

F. F. M., Kansas City, Mo.—What is the best work on entomology?

Answer by Prof. Stedman: If you wish a book that will enable you to study insects from a scientific standpoint I would advise you to obtain Comstock's "Manual for the Study of Insects." If you wish a book on the various fruit insects, Saunder's "Insects Injurious to Fruit" is a good one. If you wish a small work treating of injurious insects in general, including those attacking fruit, farm and garden crops, Weed's "Insects and Insecticides" will be a handy book.

G. W., Cruso, N. C.—I have an orchard in Western North Carolina. It is up in the mountains, where I have plenty of wood land, with good top soil convenient. What is the value of this top soil, gathered under forest trees, as a fertilizer? Should it be applied under apple trees close to the trunk, or out under the branches? (2) I have a flock of 75 head of sheep. They graze on land adjacent to the orchard, and are turned into the orchard at night, in order to utilize their droppings. Orchard is set in grass and affords some grazing. How is this plan?

Answer by Dr. Whitten: (1) If the orchard land needs fertilizing, the leaf mould or top soil from under the forest trees is one of the best fertilizers which can be spread on orchard soil. First, the leaf mould contains much direct fertilizer or plant food. Second, it makes the soils mellow and relieves it of any tendency which it otherwise might have to bake and become crusty. It is one of the best materials to regulate the moisture supply in the orchard soil, both by making it porous and spongy, so the rain will settle down in wet times instead of washing off the surface; and second, by holding the moisture in the soil during a dry time. (2) It is well to use caution in turning sheep into an orchard unless the apple trees are very old and strong. Sometimes sheep severely injure fruit trees, even in a single night. If the sheep have been accustomed to browsing in woodlands in the mountains, they would almost certainly begin nibbling the trees within reach and perhaps gnaw the bark of the trees. In case the trees are headed high and the bark of the trunk has become old and scaly, so it would not be tasteful to sheep, it might be well to try them in the orchard, taking them out, of course, if they show any indication of gnawing the trees.

R. R., West Fork, Ark.—(1) Does the Early Harvest pear make a good dwarf? (2) What plum stock can a cherry be budded on? (3) Where can moss for wrapping trees be secured? (4) What would be the best variety of plum and best three varieties of peaches for this country, for a commercial orchard? (5) Is it true, as some claim, that gooseberries and currants will bear when budded on peach trees? (6) What is the best quince for this country?

Answer by Dr. Whitten: (1) I am not personally acquainted with the Early Harvest pear and have not been able to find out whether it succeeds as a dwarf. In general it may be stated, however, that nearly all pears which succeed well as standards will also do at least fairly well when grown as dwarfs. (3) Moss for wrapping trees can be secured from any of the leading nurserymen or horticultural supply houses. (4) It would be impossible to say what would be the best variety of plum and the best three varieties of peaches without knowing the ideal of the grower and the special purpose to which he wishes to put his fruit. If he has a good market for plums for preserving, the Damson is good. If he wishes to sell the plums green to be eaten from the hand as dessert fruit, the Lombard or some of the better Japanese varieties like Burbank, Abundance or Ogon, are large, attractive and of good flavor. Among the American plums, where a home market plum is desired, Wayland is good, for it is productive and ripens late enough in the autumn that the hot weather is past so that the local families will preserve it when they would not a variety ripening during the hot part of the summer when cooking operations are very uncomfortable. The same thing might be said of peaches. It depends upon whether one is marketing a small quantity in the local markets, or whether he is shipping. For a commercial orchard, however, in Arkansas, Family Favorite, Elberta and Salway are good. Many growers would prefer to include Henrietta or Pickett's late in place of the Family Favorite. (5) Gooseberries and currants cannot be successfully budded on peach trees. Only very closely related plants can usually be intergrafted. For best success they must usually be of the same species, as an apple upon an apple root, a peach upon a peach root, etc., although occasionally two of the pome fruits, like the apple and pear may be intergrafted with a fair degree of success, or two stone fruits, like the peach and plum. (6) Among the best varieties of quince for the Ozark section are the Missouri Mammoth and Orange.

F. L. C., Missouri—Can you give me information in regard to Grady, Burbank's Opulent and Guinn peaches? Are they desirable varieties to plant in Missouri? Please answer in June issue.

If any of our readers have fruited these peaches, we shall be pleased to have report for publication in June.

G. W. W., Drain, Ore.—Will linseed oil and white lead injure a tree, if it is applied as a paint to the trunk? If not injurious, I should think it would be of benefit in preventing injury by borers and would prevent the accumulation of moss.

Answer by Dr. Whitten: Linseed oil and white lead will not usually injure fruit trees if applied to the trunk. It is beneficial in keeping out borers, prevents the accumulation of moss, and in some cases in this western country, the white lead reflects the sun's heat, rendering the trees less susceptible to sun-scald. I do not know whether frequent and repeated paintings would injure the trees or not, but a coat of white paint applied once a year has not injured the trees on the Experiment Station grounds. It has also been recommended by others who have tried it more extensively than we have.

Invitation to Strawberry Growers.

Editor The Fruit-Grower: I want to invite all interested berry men to send representatives to Harriman, Tenn., about May 20, to see the wonder of the berry field, the "Three W." strawberry. I want them to see it in the field, on the platform, and to read the returns from market. The "Three W." is the coming berry.

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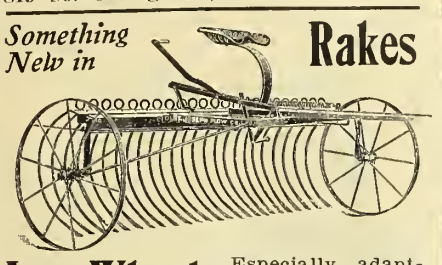

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NO. 1—PROPAGATING TREES AND PLANTS.
BOOKLET NO. 1 describes fully the process of budding, grafting, layering, etc., and as the different processes are shown by illustrations, one can readily understand how this work is done after reading this booklet. It is by Prof. W. L. Howard of the University of Missouri, with photographs by E. H. Favor, of the same institution.

NO. 2—A TREATISE ON SPRAYING.
BOOKLET NO. 2 is by Prof. J. M. Stedman, entomologist of the Missouri Experiment Station. This booklet does not cover the whole field of insect life, by any means, but it does treat of some of the insects which are most destructive to fruit crops, and gives directions for their destruction. Many of the most destructive insects are shown in the illustrations, and the booklet will be very practical in its nature.

NO. 3—HOW TO GROW STRAWBERRIES.
BOOKLET NO. 3 is by Dr. J. C. Whitten, professor of horticulture of the University of Missouri. It treats of growing strawberries as a commercial crop or for home use, with illustrations which help to make everything clear even to the novice.

NO. 4—THE HOME GARDEN.
BOOKLET NO. 4 is by Prof. Howard and Mr. Favor. It tells how to make hotbeds, cold frames, etc.; how to handle them to the best advantage, so that the greatest crops can be secured. The more common garden vegetables are discussed, together with some which are too often neglected. This booklet will be helpful to one who has even a small garden in the city, as well as to the farmer with a more pretentious garden spot.

NO. 5—PACKING AND MARKETING FRUITS.
BOOKLET NO. 5 is by Prof. F. A. Waugh of the horticultural department of Massachusetts Agricultural College, author of the well-known book on "Fruit Harvesting, Storing, etc." This book tells about the correct time for picking different fruits, describes different packages used in which to market them, with recommendations of best styles for different purposes. This booklet, like all the others, is fully illustrated.

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Conducted by Gabriel Hiester, Harrisburg, Pennsylvania.

Strawberry Questions.

In the April number Prof. Fred W. Card of the R. I. Experiment Station, answers a number of strawberry questions and refers others to practical men who may have had special opportunities for observation along the lines indicated. The writer had a number of years' experience in growing and shipping strawberries, cultivating at times as high as twenty acres and has formed an opinion from his experience on some of these questions.

Question No. 9.—"How close to the fruiting season should berries be cultivated?" My object in growing berries was to get the largest number of dollars off of each acre. Quality regulates the price and a sandy berry is a second class berry, no matter how large it may be. Now, you cannot have clean, bright berries if you cultivate in the spring. My plan was to cultivate as late in the fall as possible, then about the first of November turn in a lot of boys and have the patch carefully hand weeded, and as soon as the ground was frozen hard enough to bear a cart, to cover the whole surface of the ground about two inches deep with fine horse manure. The snow and rain of winter will wash this out clean and leave a bright clean mulch all over the surface which will keep down any spring weeds that would otherwise start with the first warm weather. And will conserve the moisture better than cultivation. The plants will grow right up through this fine mulch, and yield full crops of large berries, but owing to the excess of nitrogen in this mulch, the berries will be soft and will not ship well unless potash be added in some form and here comes my answer to No. 18:

"Should phosphate, potash, bone meal, nitrate, tankage and dried blood be applied in fall or spring?" I found the best results from the application of kainit in the fall. I had an idea that in addition to making the berries firmer, it acted in a measure as a preventive of the white grub which some years was quite troublesome on two-year-old patches. I would apply all nitrogenous fertilizers to the crop the first year when the object is to produce strong plants, and when the patch is ready to bear, balance up the stable manure mulch with kainit in the fall, or with sulphate or muriate in the spring. If wheat has been grown on the land for a number of years, as is the case in this neighborhood, phosphate should also be applied broadcast on top of the mulch in time to get the benefit of the spring rains, which will wash it into the soil.

Question 19: "What is the best basic formula for fall, or spring, application?" There is no best formula, each grower must study his own farm, and adopt what his conditions seem to require.

No. 21: "What effect does phosphate, potash, bone meal, nitrate, tankage and dried blood have on berries?" I have noticed that when I used a highly nitrogenous fertilizer, the berries did not stand up as well the second day as they did when I used some form of potash along with it. I had ample opportunity to observe this as some of my berries were handled by retail dealers in our own town and when any were left over there was a marked difference in the color and general appearance of the two lots.

As to whether rows running north and south yield better or mature earlier than rows running east and west, I canot say, but in rows running east and west the first picking is taken almost entirely from the south side of the row. G. H.

Canadian Plans for Marketing Apples.

In a former issue we wrote of the interest the Canadian Government was taking in the development of its fruit industry, under the direction of capable government officials. The number of varieties of apples has been much reduced so that they are now planting in quantity only about four leading varieties. They have discouraged the planting of apples in the southern sections of the province, where cold storage is necessary and are encouraging the planting of large orchards in the northern sections, where the fruit can be kept without cold storage. They have passed a bill called the "Fruit Marks Act," requiring government inspection of fruit intended for export and describing the different grades, so that the mark on the package will designate the character of the fruit contained therein. They have carefully studied the requirements of the various foreign markets and have arranged to introduce their apples and pears in all of them, and now we find the dealers have formed a combine with the idea of capturing the best of the foreign markets, and unless our growers in the Eastern states are more careful in packing and marking their fruits, our Canadian brothers will take from us a large proportion of our best foreign trade. The following is an account of the combine just forming for this purpose. Copied from the New York Packer:

Toronto, April 10.—London apple dealers are greatly disturbed over the report of a combine existing among Canadian apple exporters, which, it is stated, will begin operations this coming season.

It is proposed to send this year 150,000 bushels, with an increase to 250,000 the following year if this is found to be satisfactory, but the most surprising part of the affairs, says "Expert," writing for the Edinburgh Scotsman, is that none of these enormous parcels are to be sold on commission. They will be offered outright at a price to be fixed, so that the aim of the combine is to effect a revolution in the system of distribution.

The whole movement is attracting an extraordinary amount of attention in the fruit producing and distributing centres. Covent Garden dealers predict the failure of the movement. They consider it an attempt to interfere with the settled systems of distribution, and that a serious blow will be struck at the market commission system. Already a market combine to check its effect, and that of the Canadian shippers, is talked of. Several large distributive firms throughout the country, too, oppose the attempt of the Canadian combine to disorganize the system of disposal at present utilized by the wholesale commission firms.

It is thought that the action of the combine will cause an abundance of Canadian apples in every town throughout the British Isles, and thus the English fruit-growers fear the demand for home fruit will fall off. The action of the Canadian fruit-growers is due to the American competition, which last year practically monopolized the business of the leading English cities.

A fruit distributors' organization has been formed, with headquarters in Toronto, to better shipping conditions in the Niagara peninsula. The present system has been found to be defective, particularly by smaller shippers, who experience great difficulty in keeping in touch with the demands and conditions of various markets, as a result of which they have been obliged to sacrifice their fruit by reason of having it shipped to an overstocked market.

To obviate this, a number of prominent fruit shippers have formed a company, which, it is thought, will bring about a more equitable distribution of fruit throughout the Dominion.

Says the Toronto World, respecting the organization: "The company has completed negotiations with the Bell Telephone Company for a private line from Toronto through the Niagara

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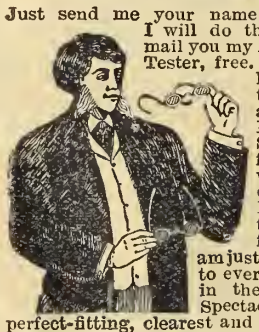

Just send me your name and address and I will do this: First I will mail you my Perfect Home Eye Tester, free. Then (after you have sent me your test) I will mail you a Perfect Fitting Five Dollar Family Set of Spectacles for only $1, which will include a pair of my Handsome Rolled Gold Spectacles, absolutely free of charge. I am just doing this to prove to every spectacle wearer in the world that my Spectacles are the most perfect-fitting, clearest and best in the world today, and I will return your dollar as cheerfully as you send it, if you yourself don't find them to be the finest, clearest and best you have ever bought at any price, anywhere. Address:—

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And any man or woman (also storekeepers), without any previous experience whatever can fit the weakest eyes with my Improved Metal Eye Tester, which is so simple that anyone can test with it with absolute correctness. If you are not earning at least $25.00 weekly don't delay another minute as my agents are making from $25.00 to $100.00 every week, selling my famous Spectacles, either in their homes, traveling, or in stores. My Agent's Outfit includes my Latest Improved Metal Eye Tester, a Handsome Traveling Spectacle Case and everything else necessary to start you right, also the necessary documents showing that Agents need no license anywhere.

Write me at once as this is the best time to begin. Address:—

DR. HAUX SPECTACLE CO., Haux Bldg., St. Louis, Mo.

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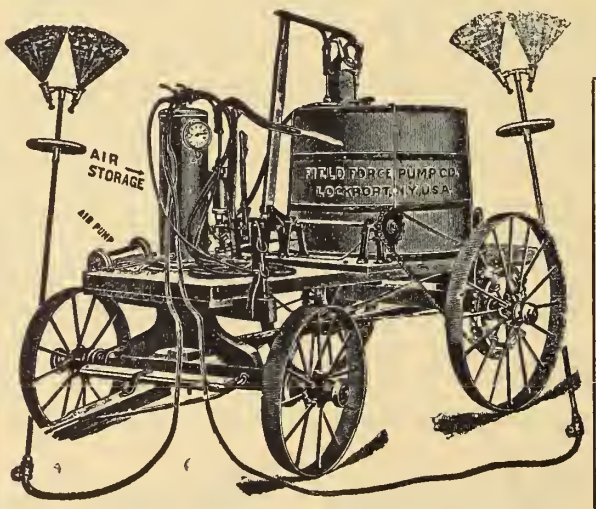

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You may be surprised
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Do you want an income of from $100.00 to $1,000.00 a year? If so, return this conpon promptly. If upon examination you are not thoroughly convinced that this is one of the Greatest Opportunities of your life to secure a steady, permanent income, as long as you live, you are under no obligation whatever.

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Please reserve.....Shares for me, send me certificate, booklet, reports and all information; if I am fully convinced that it is an enterprise of the soundest character and will prove Enormously profitable, I will pay for same at the rate of $2.00 per share per month until fully paid. No more than five shares reserved for any one person.

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Beautiful Album Free! An elegant souvenir photograph album containing a number of very interesting views will be sent to all returning this coupon.

DON'T BUY A GASOLINE ENGINE FOR SPRAYING

or any other purpose, until you investigate

"The Master Workman"

a two-cylinder gasoline engine superior to all one-cylinder engines; revolutionizing gas power. Costs Less to Buy and Less to Run. Quickly, easily started. No vibration. Can be mounted on any wagon at small cost—portable, stationary or traction. Mention this paper. Send for Catalogue. THE TEMPLE PUMP CO., Mfrs., Meagher & 15th Sts., Chicago. THIS IS OUR 61ST YEAR.

BEE KEEPERS!

We have three carloads of Higginsville Aparian Supplies in stock, which we will furnish at factory prices, saving freight from factory to Kansas City. Special prices furnished on large orders. Correspondence solicited. Catalogue furnished on application. Advise ordering early.

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403-5 Walnut St., Kansas City, Mo.

B SUPPLIES ALL KINDS AT LOWEST PRICES
Illustrated Catalogue Free.
J. W. Rouse, Mexico, Mo.

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Fruit and Ornamental **PLATES**

An experience of over 30 years and our unequaled facilities have made our plates leaders. They are used by the leading nurserymen and agents in the United States and Canada. A trial order will convince you of their superiority. Send for catalogue and prices.

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LOGANBERRIES

Let every fruit-grower plant some Loganberries. They are proving more productive and profitable than Blackberries and ripen at a season before summer drouths. **Strong, well-rooted plants, $1.00 per dozen, postpaid.** Write for illustrated circular. Special prices in quantities.

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Also Potatoes and Onions.

We want your consignments, offer you the best markets in the country, prompt returns and satisfactory service; 36 years in the produce business means that we deal **fair and square.** Refer to leading banks and commercial agencies.

Write or wire us what you have to offer. **Do it right now.**

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to make money is by sending us your shipments of
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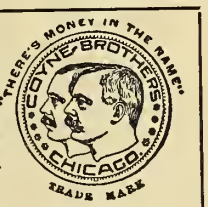

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COMMISSION MERCHANTS.
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16 South Third Street and 115 Market Square **St. Joseph, Mo.**

Wholesale Fruits and Produce
Berries a Specialty

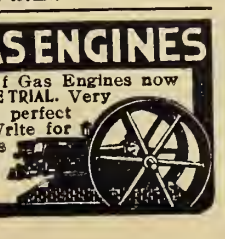
Dealers in Berry Box Material, Grape Baskets, Egg Case Material. All kinds of Baskets in stock. Established 1864.

DIBBLER AND TRANSPLANTER

The only PRACTICAL DIBBLER ever made for setting, TRANSPLANTING and fertilizing plants; also weeding lawns and other purposes. 50c by mail. J. J. OLINGER & CO., 200 West 44th St., New York. Agents wanted; write for illustrated circulars and terms.

WITTE GAS ENGINES

The highest type of Gas Engines now sold on 30 DAYS FREE TRIAL. Very sensitive governor; perfect electric igniter. Write for Catalog. Address WITTE IRON WORKS, 141 W. Fifth Street, Kansas City, Mo.



peninsula. This will enable them not only to keep track of the distribution of fruit, but also in touch with the most desirable markets. This will also be a benefit to the dealers in the different towns and cities of Canada, by preventing their markets from being overstocked and inspiring them with more confidence to handle home-grown fruits.

"It is thought that this will lead to the disposal of much larger quantities throughout the country. The company is capitalized at $1,000,000, and it is stated that a large quantity of stock has already been taken up.

Box Packages for Apples.

In view of the recent discussion as to the best form of packages for shipping fruit, it is of interest to note there seems to be considerable discussion over the question in Canada as to whether boxed or barreled apples should be exported.

The Canadian Grocer, commenting on the matter, has the following to say:

"The bill now before the House of Commons, Ottawa, which provides a uniform box package for apple for the export trade, will, if it becomes law, be perhaps the greatest innovation in the history of the Canadian fruit growing industry up to the present time, in addition to having a far-reaching influence on the Canadian export trade.

"In the autumn of 1904 we interviewed Mr. A. McNeill, chief of the fruit division, who spared no pains in impressing us with the superiority of the box package for fancy fruit. According to Mr. McNeill there could be little doubt about the barrel being the more desirable package for about 80 per cent of Canadian apples. At the same time, a barrel of Canadian apples seldom reached Great Britain in perfect condition, and everyone knew that there were certain varieties of apples which simply could not be shipped in barrels without spoiling. To the Englishman who wanted a fancy apple for table use, price was no object and a bruised apple not to be thought of. For this trade the box package was necessary. It was entirely because Tasmanian and Californian fruit came thus packed to the English market in perfect condition that it had become so popular. The box, moreover, was about as cheap a form of package as the barrel, owing to the advance in the price of first-class barrels during the past two or three seasons. Year before last a number one quality barrel cost as high as 65 to 70 cents, and, although the price had since dropped to 36 cents, there was at the present time comparatively little difference in comparison with the cost of the regulation box.

"A second argument in favor of the box was that the English trade preferred it; at the same time it had to be remembered that the English consumer was accustomed to seeing Canadian apples in barrels, and, naturally enough, was suspicious when he happened upon a box package labeled 'Canadian apples.'

"Mr. McNeill went on to say that the Canadian buyer and wholesale dealer, as well as the broker, the wholesaler and the retailer in Great Britain, favored the barrel simply because less labor and expense were involved in handling. The solution of the whole matter lay in the education of the English consumer to the superior value of fancy Canadian apples packed in boxes. Some of the authorities in Ottawa go even further than Mr. McNeill, and emphasize the superiority of the box package, from the standpoint of cheapness in handling, convenience of size, and uniformity of packing.

"Fruit men, although interested in the proposed legislation are by no means united in supporting or opposing the bill. Some firms who are accustomed to the barrel package and know with what distinct approval Canadian barreled apples have met in foreign markets, are inclined to doubt whether any benefit can accrue to the Canadian fruit trade, at the same time contending that the barrel will always be the more popular package. Others are inclined to view Mr. Fisher's bill with favor; they recall the Fruit Marks Act, which was viewed suspiciously by the Canadian fruit-trade before it became law, and has since proved to be in their best interests. The big question is whether the box package will mean bigger profits for the shipper in Canada, and even those who are opposed to the new bill on general principles admit that this cannot be answered until the box packages comes into general use."

What's the Matter With Manure Spreaders?

For several months The Fruit-Grower has carried the advertisement of the J. S. Kemp Mfg. Co., Waterloo, Iowa, which firm makes an excellent manure spreader. The advertisement occupied eight inches of space, so that it was large enough to be seen. And yet the advertiser writes us that our readers seem not to be interested in manure spreaders, for the advertisement has not brought results. Some time ago another manufacturer of manure spreaders told us the same thing.

We want to ask our readers why this is the case. We know that 40,000 copies of The Fruit-Grower have been mailed monthly to the very best class of farmers. We know these farmers are interested in The Fruit-Grower, and they read our advertisements; advertisers generally have received good returns. And yet the fact remains that this manure spreader did not appeal to our readers.

Why is this? We know fruit farmers use manure. Why not use manure spreaders, so that this manure can be used to the best advantage and in the most economical manner?

Will some of our readers help us to solve this problem? We do not want to carry any advertisement which does not appeal to our readers, and which is not profitable to the advertiser. But this advertisement ought to have been profitable, and we want to know why it was not. Was the fault with the advertisement? Was the fault with the machine itself? Or do fruit-growers have any use for manure spreaders? Is this one case in which they are not up with the farmers in other lines?

Please send us your views, for our own information, if you please, for we are interested in this matter, and want to know why an advertisement of a manure spreader does not attract Fruit-Grower readers, when it would seem that they should be among those most interested. What do our readers say about it?

Bordeaux Mixture Made Quickly.

The American Horticultural Distributing Co., Martinsburg, W. Va., realizing the fact that many persons do not properly made Bordeaux mixture, and knowing that a great many persons prefer to have the mixture made by experts, has perfected a Bordeaux which is ready for use by the addition of water. This company has experimented a great deal, and claims that the preparation it is now selling under the name of "Target Brand Quick Bordeaux," is in every way equal to the best Bordeaux mixture which can be made, and it is ready for use by the addition of the required amount of water. This preparation comes in a sack, with an oiled paper partition between the lime and the copper sulphate, so that there is no chemical action until the water is added by the person who is to use the mixture. It is claimed that chemically and mechanically the Bordeaux mixture is perfect. One sack makes 50 gallons; for larger quantities use more sacks. Address American Horticultural Distributing Co., Martinsburg, W. Va., for particulars, prices, etc.

This Will Interest Many.

F. W. Parkhurst, the Boston publisher, says that if any one afflicted with rheumatism in any form, or neuralgia, will send their address to him at 30 Shawmut Bldg., Boston, Mass., he will direct them to a perfect cure. He has nothing to sell or give, only tells you how he was cured after years of search for relief. Hundreds have tested it with success.

Asthma

CURED TO STAY CURED.

Attacks stopped permanently. Cause removed. Breathing organs and nervous systems restored. Symptoms never return. No medicine needed afterwards. 21 years of success treating Asthma and Hay Fever. 58,000 patients. Book 35F Free. Very interesting.
Write **P. Harold Hayes, Buffalo, N. Y.**

Make your own Fertilizer at small cost with
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From 1 to 40 H. P. Send for catalogue.
WILSON BROS. Sole Mfrs., Easton, Pa.

The Bees Work Free

Learn how to make them earn money for you. Read *Gleanings in Bee Culture* (6 months' trial 25c.) It will show you how easily, how quickly, you can learn to handle bees; how to get the honey fastest. 6 Mos. 25c.

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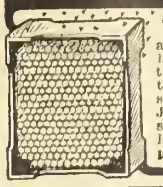

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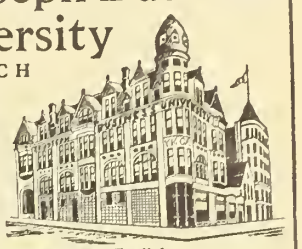

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Chillicothe Telegraphy College
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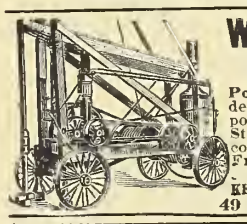

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An early yellow freestone, ripening a week before Crawford's Early. Trees from the originator have seal attached. Prices free.
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Healthy, vigorous, productive and free from insect pests. NONE BETTER or cheaper. No traveling salesman can compete with us in price, quality considered. Get Free Catalogue.
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Sound, because they grow and produce good crops. Our catalogue is free and we want you to have one. It describes the best varieties only of vegetables, fruits and flowers, including the COMMONWEALTH STRAWBERRY, which is superior to the famous Sample; also other choice varieties.
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FREE SEND FOR **BOOK** ON NEW **PROCESS**
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Mrs. W. T. Price 1604 PENN AVE., N, MINNEAPOLIS, Minn.

FENCE *Strongest Made*

See how closely it is woven. Sold direct to the farmer at factory prices, on **30 Days Free Trial.** Your money back if not satisfied. Write today for free Catalogue.
COILED SPRING FENCE COMPANY
Box 128, Winchester, Indiana.

Prospects for Fruit Crop.

The reports received from Fruit-Grower correspondents in all parts of the country are most encouraging this month. Just after the April number was issued a severe cold snap came, and on April 16 and 17 ice froze one-quarter to one-half inch thick as far south as the Arkansas line, extending eastward and doing more damage as it progressed toward the east. It was at first thought the apple crop had been seriously injured, but the opinion now is that in Missouri, at least, the injury was slight, although farther east it is believed the crop suffered more severely. Pears were badly hurt, and the strawberry blooms which were open were of course killed. This will have the effect of making the strawberry crop somewhat later than it would have been otherwise, but the crop was not damaged to any appreciable extent.

On the whole, the situation is regarded as very favorable at the present time. Strawberries promise an abundant crop—best for years. Raspberries and blackberries were cut short by the winter, promising from one-half to three-fourths crop generally throughout the middle west. Peaches are a very short crop in this section, although more bloom appeared than was thought probable two months ago. In the states of Tennessee, Georgia and Alabama the peach crop has been cut short, but Texas promises an abundant crop. Apple prospects are very good throughout the west. Ben Davis trees are not blooming heaviiy, as a rule, but other varieties are very full, and the bloom appears strong and vigorous. Weather conditions at blooming time have been good generaliy, and growers are more encouraged than for many years. A critical time is yet to come, of course, but with good weather conditions for several weeks following the dropping of the apple bloom, the growers will begin to consider the purchase of packages to pack at least part of their prospective crop. In making reports correspondents were asked to report weather condition at time of apple bloom, and also report damage by freeze of April 16. Unless reported to the contrary, no injury resulted from this freeze.

The summary of the reports the Fruit-Grower has received follows:

Cullman, Ala.—Frost caught pears, plums, apples, early strawberries and other fruits, and injured them severely. Peaches were killed some time ago.—T. E. M.

Gadsden, Ala.—The peaches which were left by February freeze were killed on the 17th, except where on very high locations.

Springdale, Ark.—Strawberries held back by cold weather, but are moving now; condition, 95 Raspberries badly killed; will have perhaps half crop. Blackberries promise 75 per cent crop. No peaches; trees badly injured. Apple bloom best in years, weather favorable and no canker worms. Strawberry and apple prospects were never better. Nearly all our fruit will be handled through Ozark Fruit-Growers' Assn.—R. I. J.

Bentonville, Ark.—Strawberries excellent crop. Other small fruits good. Peaches killed in February. Plums good; cherries fair. Apple bloom abundant; weather cold and wet; no injury from last freeze.—I. B. L.

Mammoth Spring, Ark.—Freeze of April 17 killed 25 per cent of strawberries, injured most of Japan plums and a few apples and pears; otherwise no damage. Everyone seems joyful at prospects.—D. S. H.

Grand Junction, Colo.—Peach crop almost a failure in Colorado; not to exceed 10 per cent of crop in this valley, with exception of Palisade district, which will have perhaps 75 per cent. It is understood that Paonia, Hotchkiss, Delta and Montrose are also practically a failure with peaches. Pear and apple prospects were never better.—J. F. M.

Rocky Ford, Colo.—Strawberries and other small fruits full crop. Peaches all killed. Red plums full crop, blue plums half crop. Apple bloom very heavy; weather clear and warm.—J. H. C.

Canon City, Colo.—Strawberries in fine condition; red raspberries damaged, blackcaps all right. Native plums fine; foreign varieties, quarter crop. Apple bloom fine; weather favorable. Season ten days to two weeks later than last year saved crop from the last freeze.—J. W. W.

Paonia, Colo.—Small fruits all promise full crop. Not over one-fourth crop peaches; other stone fruits unhurt. Apple bloom fine and large crop promised; weather conditions good.—J. W. B.

Rome, Ga.—Small fruits promise half crop. Peaches half crop. Freeze of 17th injured apples and other fruits on low ground.—G. H. M.

Austell, Ga.—Freeze hit us hard, and crop will be short. Corn was up two to three inches and was killed. Farmers are cutting their cotton acreage 25 to 40 per cent from last year, and are planting more corn and cowpeas.—J. B. G.

Gainesville, Ga. — Peaches badly killed on low ground, but the orchards on high elevations promise good crop.

Ft. Valley, Ga.—No damage to peach crop here. Shipments will not be so large as last year, but quality will be better.—J. H. B.

(Reports generally indicate light crop of peaches in North Georgia, except in favored locations. Middle Georgia will have more fruit, particularly on high ground, and South Georgia will have good crop.)

Murphysboro, Ill.—Peaches, 20 per cent crop; pears, short crop; cherries, fair to good crop. Apples promise 80 per cent crop; Winesaps dropping some. More care being given orchards than ever before.—G. W. L.

Vernon, Ill.—Strawberries not all killed. Apples not badly hurt.—E. W. J.

Hamiiton, Ill.—Strawberries good crop; other small fruits fair. Peach crop killed and trees badly injured. Other stone fruits fair. Apple bloom fine; weather foggy.—H. D. B.

Clayton, Ill.—Strawberries in excellent condition; other small fruits fair. Peaches poor; other stone fruits good. Apple bloom fine; weather unfavorable.—G. A. S.

Jerseyville, Ill.—Apple bloom good; weather rainy. Little damage by freeze to anything except small fruits.—I. D. S.

Quincy, Ill.—Strawberries good crop; raspberries good, but blackberries injured. Peaches almost total failure. Plums light crop; cherries good. Apple bloom full except Ben Davis; weather good, except some rain.—C. H. W.

Alton, Ill.—Strawberries good, some early bloom killed. Blackberry plants much injured by winter. Some peaches on bluffs near the river. Plenty of plums and sour cherries. Apple bloom abundant; weather conditions unusually good. Last freeze killed strawberry blooms which were open and killed some grape shoots.—E. A. R.

Savoy, Ill.—Strawberries in good condition. No peaches. Apples in mid-bloom; bloom uneven on some varieties, but generally the prospects are good.—R. L. D.

Vincennes, Ind.—Strawberries nearly a full crop; other small fruits all right. Peaches, perhaps one-fourth crop. Few plums, but a good many cherries. Apple bloom profuse, and it seems that a fair crop is setting. Some injury from freeze, but too early to tell to what extent the fruit will drop.—H. M. S.

Lawrence, Ind.—Early strawberries slightly hurt by frost. Currants and gooseberries good. Peaches promise half crop. Plums half crop; cherries about the same. Apple bloom full; seemingly not damaged by freeze. This report is for state generally.—W. B. F., Sec.

Marion, Ind.—Strawberries in fine condition and promise a good crop. Other small fruits fair; some injury to canes. Peaches promise largest crop for years. Cherries 80 per cent killed; plums about half. Pears very promising. Apple prospects are for full crop. Freeze did no damage except to cherries and Japanese plums.—S. T.

Salisaw, Ind. Ter.—Poor crop of strawberries; blasted blossoms. Peaches small crop. Plums and cherries fine. Too much rain here.—W. W. W.

Des Moines, Iowa.—Summary for the state follows: Apples, 90 per cent; pears, 75; American plums, 90; domestica plums, 63; Japan plums, 65; cherries, 80; peaches, 12; grapes (uncovered), 77; red raspberries, 74; blackcaps, 74; blackberries, 74; strawberries, 95.—W. G., Sec.

Glenwood, Iowa.—Strawberries in fine condition, but early bloom killed. Other small fruits promise well, except that they were killed back somewhat. Peach bloom all killed and lots of the trees. Other stone fruits in good shape, except Japanese and European plums. Apple bloom good; never saw a better prospect; weather good, except a little cold. Early crabs and pears killed by April freeze.—J. P. J.

Villisca, Iowa.—Strawberries damaged by April 17 freeze; perhaps 10 per cent injured. Peach bloom all killed, and many trees. Apple bloom abundant; weather good.—H. S. A.

Topeka, Kan.—Strawberries good crop; other small fruits hurt badly. Peach crop very short; other stone fruits fair crop. Apple prospects good.—W. H. B., Sec.

Sharon, Kan.—Fine prospects here for all kinds of fruits except peaches, and we will have some seedling peaches.—C. A. B.

Wathena, Kan.—Perhaps one-third of early strawberry bloom killed by cold spell of April 16; medium and late varieties unhurt. Some injury to blackberries and raspberries; would place their condition at 80 per cent. Perhaps 25 per cent crop of peaches, mostly seedlings, although some of the hardier varieties of budded trees are quite full. Japan plums badly killed by freeze; natives were in bloom in cold weather and may drop. All cherries of Morello class badly hurt by cold winter; other sorts in good condition, with good crop. Apple trees in good condition, with about enough bloom to make good crop; weather conditions varied, and with plenty of sunshine may escape apple scab, which ruined crop last year.—J. B., Jr.

Wichita, Kan.—Prospects for strawberries generally poor, except on high ground; other small fruits fair. Peaches all killed; plums and cherries fine. Apple prospects best ever had; bloom abundant and very pink.—E. G. H.

Edwardsville, Kan.—Good prospects for strawberries; other small fruits poor. No peaches; other stone fruits set fair, but are dropping. Apple bloom about half; weather excellent.—E. T.

Holton, Kan.—Strawberries, 75 per cent crop; early blossoms killed. Other small fruits promise half to full crop. Peaches, 10 per cent. Cherries all right; plums damaged by frost. Apple bloom good, with weather not the best. Plums and pears in bloom badly killed by freeze of April 16.—F. W. D.

Leavenworth, Kan.—Strawberries in fine condition. Raspberries and blackberries winter killed; promise half crop. Good scattering of peaches, but the crop was killed. Grapes, currants and gooseberries promise good crops. Apple bloom good and prospects excellent. Freeze killed strawberries in bloom and some Japanese plums, but have plenty left.—E. J. H.

Bowling Green, Ky. — Strawberry crop badly damaged by freeze. Also Japan plums; Ogon least so, followed by Wickson, showing these two to be among the hardiest Japan varieties. Apples, pears and peaches fared much better, and suffered little injury.—E. W. S.

Ipswich, Mass.—Strawberry prospects fine. Peaches fine, with very heavy bloom, but condition poor where trees are uncared for. Plums promise good crop. Apple bloom light, especially on Baldwin; weather cold and dry. Peach buds badly killed on low lands.—A. F. T.

Amherst, Mass.—All fruits promise well, and weather favorable. Prospects generally were never better.—F. A. W.

Benton Harbor, Mich.—All berries look well, with fair acreage here. Peaches promise full crop, even of Late Crawford. Apple prospects good.—M. L. McC.

Watervliet ,Mich.—Strawberries, 80 per cent; some other berries winter killed. Peaches, 90 per cent; plums, 75 per cent. Early apples full bloom, late varieties, 80 per cent; weather favorable.—R. H. S.

Kansas City, Mo.—Strawberries, 100 per cent; raspberries, 30; blackberries, 70. Peaches, 10 per cent of crop; cherries, 75; plums, 80. Apples promise 85 per cent of crop; weather dry and cool. Slight damage from freeze of April 16; may cause drop in June, but think not.—L. A. G.

Oak Ridge, Mo.—All fruits, even peaches, promise full crop.—H. W. (This is down in Southeast Missouri, along the Mississippi river.—Ed.)

Koshkonong, Mo.—No peaches to ship. Apples damaged somewhat by freeze, but not badly. Pears and plums were also hurt.—O. L. M.

Columbia, Mo.—Strawberries, 90 per cent of crop; plants fine. Other small fruits half crop, due to winter-killing. Peaches, 10 per cent; other stone fruits, 50 to 60 per cent. Apple bloom mostly full, and enough uninjured to make full crop; weather favorable. Late freeze killed some blossoms, but left plenty.—J. C. W.

Oregon, Mo.—Full crop of strawberries promised; one-fourth to one-half crop of raspberries and blackberries. Only a few peaches. Cherries half crop, plums one-fourth. Apple bloom fair; some varieties had light bloom. Weather fair.—N. F. M.

Parkville, Mo.—Prospects for fine strawberry crop; raspberries and blackberries badly damaged. Not one peach in orchard. Cherries, plums and pears, fair crop. Some varieties of apples full, others scattering. Weather conditions good. Early strawberry blossoms nipped by frost, but enough left for crop.—D. L.

Mountain Grove, Mo.—Medium and late strawberries promise 75 per cent of crop; other small fruits generally in good condition. Peaches very scattering. Cherries (Ea. Richmond), 75 per cent crop. Heavy apple bloom, but only 60 per cent of crop setting. Freeze caught early strawberries, May Duke cherries, Kieffer pears ,and badly injured Jonathan, Arkansas Black and early-blooming apples.—A. Z. M.

Lebanon, Mo.—Strawberry crop fine; other small fruits in good condition. Peaches all killed; other stone fruits promise well. Apple bloom very heavy on all varieties except Ben Davis. Weather conditions good. Can see no injury from freeze on uplands, but on low lands the apple bloom was injured.—A. T. N.

Odessa, Mo.—Strawberries damaged; will be light crop. Other small fruits also damaged. Very light crop of peaches. Apple bloom well set, and prospects good, except for Ben Davis, which promise half crop; Jonathan and other sorts promise 75 per cent of crop.—S. H. P.

Richards, Mo.—Splendid prospect for strawberries; other small fruits in bad shape. Peaches killed. Light bloom on Ben Davis apple trees; fair on Jonathan and Missouri Pippin. Weather dry and favorable, rather cool. Well-sprayed apple trees show an advantage.—W. H. B.

Sarcoxie, Mo.—Prospects indicate a bountiful strawberry crop. Raspberries badly damaged by winter; blackberries also slightly damaged. No peaches. Plums full, cherries fair. More bloom on apple than ever seen before. Weather fail. Freeze killed all blossoms out on strawberries, but this will not affect the total crop, except to put it back for several days.—D. McN.

St. Joseph, Mo.—Strawberries promise very fine crop. Raspberries and blackberries not over half crop. Very few peaches. Cherries and plums injured by freeze of April 16. Apple prospects fine, except that bloom on Ben Davis trees is very uneven. Weather generally good.

Neosho, Mo.—Prospects for an average crop of fine strawberries. No peaches. Cherries half crop; plums light crop. Prospects for good apple crop.—J. H. C.

Lincoln, Neb.—Good prospects for cherries, apples and small fruits. Late freeze caught plums.—L. O. W.

Crete, Neb.—Prospects for strawberry crop above the average. Blackberries somewhat injured by winter, although Snyder came through in good shape. No peaches, and trees badly damaged. Apple prospects are good. Plums and some of early apple blooms were injured by freeze of April 16.—E. F. S.

Tecumseh, Neb.—As fine prospect for strawberries as we ever had. Raspberries somewhat winter killed, but will have half crop. No bloom on gooseberries. Not more than 2 or 3 per cent of peach crop. Apricot and plums bloomed full. Apple bloom very full, and seems to be all right.—W. G. S.

Adams Basin, N. Y.—Indications point to small crop of strawberries. Peaches have not been injured, and other stone fruits promise well. Plenty of apple buds, and weather is favorable.—C. O. B.

Lockport, N. Y.—All fruit trees went through winter in splendid condition, and from appearances we will have one of the largest fruit crops in years.—D. T. McC.

Fayetteville, N. Y.—All fruit seems to be in good condition. Prospects for full apple bloom.—F. E. D.

Yukon, Okla.—Small fruits all promise full crops. Peaches killed. Apples promise fair crop; weather a little too cloudy.—A. S. P.

Guthrie, Okla.—Strawberries promise fine crop; blackberries fair; raspberries and gooseberries good crops. Practically no peaches, not enough for home use. Burbank and Abundance plums extra fine; Wild Goose and Statuma failures. Apple prospects very promising, never finer at this date. Unfavorable weather a part of April caused some falling of fruit.—J. C. J.

Rockwood, Ohio.—Fair crops of berries. Fair crop of peaches, except light crop of Elbertas. Other stone fruits promise well. Heavy setting of apple. Variable weather. Prospects are for better than average crop of most fruits.—A. T. C.

Delaware, Ohio.—Large acreage of strawberries in fine condition. Other small fruits promise well. Peaches injured by frost in April, but enough are left. Apples not blooming full, but possibly enough left.—F. P. V.

Forest Grove, Ore.—Will have average crop of strawberries. Peaches injured by late freeze, and promise half crop. Apples and pears promise full crop.—W. R. H.

Harrisburg, Pa.—Early blossoms of strawberries frozen. Other small fruits not injured. Peaches promise 75 per cent of crop on well cared for orchards. Cherries half crop, plums full crop. Heavy set of bloom on well cared for apple orchards. Weather favorable. Prospects for a good fruit year.—G. H.

Chattanooga, Tenn. — About one-third of strawberry crop. Very light crop of peaches; only high orchards have any fruit. Apple prospects badly injured by freeze of the 16th, which killed about two-thirds of the strawberry crop, and all peaches, pears and apples in the valleys.—D. W. H.

Boyd, Texas.—All fruits promise well here. Peaches and plums loaded.—S. M. W.

Walla Walla, Wash.—Prospects were fine for full crops of fruit until Sunday night, April 30. Strawberries promise half crop. Peaches, 50 per cent. Prunes and plums lost 75 per cent of crop by freeze. About 50 per cent apple bloom.—W. S. O.

Winchester, Va. — Peaches badly damaged. Apple bloom was never better, and prospects are fine. This is our apple year.—K. & C.

Martinsburg, W. Va.—Nearly all strawberries killed. Raspberries and blackberries not hurt. Peaches all killed in low lands, 25 per cent killed on uplands. Cherries, plums, etc., all killed. Apple bloom unusually good and all promising.—H. L. S.

Centralia, Ill.—Frost injured old strawberries badly; new ones very promising. Peaches one-fourth to one-half crop. Cherries good. Ben Davis apple bloom generally light; apples setting well, except in large blocks of solid varieties. Frost injured pear and strawberry blossoms; also froze some apple blooms, but plenty are left for crop where pollination was good.—W. S. P.

Tarlatan for Peach Packages.

There is a misapprehension in the minds of some persons concerning the purpose for which tarlatan is placed over peach packages. The funny newspapers claim it is to make green peaches look like ripe ones—but such is not the case. True, the tarlatan brings out the beauty of the peaches, but it also protects the fruit to a marked degree. James Thompson & Co., 16 Greene street, New York, sell great quantities of tarlatan, and it has been the experience of their customers among peach growers and shippers that fruit which is protected by the tarlatan arrives on the market in better condition than fruit not so protected. In the first place, the tarlatan holds the fruit firm in the package and prevents its rolling around during transit. The tarlatan has even held the fruit firm in its place when the package was turned upside down. In holding the fruit firm, the tarlatan of course does not bruise the peaches, as would be the case if the wooden covers of the basket or crate accomplished this same purpose. This feature in itself is sufficient to commend the tarlatan to growers who ship their fruit, it is claimed.

Then when the fruit is placed on sale, the tarlatan protects the peaches from dust, and prevents anyone from removing peaches from the package. This protection, more than anything else, it is claimed, insures the package reaching the consumer in as good shape as it left the hands of the packer—and this is to be desired by everyone who packs good fruit in first-class manner.

Peach growers who have not investigated the use of tarlatan, or those who want the best goods at right prices, should write to James Thompson & Co., 16 Greene street, New York, for information concerning their goods.

Fruit Shipping Associations.

The following new associations and corrections should be added to the list as published last month. Owing to lack of space the full directory will not be published in every issue, but changes and additions will be made as submitted, and the full list published at intervals.

Alpena Berry and Fruit-Shippers' Union.—E. W. Faulkner, Sec., Alpena Pass, Ark.

Farmington Fruit and Berry Ass'n.—C. W. Applehy, Sec., Farmington, Ark.

Fayetteville Berry Union—E. L. Nettleship, Sec., Fayetteville, Ark.

Gentry Fruit Shippers' Union—T. H. Oakley, Sec., Gentry, Ark.

Harris Fruit and Berry Ass'n.—E. L. Williams, Sec., Harris, Ark.

Lowell Fruit Shippers' Union—J. W. Kimmons, Sec., Lowell, Ark.

West Fork Berry Ass'n.—George Curtis, Sec. West Fork, Ark.

Glen Mary Fruit Co.—R. H. Cadwallader, Mgr., Louisburg, Kan.

Cole County Fruit-Growers' Union—Charles Purzner, Sec., Jefferson City, Mo.

Purdy Horticultural Ass'n.—C. M. Bennett, Sec., Purdy, Mo.

Stotts City Fruit-Growers' Ass'n.—James K Jones, Sec., Stotts City, Mo.

Home Fruit Co., Cove, Ore.—J. K. Lantz, Sec.

Fruit-Growers' Club, Vinemont, Ala.—W. E. O'Brien, Sec.

Warren County Fruit and Vegetable Growers' Ass'n.—J. H. Claggett, Sec., Bowling Green, Ky.

Lake County (Ohio) Horticultural Society—H. P. Winter, Sec., West Mentor, Ohio.

Logan County Fruit-Growers' Ass'n, Guthrie, Okla.—J. W. Furrow, Sec.

Strawberry Crop Sold in Advance.

The Castleberry (Ala.) Fruit-Growers' Association has contracted with a Cincinnati commission firm for the entire strawberry crop of the members of the association. The commission company advances $2 per crate for the Lady Thompson strawberries and $2.25 per crate for the Klondyke. These are very fine varieties, as grown at Castleberry, and carry to market in fine condition. The commission company agrees to pay the above prices at least, but the contract provides that the growers are to receive the benefit of any price above this amount, the commission company deducting the usual 10 per cent commission. Under the arrangement the shippers are assured of $800 or $900 per car at Castleberry on the advance price, which is about as good as any shipping association realizes.

Castleberry, Ala., is one of the newer berry sections. Three years ago the acreage in strawberries was 30 acres; this year more than 750 acres will bear fruit, and the planting is being extended. Land is increasing in value rapidly.

What has enabled the association to make such a good bargain? The members grow good berries and pack them carefully, and they grow only such varieties as grow to perfection in their soil. There is food for thought on the part of the growers in other parts of the country.

The Northern Pacific Company has its own refrigerator cars, and the refrigerator charges on a car of fruit from North Yakima, Wash., to Chicago are $45. For this same service from California, practically the same distance, the Armour company, with its monopoly, charges $80.

Fruit Lands at Irrigon, Oregon.

In this issue appears the advertisement of some irrigated lands at Irrigon, Oregon. Concerning this country and its possiblities the Oregon Agriculturist, Portland, Ore., has the following to say:

"There is something very attractive and encouraging about the spirit which permeates the people of the new town of Irrigon in Eastern Oregon and is made public through its very bright local paper, the Oregon Irrigator. A late issue of that paper states that about 40,000 trees will be planted there this spring for shade, ornament and wind-breaks. A little over a year ago there was nothing at Irrigon to distinguish the site of Irrigon from the long stretches of desolate sage-brush lands which surround it in all directions. Within two or three years it will be one of the attractive show spots along the line of the O. R. & N. railroad. The men who plant shade and ornamental trees when they commence to improve their lands are home-builders. Communities of home-builders are especially needed in Eastern Oregon, where so many financially prosperous wheat-growers and stockmen show no attachment except of a financial nature to the land they occupy."

Norman Shrewdness.

Writing of "A Corner in Normandy," in the June Delineator, F. Berkeley Smith gives an interesting side-light upon the real character of the Norman peasant.

These ruddy old Norman farmers understand economy to a finesse, he says. It is the secret of their wealth. And thus, when one morning I came across Pere Trebard munching a withered pear while he sunned himself beside the snug barn and asked the old man why he did not choose a good one from his fine crop, he exclaimed:

"Ah! but, Monsieur, we might sell it!"

The character of the shrewd Norman is interesting. Never will he give you a direct answer; a definite "yes" or "no" seems to have been expressly left out of his vocabulary.

"It is a fine morning," I ventured to a grizzled old dealer in oxen.

"It might be worse," he answered.

"That's splendid cider of yours, Legrosjean."

"Some say it is," he retorted guardedly.

Neither does the true Norman ever seem pleased or satisfied.

"Beautiful apples this year, Pere Mallet."

"Bah! they are so few," he replies, gloomily, with a shrug of his shoulders. The next year the trees are bent under the weight of a rich crop, and you hail this rich old agriculturist as you pass his gateway:

"Plenty of cider this year, Pere Mallet, for you have surely enough apples," you say convincingly as the old peasant looks up from his work to bid you bonjour.

"They are so small," he groans; "it takes more time to pick them up than they are worth."

Where to Look for Sprayers.

With the approach of spring, spraying matters arise and renew themselves each year. People should look to their spraying apparatus in time. We give this as a friendly note of warning to our readers that they may be prepared with right ideas and right devices, to the end that the work may be properly and quickly done, and with the least expense, when the time comes. A good sprayer is all important.

As in times past, we feel that we merely do our duty to our readers when we refer them to The Deming Company, Salem, Ohio, as manufacturers of this class of goods. They are an old reliable concern, and they make everything in spraying apparatus from small hand sprayers to their large gasoline engine outfit for orchard, park and field use. Their bucket, knapsack and barrel sprayers have become almost household words throughout the country, with gardners and fruit-growers.

The Deming Company will be glad to send their catalogue to any address on request. It illustrates and describes their sprayers fully. Note the advertisement elsewhere in this issue.

Defender Spray Pumps.

J. F. Gaylord, box 77, Catskill, N. Y., is one of the spray pump manufacturers who uses space in The Fruit-Grower every season to advertise his Defender pumps. These pumps have been used by a great many of our readers, with the best of satisfaction and this accounts for the steady trade the manufacturer has with Fruit-Grower subscribers. Everyone who is interested in fruit culture should have a copy of Mr. Gaylord's catalogue. And if you need a new sprayer, or a better one than you have, write him at once, telling him what you need, and he will quote prices for immediate shipment. Do this today, and mention The Fruit-Grower when you write.

A New Fruit Box.

There is to be found in our advertising columns a novelty in the way of a fruit package which promises much for growers. We refer to the Ferres Fruit Box. If the claims made for it in the advertisement are well founded it is going to be popular all at once and will shortly take the place of wooden boxes. It is manufactured by the J. W. Sefton Mfg. Co., Anderson, Ind.

The Ferres Box is made of corrugated paper, properly water-proofed. It is made to keep its shape by re-inforcing with tin and wood veneer. Beside being cheaper and lighter, a great advantage it has over wooden boxes is that it does not have to be nailed together and still is shipped packed flat, or in knocked-down form. It is simply stretched or pulled into proper shape, something after the manner of egg case fillers, No tools or nailing is required. It is also claimed to be an excellent non-conductor of heat and cold. This is one of its strongest points. It will secure it a large use for marketing the perishable and high priced fruits. We would recommend to packers and shippers of fruit that they look up this Sefton advertisement and write to the Sefton Sompany for further particulars.

MAKE YOUR LIFE A SUCCESS

A REAL GENUINE SUCCESS

You can do it if you will. Where there is a will there is a way. There is nothing I would like better than to assist you in finding the way. I have done it for hundreds of men and women and I will do it for you. Properly directed efforts always bring success. Tell me your wants and ambitions and I will help you to attain them. Failure is next to impossible if you follow my advice. Write for references and interesting literature worth ten times the value of your trouble. It's free, but please write today. Do it now. Address

L. H. ANDERSON SUCCESS SCHOOL,
F. G. 55 Auditorium Bldg., Chicago, Ill.

About the South

A pamphlet issued by the Illinois Central R. R. giving detailed information on the following subjects: "Fruit Growing in the South," "Southern Farm Lands," "Truck Farming," "Dairying," "Stock Raising," "Grasses and Forage Plants," "Soils of Kentucky, Tennessee and Mississippi," "Market Facilities," "Southern Immigration," and "Letters from Northern Farmers."

Write today for copy which will be mailed you free of charge.

W. H. BRILL,
Dist. Pass Agt., Ill. Central R. R.
Omaha, Neb.

Cheap Farm Power.

In a general way there has been a great deal written on this subject, but as every farmer differs in his requirements, there is no single class or style of power that covers every point.

The farmer who only keeps a few cows, hogs, etc., usually wants light power for running a small feed mill, pair of fans, pump, churn or grind stone, and the best power for his work is a neat, well built, horizontal gasoline engine, mounted with all trucks, etc., on skids, so that no extra work is necessary in erecting it, and this also permits moving from one place to another. When used for pumping alone, a walking beam or arm is frequently connected to the engine. So when placed over the pump it takes the place of a windmill and is a complete pumping rig in itself. Experience has shown, however, that a geared jack (the kind that is run by belt and placed on the pump standard), is a more convenient and lasting outfit. It takes all the strain off the engine, and being separate from the engine, is not in the way when doing other work than pumping. For this class of work the usual power is a "Witte, Jr." gasoline engine in either of the above styles. It is considered one among the best, owing to its compact and strong mounting, and the fact that it has electric ignition, and is built in horizontal style.

For the stock feeder or farmer who grinds a large amount of feed or irrigates large bodies of land, it is necessary to have a thoroughly reliable engine. If the work is of a permanent nature, then the engine is usually placed on foundation of heavy timbers, suitably located so as to connect with all the machinery by belt or shafting. The engine should be sufficient in size to do the work and should be of the style that is easy to handle—not complicated. When the work is at different places, then a portable engine is best, but extreme care should be taken to get an engine that is balanced and tested on a "swinging" balance, for if not it will vibrate too much and soon rack its frame. The engine should be mounted on an all steel truck, as wood soon decays. No tanks should be placed below the truck when liable to be damaged by obstructions, and the water used to cool should be pumped through the cylinders and spray cooled so as to avoid hauling a big tank of water around.

In buying engines for heavy work it pays to study their construction carefully. See that the engine cylinder is separate from bed to prevent replacing in case of accident. Bearings should always be phosphor bronze, as babbett or cheap metals are soft and wear. The valves should be vertical, as a horizontal valve wears on the stem and makes a leaky pocket. See that you get a good self-cleaning electric igniter, and that the spring adjustment can be taken up. The oiling system is also important. Only wipe feed oilers are satisfactory for the crank pin, as the oil cup is then stationary where you can see it and adjust it, and the oil is carried to the moving pin by a wiper, and is automatically fed.

The Witte Iron Works Co., of Kansas City, Mo., manufacturers of the Witte gas and gasoline engines, have been building farm engines in all the above styles for many years, and their success is entirely attributed to the fitness of their engines for farm, dairy and irrigation work. Their catalogue shows clearly the advantages and economy of their engines for the above class of work, and it would interest any one who anticipates the use of a gas or gasoline engine. The most conspicuous fact of their methods is the offer of thirty days trial to all reliable people. They also place a five-year guarantee on every engine, and while this is something unusual, it would go to show the confidence they have in their own goods, which is the first consideration of every buyer. To select what is needed for farm, dairy or irrigation work is, after all, a difficult task to the inexperienced, and to get the best results it is well to buy only well-known high grade machines from manufacturers who are in that particular line exclusively, and who will understand and give you just what is wanted.

The severe winter of 1904-05 leads many people to believe that the fruit crop of southern Missouri and northern Arkansas was damaged beyond hopes, but reports from the state horticulturist and others indicate that there will be at least one-fourth crop of Elberta peaches and full crop of seedling peaches, and if present indications hold, the largest yield of apples for several years. The list of farms in the fruit belt offered by Frank E. Lott, "The Land Man," of Kansas City, Mo., whose ad appears in this issue, gives the buyer an opportunity of selecting a profitable commercial orchard or a well located tract of fruit land, which when improved will be a paying investment. Mr. Lott has an extensive list, which he sends free of charge.

Farmers who are looking for a new location should not overlook some of the bargains offered by the Bruce Bargain Co., of Pleasant Hill, Mo., whose ad appears on page 27, of farm lands in that part of the state. Pleasant Hill is only 30 miles from Kansas City, and is one of the ideal farming sections of the State. The Bruce Bargain Co. of that city have some exceptional values in farm lands that will be sold at such prices that will sell them quickly. For full particulars relative to the list of farms address the Bruce Bargain Co., of Peasant Hill, Mo.

PAINT WITHOUT OIL

Remarkable Discovery that Cuts Down the Cost of Paint Seventy-five Per Cent.

A Free Trial Package is Mailed to Everyone Who Writes.

A. L. Rice, a prominent manufacturer of Adams, N. Y., has discovered a process of making a new kind of paint, without the use of oil. He calls it Powdrpaint. It comes to the consumer a dry powder, and all that is required is cold water to make a paint waterproof, fire-proof and as durable as oil paint. It adheres to any surface, wood, stone or brick, spreads and looks like oil paint and costs about one-fourth as much.

Write to Mr. A. L. Rice, manufacturer, 434 North st., Adams, N. Y., and he will send you a free trial package, also color card and full information showing you how you can save a good many dollars Write today.

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Why buy a buggy of unknown make? Our trade mark adds 25% to value of any buggy because it stands for quality with a reputation behind it. This is our genuine

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Guaranteed 2 Years, $35. Made to order, sold on **30 Days' Free Trial.** Ask for 192-page catalogue.

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One Million Guaranteed

Choice Apple and Peach trees to offer for spring. Also full line of all other kinds of Nursery Stock. Get our prices before placing your order. Wholesale catalogue now ready—send for copy.

TREE PROTECTORS at $5 per Thousand.

Send for descriptive circulars and testimonials.

Hart Pioneer Nurseries

Box E, Ft. Scott, Kas.

WANTED—TWO MEN'S

names and addresses interested in Fruit-Growing. Our book, **Success and Failure in Orchard Growing, by a Practical Orchardist,** sent free to anyone sending same.

Messick T. F. Co., Quincy, Ill.

WE CURE ECZEMA

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By-Laws for a Shipping Association

Within the past few weeks The Fruit-Grower has received a number of letters from different persons, asking how to organize a fruit-shipping association. It seems that everywhere there is a feeling that growers must co-operate in the marketing of their products, if they would secure the best returns. To help those who contemplate organizing associations, we present herewith some matter which was published in these columns more than two years ago, telling of the plan followed in Grand Junction, Colo. This association is one of the best that we know of, and its manager, Mr. John F. Moore, in response to a request, wrote The Fruit-Grower as follows:

"It is a very hard matter to write an article explaining how to make an association of growers work out profitably, but I will give you what information I can. In the first place I think the most important point is to have good management and to employ some one that the growers have implicit confidence in, and in order to get a manager and assistants and have them during the fruit season it is necessary to give them employment continuously. To do this we do a commission business in connection with our other business. Some other business could be run to about as good advantage as the commission business, but it happened that there was an opening here for that business, which we took up several years ago, and have worked it successfully. It is also very necessary to have a good board of directors in whom the growers have implicit confidence, and, while this board should see that the business is run properly, they should give the manager plenty of latitude, and if he is the proper party, allow him to handle the business just as though it were his own.

"At first our greatest trouble was to get the growers to put up a good pack. Some of them did not wish to pack properly, if they thought they would be able to take some advantages by wrong grading or loose pack, but there are very few of that class of people. Still other growers do not know how to pack their fruit until you teach them, but it requires only one or two seasons to get all of the growers lined up to put up a good honest pack. I find that some associations pro-rate their shipments weekly or daily. This, I think, is unnecessary and requires an enormous amount of bookkeeping. At times when we are shipping eight or ten cars a day we divide the largest growers' fruit into two or three cars and the smaller growers we generally put all in one car, and while it sometimes happens that a certain grower's fruit is in a car that brings the poorest returns, at other times it will be in the best car and at the end of the season it will average about the same. I find that the larger business that an association can do the better it can be handled, for the reason that you are able to go to more expense exploiting the markets. The great quantity of fruit that we now handle enables us to keep an agent in Denver to look after our shipments to that point alone. We also employ this man by the year, and in addition to this we have one of our own pepole to look after the shipments to the Missouri river points, and I find that this has been a great advantage to us."

We present herewith the by-laws of the Grand Junction association, for the benefit of those who wish to model an organization after the plan there followed:

By-Laws.

Article I.

Section 1. The board of directors provided for in the articles of incorporation of this association shall be elected annually, at the regular annual meeting of the stockholders as hereinafter provided, and shall hold their office until their successors are elected and qualified.

Sec. 2. Said directors shall be stockholders in said association and shall be fruit-growers in Grand valley, and shall be residents of Mesa county, Colorado.

Sec. 3. Any vacancy occurring in the board of directors shall be filled by the remaining members of the board.

Article II.

Section 1. The board of directors shall at their first regular meeting after their election, elect a president and a vice-president from among their number, who shall hold their offices for one year, and at said meeting the said board shall appoint a secretary, treasurer and manager, who shall be subject to removal at any time.

Sec. 2. The secretary, treasurer and manager shall each when required by the board, give bond in such sum and with such security as the directors may require, conditioned on the faithful performance of their duties, and to turn over to their successors in office all books, papers, vouchers, money, funds and property of whatever kind or nature belonging to the association, upon the expiration of their respective terms of office or upon their being removed therefrom, or with such other conditions as may be proper.

Sec. 3. The president shall preside at all meetings of the directors or stockholders. He shall sign as president all certificates of stock, and all other contracts and other instruments as may be proper.

Sec. 4. The vice-president shall in the absence of or disability of the president perform his duties.

Sec. 5. The treasurer shall safely keep all moneys belonging to the association and disburse the same under the direction of the board of directors.

Sec. 6. The manager shall have full charge of the commercial and shipping department of the association. He shall receive all money arising from the sale of fruits and other commodities handled by the association, and pay the same to the parties entitled thereto, and render a true account of the same.

Sec. 7. The secretary shall keep a record of the proceedings of meetings of the board of directors and also of the meetings of the stockholders. He shall also keep a book of blank certificates of stock, fill up and countersign all certificates issues ,and make the corresponding entries upon the marginal stub of each such certificate issued. He shall keep a stock ledger in due form, showing the number of shares issued to and transferred by any stockholder and date of issuance and transfer. He shall have charge of the corporate seal and affix the same to all instruments requiring a seal. He shall keep in the manner prescribed by the board of directors all accounts of the association, with its stockholders, in books provided for such purpose. He shall discharge such other duties as pertain to his office, and as may be prescribed by the board of directors.

Sec. 8. These by-laws may be amended by an affirmative vote of the majority of the stockholders or by the board of directors at any special meeting thereof called for that purpose, a notice of such proposed amendment being given in the call for such special meeting.

Article III.

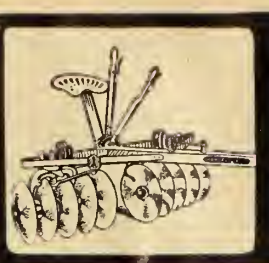
Section 1. The regular meetings of the board of directors shall be held at the office of the company on the first (1st) day of each month, except when the first day comes on Sunday or legal holiday, then on the following day.

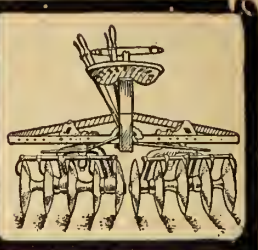
Special meetings of the board of directors may be called by the president, when he may deem it expedient and necessary, or by the secretary upon the request of any three members of said board.

Sec. 2. A majority of the board of directors shall constitute a quorum for the transaction of business, but a less number may adjourn from day to day upon giving notice to absent members of said board of such adjournment.

Sec. 3. The board of directors shall have power: First—To call special meetings of the stockholders whenever they deem it necessary, by publishing a notice of such meeting once a week for two weeks next preceding such meeting, in some newspaper published in Grand Junction, Colorado. Second—To appoint and remove at pleasure all employes and agents of the association, prescribe their duties where the same have not been prescribed by the by-laws of the association, fix their compensation, and when they deem it necessary to require security for the faithful performance of their respective duties. Third—To make such rules and regulations not inconsistent with the laws of the state of Colorado, the articles

A HANDY HARROW FOR FRUIT FARMERS





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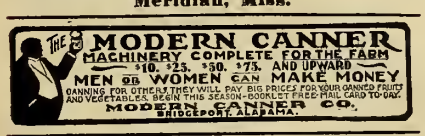

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of incorporation or the by-laws of the association, for the guidance of the officers and the management of the affairs of the association. Fourth—To require stockholders to pay a portion of their stock, whenever they may deem it necessary for the business of the association, and provide the time for payment and manner of collecting the same. Fifth—To forfeit and sell the stock of any delinquent stockholder, or so much of same as may be necessary to satisfy the unpaid portion of such stock. Sixth—To incur such indebtedness as they may deem necessary for carrying out the objects and purposes of the association, and to authorize the president and secretary to make the note of the association with which to raise money to pay such indebtedness.

Sec. 4. It shall be the duty of the board of directors: First—To be caused to be kept a complete record of all their meetings and acts, and also the proceedings of the stockholders, present full statements at the regular annual meetings of the stockholders showing in detail the assets and liabilities of the association, and the condition of its affairs in general. Second—To supervise all the acts of the officers and employes, require the secretary, treasurer and manager to keep full and accurate books of accounts of their respective business.

Article IV.

Section 1. The net earnings of the commercial and shipping departments shall remain in the hands of the manager, and shall constitute a working capital for said department. Provided, that if at any time in the judgment of the board of directors such fund should become greater than may be necessary to carry on the business of said departments, the said board may transfer a portion of said fund to the treasury of the association to be divided pro rata among the stockholders. Provided further, that the board of directors shall at their regular meetings in the month of January of each year, set apart a sufficient amount to pay ten per cent on the outstanding stock of the association.

Article V.

Section 1. The board of directors may whenever they shall deem it necessary, place on sale so much of the capital stock of the association as may be necessary to raise funds for the purpose of carrying out the objects and purposes of the organization of the association, such stock to be sold only upon the following conditions:

First—That not more than 100 shares thereof be sold to any one person, firm or association of persons.

Second—That such stock be sold only to fruit-growers in Grand valley.

Third—That such stock be sold at not less than par value of five (5) dollars per share.

Article VI.

Section 1. The annual meeting of the stockholders for the election of directors shall be held on the third (3) Saturday in January of each year, but if for any reason it should not be held on such day, it may be held on any day subsequent thereto as hereinafter provided.

Sec. 2. The board of directors shall be elected by the stockholders at the regular annual meeting. Public notice of the time and place of holding such annual meeting and election shall be published not less than ten days previous thereto, in some newspaper of general circulation printed in Grand Junction, and the said election shall be made by such of the stockholders as shall attend for that purpose, either in person or by proxy, provided a majority of the stock issued is represented. If a majority of the outstanding stock shall not be represented, such meeting may be adjourned by the stockholders present for a period not exceeding sixty days.

All elections shall be by ballot, and each stockholder shall be entitled to as many votes as he or she owns shares of stock in the said association; provided, however, that no person who is not himself a stockholder shall be allowed to represent by proxy any stockholder in said association.

The persons receiving the greatest number of votes shall be the directors for the ensuing year, and until their successors are elected and qualified.

Article VII.

Section 1. Certificates of stock may be transferred at any time by the holders thereof or by attorney in fact or legal representatives. Such transfer shall be made by indorsement on the certificate of stock and the surrender of the same; provided, such transfer shall not be valid until the same shall have been noted in the proper form on the books of the association.

The surrendered certificates shall be cancelled before a new certificate in lieu thereof shall be issued, and no transfer of any share of stock shall be valid or allowed upon the book of the association, upon which any deferred payments are due and unpaid, nor which has not been sold and transferred in accordance with the provisions of the by-laws of the association.

Sec. 2. Any stockholder desiring to dispose of his stock in said association shall deposit the same with the secretary of the association, and the same shall be sold by said secretary at not less than par for account of such stockholder, within sixty days from date of such deposit, under the restrictions of Sec. 1, Art. 5, of these by-laws; provided, that if the secretary shall not have sold such stock at the expiration of sixty days, then such stock may be returned to such stockholder, and be disposed of by him without restriction or limitation by the association."

Boulder, Colo., also has a good shipping association. The duties of the manager of that association are defined as follows:

"The general manager shall receive the fruit or vegetables from the growers and market them, according to his judgment, in the best and most expeditious manner possible.

"He shall do all the buying and selling of the association under the direction of the directors.

"He shall make payments on account from time to time to the growers for fruit delivered before the final settlement, and at the end of the fruit season turn over to the treasurer such profits as may have accumulated.

"He shall keep accurate accounts of all business transacted, and all his books shall be open to inspection at any time by the directors, to whom he shall make reports as requested by them. A suitable compensation, to be determined by the directors, shall be allowed him for his services. He shall give bond satisfactory to the directors for the faithful performance of his duties."

The rules governing the handling of fruit at Boulder are as follows:

"Section 1. Stockholders shall not be permitted to ship their fruit to points outside of the city of Boulder without permission of the general manager. Growers who are not stockholders may sell their fruit through the association subject to the same shipping rules as the stockholders, but shall not share in the dividends.

"Sec. 2. Each grower, whether stockholder or not, when delivering fruit to the association shall be required to have his or her name plainly stencilled or printed on each crate, box, basket or other package, for the purpose of identification.

"Sec. 3. All fruit delivered to the association for sale shall be carefully prepared for market and delivered in as fresh and good condition as possible, and the general manager shall have the right to refuse any fruit offered to him not in a marketable condition.

"Sec. 4. All fruit delivered to the association for sale shall be carefully examined by the general manager and classified as to kind and grade of same according to quality and condition.

"Sec. 5. All the fruit delivered to the association in any one day shall be treated as an entirety, subject to classification as to kind and grade, irrespective of who raised or delivered the same. Each grower who delivered a portion of said fruit shall be entitled to his or her share of the proceeds of the sale thereof, in proportion to the number of crates, boxes, baskets, etc., furnished by each grower and according to the classification of the kind and grade of fruit.

"Sec. 6. A certain proportion of each days' sales, not to exceed ten per cent of the total, shall be withheld from distribution by the general manager for the purpose of paying the expenses of the association, and dividends on the capital stock. The proportion to be so withheld shall be determined by the directors at the beginning of each year."

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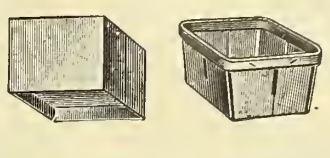

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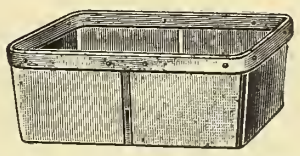

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WRITE for details of our free trial offer. Hawkeye Instruction Book Free with machine.

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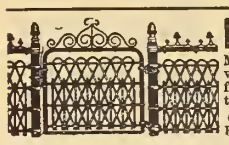

Many designs. Cheap as wood. 32 page Catalogue free. Special Prices to Cemeteries and Churches. Address

COILED SPRING FENCE CO.

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Shoo-Fly THE ANIMALS' FRIEND

Kills every fly it strikes, when either of our patent sprayers are used; keeps off the rest. **Shoo-Fly** is the original stock protector, absolutely harmless to man or beast. Cures all sores, Prevents contagious diseases, used by same dairymen since 1885, because it protects cows in pasture from all insect pests longer than any imitation. Half cent's worth saves 3 quarts milk and much flesh. **NO LICE** in poultry house or any place it is sprayed. If your dealer does not keep **Shoo-Fly** (made in Philadelphia, Pa.,) send $1.00 for Improved Three Tube Sprayer and enough **Shoo-Fly** to protect 200 cows. Name express office. Dollar returned if cows not protected. **Free Booklet** describes Compressed Air Sprayer, will spray 50 cows in few minutes.

SHOO-FLY MF'G. CO., 1025 Fairmount, Phila., Pa.

EDITOR knows from experience **Shoo-Fly** is O. K.

18 K. Fine

You know what that means—pure gold—no filling, no cheap material. Our two year guaranteed, sold on 30 days free trial,

Split Hickory Special $50

Top Buggy is 18-Karats fine in buggy making. Our trade-mark Split Hickory means 25% more value at same price others ask. Get something good. Free 192 page catalog tells all. Send for it.

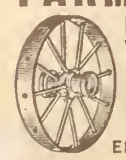
The Ohio Carriage Mfg. Co.

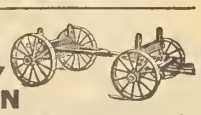
H. C. Phelps, Pres

Station 46, Cincinnati, Ohio

$50

FARMERS HANDY WAGON





Low steel wheels, wide tires, make loading and handling easier. We furnish **Steel Wheels** to fit any axle, to carry any load. Straight or staggered spokes. Catalogue free.

EMPIRE MFG. CO., Box 6 F Quincy, Ill.

Poultry Department

Over-Crowding Brooders.

Nearly all the manufacturers of brooders have to answer for the death of thousands of little chicks, through having represented the brooders as having greater capacity than they really have. Few brooders are large enough to safely accommodate the number of chicks claimed for them. The matter of over-crowding of brooders is deserving of the careful attention of everyone who uses one, for even if the chicks are not smothered in great numbers, they will develop much more rapidly and have greater vigor if not crowded. The chicken is a sociable bird, but they will do better in small colonies, both when they are chicks and when they get older. M. K. Boyer says he believes colonies of fifteen birds are better than larger colonies. Twenty-five fowls, he says, should be the extreme limit.

Small Farms for Poultry Keepers.

M. K. Boyer says that it is a mistake to purchase a large farm for a poultry farm. Five acres of land is sufficient for a profitable plant. Mr. Boyer says that of all the large and successful ventures he has visited—and many of them are advertised as occupying from thirty to one hundred acres—the actual part occupied by the poultry did not cover five acres. Where a man wishes to combine fruit or vegetable growing with poultry culture, it might be advisable to have a ten-acre farm, but not otherwise.

He also says it is a mistake to run an exclusive branch of the business. Exclusive broiler farms, exclusive market poultry plants, and exclusive egg ranches, are all more or less risky and never so profitable as general poultry farms. If the prices of one line are down there is strong possibility of another line being up, and when one line has struck a dull season, the other line helps out.

Cow Peas for Poultry.

This issue, with its articles on the growing of leguminous crops, would be incomplete without some reference to the importance of growing cow peas for the poultry. Cow peas, as is well known, make excellent feed. The peas are especially rich in protein, and make most excellent poultry food. The harvesting of the peas for seed is a slow process, as the work has generally been done by hand. But where the peas are to be fed to poultry, it is only necessary to cut the vines and put them away carefully after the hay is cured, to prevent the leaves from scattering. Then throw this hay in the scratching shed, and the poultry will find the peas, and the exercise will be good for them. Don't forget to try this for the poultry this season.

Feeding Young Chicks.

A writer in Inland Poultry Journal tells of the method of feeding young chicks which is practiced by a farmer's wife, who is successful in hatching and raising about 1,200 chicks a year. This woman does her hatching principally in April and May, using hens for the hatching. She gives each mother twenty chicks and keeps them in coops on grass sod. The first feed is given when the chicks are thirty-six to forty-eight hours old, and consists of steel-cut oats. This is sometimes called "pinhead" oats, the grain having been cut into bits about the size of a pinhead. This woman buys this oats and the first feed consists of this, mixed with small grit. This is their food three times a day for the first week, and they run at large on the grass. At the end of the first week broken corn is added, and by the beginning of the fourth week their grain consists wholly of whole wheat and broken corn, and from this on their food is kept before them in a trough that they cannot get into. They come up to their trough and fill up a dozen or more times a day, and they grow like weeds. They have an abundance of water, grit and grass all the time. This woman feeds no charcoal, condiments or meat. Some other growers feed a little beef meal in wet or chilly weather.

Largest Egg Farm in the World.

What is said to be the largest egg farm in the world is owned and managed by C. E. L. Hayward at Hancock, N. H. It has at this time over 8,400 hens, kept in 600 small houses, fourteen in each. The hens are never allowed outside their little eight-foot square coops, and are never fed green feed, contrary to the teaching of all other poultry feeders. Each hen gets a quarter of a pound per day of beef scraps, gluten, hominy feed, wheat, etc., with a little salt, ground shells, grit and charcoal, and plenty of clean water. An annual profit of $1.00 per hen is reported as proof of the practicability of his system.

Egg-Laying Contests.

Everyone will remember the egg-laying contests which have been conducted in Australia, and the interest which was manifested in them. There is a contest on now in Kansas. This contest began November 1, last, and will last a year, being conducted by the Kansas State Agricultural College. A pair of American Reds took the lead at the start, but the enthusiasts who have other breeds predict victory for their favorites in the end. Really, this is a most excellent move. It is all right to breed poultry so that the fowls will be marked properly; to so mate the fowls that they will have the right shape and the right color—but it is far more important that they shall be bred to produce results. That they shall "deliver the goods," as it were. These egg-laying contests should be encouraged, therefore, for they tend to increase egg production.

In connection with the Kansas contest, it may be said that the Kansas White Wyandotte Club has arranged for the registering of heavy-laying standard-bred White Wyandottes for its members, and soon the records of different fowls and strains will be a matter of record, as are the butter records of certain dairy cows. And why not? It seems to us that this is a move in the right direction.

Raising Large Turkeys.

Replying to the request of my turkey-raising friends, who often say to me "Lewis, how do you grow such large turkeys?" I will try to tell your readers how I care for my turkeys, both old and young. In the first place, I have spent a number of years with Bronze turkeys and know by experience that to grow large, shapely birds, one must have a good foundation to start with. Don't expect to set Bantam eggs and hatch and grow Plymouth Rocks or Brahmas. The same may be said of turkeys. Eggs from turkeys weighing not more than fifteen to thirty pounds won't hatch poults that will grow to twenty to twenty-five pounds for females and forty to fifty pounds for males.

In our breeding flock of turkeys we want them all standard weight and don't care how much more, provided they have the shape and color we want. Our turkeys have in this country usually commenced laying the latter part of March or the first of April. We let them roam at large, but watch them closely and gather their eggs to keep them from getting chilled. When I find a turkey hen broody, I bring her close to the house and make a nice nest and give her seventeen to nineteen eggs, and if possible, I set two chicken hens at the same time, giving them all 11 turkey eggs each. When poults begin to hatch we have our incubator warmed up and ready and watch the nests closely and take the little poults out of the nest as soon as hatched and some as soon as the

There's PROFIT in LATE CHICKS

Because the percentage of fertile eggs is much greater in April, May and June—that means *more chicks.*

Then again weather conditions are more natural—that means stronger, brighter, healthier chicks. Chicks that are hardy and vigorous—that *grow like weeds* and soon catch up with those hatched a month or two before.

16,000 Sure Hatch Incubators have been sold the last *four months* to be used for these *later chicks* and orders are *still coming.* Pretty good evidence that Poultry Raisers are waking up to where the *money lies,* isn't it?

The *Sure Hatch Incubator* is the best of its kind, and is the one *you* should have. It's made from *honest materials* clear through—is so *good* we can and do *Guarantee it for 5 years* and it is

Sold on 60 Days Trial

The *1905* Sure Hatches are *new* machines, conceived, designed, built, manufactured and sold *only* by the *Sure Hatch Incubator Company.* They have *exclusive features* that you can't get in any other incubator, for they're *patented.*

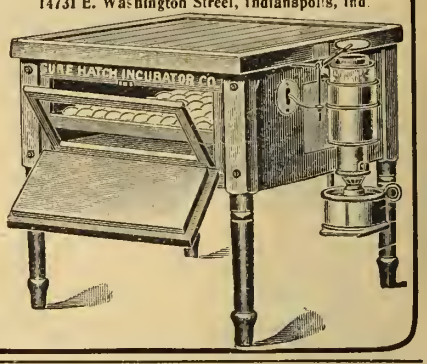
Special Prices if You Write NOW

For the next 90 days we will make you special prices. Write for *free catalogue* and learn about our *liberal offers for the summer.* Shipments made on the *same day order is received.*

Address nearest office.

SURE HATCH INCUBATOR CO. 4731 Clay Center, Neb.

14731 E. Washington Street, Indianapolis, Ind.



Poland Chinas Favorites

This breed of swine is a favorite breed with many raisers, because they stand close confinement better than some others. *Blooded Stock*—that excellent authority on cattle raising and breeding—gives every breed of swine, sheep and cattle a hearing. In this May issue of

Blooded Stock

Poland Chinas will be almost the sole subject considered. How to feed, raise, market, what buildings to provide; how to fight sickness and contagion—all will be thoroughly discussed by several prominent authorities, among them D. P. McCracken and J. A. Meissner. June Blooded Stock will be devoted exclusively to a first hand consideration of the profits and successes of sheep-raising. Subscribe! Get now the value of every number. 25c a year. You can afford it. Don't miss one.

BLOODED STOCK, Box 219, Oxford, Pa.

FREE PAINT SAMPLE OFFER

Cut this ad. out and mail to us, and we will send you **FREE,** by return mail, postpaid, our **Big, New Paint Color Sample Book.** This free book contains samples showing the **exact color** of every shade of ready mixed **House, Barn, Graphite-Creosote, Floor, Roof, Mineral, Enamel and Buggy Paint,** also everything in paint and painters' supplies, including **oils, leads, varnishes, dry colors, stains, brushes, sundries, etc.**

FREE BOOK HOW TO PAINT. With the color sample book we will also send you our **free book How to Paint,** showing by means of pictures and simple directions just how anyone without any previous experience can do a fine job, also just how much paint is required to cover a given space, how to order, how to select colors, kind of paint to buy, all valuable information, makes everything so plain that anyone can order and do the work successfully.

50c per gallon for highest grade **Seroco Weatherproof Mineral, Barn, Roof and Fence Paint.**

85c per gallon for highest grade ready mixed house paint, **Our Seroco,** our own special ready mixed paint for houses, for wood, brick, stone or iron surfaces, for finest inside finish or coarsest outside work, is sold under our **binding guarantee as the best paint made,** will cover double the surface, last twice as long, at one-half the cost of other paint, never cracks, peels or blisters, **guaranteed for five years,** and will look better at the end of five years than other paint will after one year. Testimonials from painters everywhere and color samples of Seroco in our free color sample book. **If you want to paint your house, barn or other buildings, don't fail to get these 2 BIG FREE PAINT BOOKS and SAVE ONE-HALF ON THE PAINT YOU NEED. Address,**

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4,000,000 Peach Trees

Tennessee Wholesale Nurseries

JUNE BUDS A SPECIALTY

No agents traveled, but sell direct to planters at wholesale prices. Absolutely free from disease and true to name. Write for catalogue and prices before placing your order elsewhere. We guarantee our stock to be true to name. Largest Peach Nursery in the World. Address

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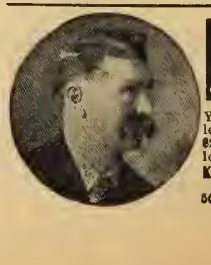
AUSTIN'S DEWBERRY

J. W. Austin, Pilot Point, Tex.

Original propagator and introducer. Headquarters for plants. Descriptive circular and treatise on dewberry culture, for your address on a postal card, if you please.



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We teach the business thoroughly in 6 weeks. You can make expenses while learning. Barbers make $15 to $25 weekly. Our FREE Catalog tells about it. Write today.

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F. C. Bridgford, Prop.,

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IF YOU ARE SICK

With any Form of Stomach Trouble, Dyspepsia, Nervous Prostration, Liver or Kidney Trouble, General Debility, Catarrh, Female Complaints, or Any Chronic Germ Disease

Write us at Once and We Will Send You by Return Mail a $1.00 Box of

KE-TONE ON 30 DAY'S FREE TRIAL

Pay if Satisfied. You Decide.

Ke-Tone is the world's greatest remedy, the most wonderful life-giver and germ destroyer known to science. We know that Ke-Tone cures every disease we claim for it, otherwise we could not afford to make this offer.

If afflicted you cannot afford to lose any time in getting this great remedy.

Ke-Tone will cure you, no matter how long standing your disease, unless you already have one foot in the grave, and all we ask is to be allowed to prove it. Ke-Tone is a marvelous combination of the very Elements of Life, those tissue-building, blood-making, bone-producing, germ-killing ingredients which, combined with oxygen in highly compressed form, actually drives disease out of the body. Ke-Tone, going wherever the blood goes, quickly kills all disease germs and then assists Nature to build up, purify and strengthen the whole system. Write for one $1.00 box of Ke-Tone and ask for our highly entertaining book, "Sickness and Health," which tells the Why and How of Ke-Tone. Don't send any money. You can do that after Ke-Tone has helped you. We want to help you and we believe you will be fair with us if we do help you. And remember you will not owe us one cent if you are not satisfied. Write today. Do it now, and we will mail you a full month's treatment with book and directions. Address The Ke-Tone Company, B 125 Gaff Building, Chicago, Ill.

Old Men
Middle-Aged Men
Young Men

Are You Weak, Worn Out, Discouraged and Unstrung?

If so, my Newly Discovered Philippine Remedy Will Quickly Restore You to Vigor and Strength. It is a Positive Cure for Weaknesses and Diseases Peculiar to Men.

TRY IT AT MY EXPENSE

There is a cure for every weak or worn-out man who will write to me for my new and Free combination treatment. I firmly guarantee to quickly and permanently bring you back the joy and comfort of manly strength. I care not who has failed to cure you, or what first caused the weakness; whether sickness, injury, excesses or

misuse. With this wonderful new remedy I rescue men from almost hopeless stages and restore them to vigor, potency and power so quickly and perfectly that the weakness never again returns. To prove that this is all true I will send to every suffering man who reads these lines a free treatment, sealed, with full directions how to use it. It costs you nothing to get this. It is free, absolutely free. I shall not ask or take pay for it, now or ever. Do not hesitate. All letters are strictly private. A cure is positively guaranteed if the disease is not advanced to the incurable stage of insanity, epilepsy, or consumption. If you need the remedy and want to be cured, write me today, and I will send the free treatment at once.

Dr. FREDERICK MAIN
Lock Box 644 JACKSON, MICH.

$10.00 Sweep Feed Grinder. | $14.00 Galvanized Steel Wind Mill.

We manufacture all sizes and styles. It will pay you to investigate. Write for catalog and price list.

CURRIE WIND MILL CO.,
Topeka, Kansas.

BEST FRUIT PAPER 10c
for 3 months. Stamps or silver.
NATIONAL FRUIT GROWER,
St. Joseph, Michigan.

eggs are pipped, placing them in the incubator to hatch and dry. This saves many a little turkey's life, as they are very helpless when young, and if left under the hens get trampled and killed. I leave them in the incubator 24 to 36 hours, then put them out in a nice dry coop with the turkey hen. Never try to raise turkeys with chicken hens and expect good results.

Now for the feed and care. We feed a variety of food, such as hard-boiled eggs, bread crumbs, onions chopped fine and also all the milk we can get. We let it sour and scald and make cheese. We use quite a lot of "pone," as I call it. We take corn meal and sift it to get the hull out; then mix about one-third amount of bran (heavy) with it. My wife bakes this, using milk, soda and salt to season, just the same as we would if we were going to eat it ourselves. I find this to be one of the very best feeds for young turkeys or chicks. When this bread gets a little dry, we use sweet milk to moisten it. I know of no feed they eat and relish more than this, and none that makes more growth.

We also use plenty of black pepper ground and mixed in the feed for little turkeys, and we think it a good tonic. A lady told me many years ago that the first feed she gave her little poults was to open their mouths and put one grain of black pepper in and make them swallow it. This I have never done, but I know that she was a successful turkey raiser. If you will follow something near my plan of feeding whole grain as soon as large enough to eat grain, such as wheat, give plenty of good sharp grit, watch for lice, as they are a little turkey's worst enemy; give plenty of range, and be careful to have them come home at night to roost, and I see no reason for not raising fine large turkeys, if your stock is right.—J. H. Lewis in Inland Poultry Journal.

One Acre for Poultry Food.

One of our readers has a one-acre field now in grass and weeds, that has not been cultivated for five years, says Rural New Yorker. He wants to put it in corn and root crops for poultry, sowing it to rye in the fall, to turn the chickens on to pasture. He wants to know how to proceed. What variety of corn would be best, what root crops would you suggest, and how much fertilizer ought to be used?

I would plow that ground as early as possible and thoroughly harrow with a disk or Acme harrow several times before planting the corn or root crops, and would sow broadcast and harrow it in the soil at least 600 pounds (and if the soil is not good 1,000 pounds) of good bone fertilizer. I know of no variety of corn better for poultry or anything else for that matter, especially on light ground, than Leaming. I have never found any kind of root crop that will equal beets or mangels, for poultry. The rye may be sown at the last cultivation of the corn, two bushels per acre, but instead of sowing rye I would sow Crimson clover, four quarts per acre. The only trouble with Crimson clover is it is not so sure to stand as rye, but it is much better both for the chickens and the ground if it gets a good start. For green feed for poultry up until hard freezing weather there is nothing that I can find that will equal Dwarf Essex rape, but of course it will not live through the winter like clover or rye.

Poultry Notes.

To keep the large body lice off of fowls, melt one pound of lard in an iron kettle and add one-fourth pound of powdered sulphur and a little strong decoction of tobacco, stirring the same until cool to prevent settling of the sulphur. This ointment rubbed under the wings once or twice will rid the birds of the large body lice as fast as they hatch out, says Dr. Geo. Benton of Michigan.

No one should think it necessary for one to have all the new-fangled poultry appliances that are advertised, nor is it necessary that one feed the different kinds of feed which some other poultry raisers use successfully. They perhaps feed certain things because they happen to have that certain food—but other persons succeed just as well with different foods. Keep the quarters clean, have plenty of clean, fresh water and grit—and any farm can supply an abundance of feed.

A Good Piano Catalogue.

The Fruit-Grower has received the catalogue of Wing & Son, New York, manufacturers of pianos, which is one of the most complete catalogues we have ever seen. This firm manufactures pianos and sells direct to the people, without the intervention of agents or middlemen. The catalogue, therefore, is very complete and tells all about the instruments, how they are made, etc. Perhaps the most interesting chapter of the catalogue is that which tells why pianos can be sold in this way so much cheaper than they can be purchased through retail dealers. The saving of the retailer's profits enables the purchaser to get his instrument for from $100 to $200 less than he would be compelled to pay a retailer for the same instrument. Of course, in dealing with an unknown firm there would be some risk; there would be danger that the instrument was not all that was claimed for it. But not so with Wing & Son, for the firm sends pianos on approval, so that the customer can see what he is buying. Not only so, but the firm has been in business since 1868, and stands behind every piano it sends out. Every instrument is sold on an absolutely safe guarantee. The firm agrees to make good at any time within twelve years any defect in tone, action, workmanship or material, either by repairing the piano at the purchaser's home, or at New York store or factory, by supplying new and perfect parts in place of broken or defective ones, or replacing piano with another of the same value. All expenses of these repairs, if there be any, are paid by the company.

With this method of doing business, and sending out the character of instruments it does, there is little wonder that the business of the firm has grown with wonderful strides through the years. This is the kind of business that lasts.

Wing & Son have an advertisement in this issue of The Fruit-Grower, and would be pleased to send a copy of their catalogue to any of our readers who apply for the same. This catalogue describes the various styles of instruments, and presents illustrations of many of them in natural colors. It is free to those who ask for same. Address Wing, 356-380 West Thirteenth st., New York, N. Y.

I suppose you get plenty of compliments for The Fruit-Grower, but possibly one from a man nearly eighty years old, and who has been growing fruit for nearly sixty years, will be acceptable. I am a subscriber to eighteen fruit and horticultural papers, and I will say that in all that list yours is one of the very best.—H. A. Terry, Crescent, Iowa.

RHEUMATISM

Wonderful New External Remedy Curing Thousands. Any Rheumatic Sufferer May Try It Without Cost.

Send Your Address and Get A Dollar's Worth FREE.

I have a sure, quick and lasting cure for Rheumatism. I cure it by means of Vibro Discs, a wonderful new appliance which is used exter-

nally and draws out the poison from every part of the system. It is the wonder of the age, and a godsend to Rheumatic sufferers. There is nothing like it, and nothing equal to it. It banishes pain as if by magic, and conquers this dread disease in all its cruel forms and stages. It is safe, simple and convenient for home use and roots out the acid venom so thoroughly that no relapse or fresh attack can occur. Prove these claims yourself by testing the remedy at my expense. I will send you, absolutely free, four of these Vibro Discs—

a full dollar's worth—if you simply send me your name and address. This is an absolute gift, and I shall neither ask nor accept pay for it now or in the future. Can you afford to continue in pain and misery when you can get this marvelous new and guaranteed treatment simply for the asking? Write me to-day and I will send you the treatment at once and with it an elegant illustrated book on Rheumatism, all free and prepaid. Don't send any money—not even a postage stamp—but send your name and address THIS VERY DAY.

PROF. S. M. WATSON, Dept. 84, Battle Creek, Mich.

SUPERFLUOUS HAIR

Dr. Rhodes' New Hair Remover

will instantly and permanently remove undesirable hair from the face, neck, etc. Price $1.00.

FREE TRIAL—We are not afraid to have you try this wonderful preparation, and you may do so FREE. If you will send us 10c to cover cost of postage and packing, we will send you a trial bottle; not a dollar bottle, of course, but sufficient to remove considerable hair and furnish a good test. Address

DR. A. Y. RHODES, CO., Lowell, Mass.

Wooden Veneer Tree Protectors

will protect your trees from rabbits, mice and borers; will also protect the trunks from sunscald. Can be left on throughout the year, and will last for years. A cheap, effective protection. The accompanying cut shows the protector as applied to a tree. This is the protection recommended by most of the horticultural societies, and millions of them are in use. We are headquarters for them. Write for prices.

Berry Boxes and Fruit Packages

We handle all kinds of packages, and received the Gold Medal at the Louisiana Purchase Exposition, 1904, for our exhibit. During the winter season low prices are made on boxes. Ask us about this. Don't wait until the rush is on, but send list of your wants early.

ST. LOUIS BASKET & BOX CO.
SECOND AND ARSENAL STREETS, ST. LOUIS, MO.

Kill the Woolly Aphis

This is the insect which works on the roots of apple trees, causing the death of thousands of trees yearly. Woolly Aphis can be readily destroyed by spreading tobacco dust about the roots of trees. In addition to killing the insects, tobacco dust is a valuable fertilizer—indeed, it is worth what it costs as a fertilizer alone.

WE SELL TOBACCO DUST IN ANY QUANTITY

Also Fertilizers of all kinds—THE ANCHOR BRAND
WRITE FOR PRICES

MAYER FERTILIZER & J. COMPANY
BULWER AND ADELADE AVENUES ST. LOUIS, MISSOURI

Are You Looking Ahead?

To the man looking ahead the Southwest has an urgent invitation. The opportunity is today when investment chances are good and homes can be purchased at from one-tenth to one-half the prices asked in the North and East.

To the Homeseeker.

Through the M. K. & T. Land Bureau, thousands of acres of rich farm lands (improved and unimproved), located along the line of the Missouri, Kansas & Texas R'y in Missouri, Kansas, Indian Territory, Oklahoma and Texas, are now offered for sale. The lands are especially adapted to the growth of corn, wheat, oats, fruits, vegetables, rice, cotton, sugar cane and for stock farming. The lands are well located as to markets, schools, etc.

To the Investor.

All over the Southwest, cities and towns are growing up, expanding, requiring more, demanding more, peopled by eager, pushing, wideawake citizens, who see the virtue of encouraging enterprises of every kind, the needfulness of getting more and better facilities, and more hands to develop the country.

The oil and gas fields of Kansas, Indian Territory and Oklahoma are practically new and offer wonderful opportunities for development along commercial lines.

BRIEFLY THE CONDITION IS THIS:

The Southwest is really in need of nothing save people. More men are wanted. In the Southwest are vast areas of unimproved land—land not yielding the crops of which it is capable. The same thing, in a different way, is true of the towns. Few lines of business are adequately represented. There are openings of all sorts—for mills and manufacturing plants, for small stores of all kinds, for banks, newspapers and lumber yards. Mechanics and professional men, both are in demand.

We are in possession of all sorts of information valuable alike to the investor and homeseeker. If you are interested, tell us what you want, how much you have to invest, and we will gladly furnish the information.

Write today for a copy of our book "Business Chances." It's free. Address

GEORGE MORTON,
General Passenger and Ticket Agent,
ST. LOUIS, MO.

HOMESEEKERS' EXCURSIONS

If you want to visit Oklahoma, New Mexico, Arizona, Texas or any of the other sections of the Southwest in which fruit-growing is becoming such an important industry, investigate the low rate made by the

Santa Fe Route

ON FIRST AND THIRD TUESDAYS OF EACH MONTH.

The Santa Fe reaches every part of the Southwest, and with its frequent and well equipped trains and splendid roadbed, is best prepared to serve the public. For circulars or any desired information, address

W. J. BLACK, G. P. A., Topeka, Kan.
L. O. STILES, C. P. & T. A.,
St. Joseph, Mo.

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FOR VEGETABLE

Crate and Basket Factory

Truck growers in the vicinity of important city on the Southern Railway want a plant for manufacturing crates and baskets, in which to ship vegetables and truck products.

Refer to File 5572. Address
M. V. RICHARDS,
Land & Ind. Agent, Southern Railway, Washington, D. C.

Gage's Tree Catalogue

Did you get it? You are unfortunate if you bought trees without consulting it. Send a postal and one will be mailed you. We grow a general line of fruit and forest trees, and small fruits.

GAGE COUNTY NURSERIES
J. A. Gage, Prop., Beatrice, Neb.

No More Blind Horses

For Specific Ophthalmia, Moon Blindness and other sore eyes, BARRY CO., Iowa City, Iowa, have a sure cure.

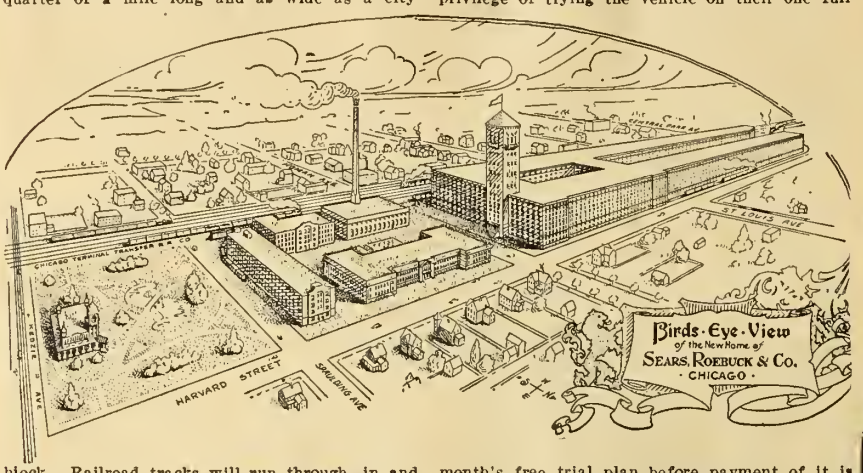
Ruptured
Send for our RADICAL CURE TRUSS
On Free Trial

"THE ONLY PERFECT TRUSS." Totally unlike anything made. You Pay When Satisfied. WE TAKE ALL RISK.
F. BUCHSTEIN CO., 608R 1st Ave. S., Minneapolis

A Great Mercantile Establishment.

Articles have appeared in all the Chicago daily papers recently telling of the wonderful establishment which will be built by Sears, Roebuck & Co., the great mail-order firm which has been doing business with Fruit-Grower readers for years. This firm has outgrown its old quarters, and will occupy new quarters as soon as they can be provided. The plans for the new establishment—or city, as it really is—contemplate the use of more than thirty acres of ground. This land has been bought, with adequate shipping facilities, and 500 men are now working night and day to erect the necessary buildings. When completed the institution will be a marvel of convenience, for the economical handling of the great volume of business transacted.

The accompanying illustration shows a birds-eye view of the plant as it will appear when completed. The main building will be one-quarter of a mile long and as wide as a city



block. Railroad tracks will run through, in and around the building, to facilitate the handling of merchandise, and electric elevators, pneumatic tubes, etc., will be provided to convey stocks from one point to another. Every express company entering Chicago will have an office in this building, to look after express shipments from this firm, and both telegraph companies will maintain offices devoted solely to the business of Sears, Roebuck & Co. This will give one an idea of the complete arrangements which will be made for handling the business.

Then there will be other buildings, such as Administration Building, Power Plant, Printing Plant, Advertising Building, etc. Altogether, the establishment will be one of the biggest things in the country, and an expenditure of about $4,000,000 will be necessary to erect the buildings, lay out the grounds, etc.

This enlargement and improvement of the business of the firm will mean that it will be better able to serve its customers, and able to sell goods even lower than ever before. But the work of the firm does not stop here, for Sears, Roebuck & Co. are mindful of the interests of their employes, as well as mindful of the interests of their customers. They have accordingly planned to build a club house for their thousands of employes, and even after the first property was bought they have added other purchases on which to erect homes for their employes. This consideration of the welfare of those who have helped to build up the wonderful business of the firm is to be commenced, and cannot fail to result in improved service in every department.

This new move on the part of Sears, Roebuck & Co. marks a long step forward in modern merchandising, and the work is watched with much interest by everyone who realizes the magnitude of the undertaking.

Booklet on Spraying.

The Hook-Hardie Company, of Hudson, Mich., are issuing a valuable little booklet on spraying which should be in the possession of every farmer and fruit-grower, who takes a pride in producing a high-grade of fruit and desires to increase the yield of his orchard.

This booklet contains much valuable information regarding the San Jose scale, codling moth and other pests which prove so disastrous to orchards, and shows the best methods to adopt in exterminating and preventing the growth of these ravaging insects. It contains many valuable formulas for spraying mixtures and quotes the best authority on when and how spraying should be conducted to attain the best results. By a careful study of this little book you will have no dificulty in recognizing at once any insect or disease that may have attacked your fruit and will have at hand a plan for an effective campaign against this pest. This booklet also contains a description of the many styles of spraying outfits manufactured by the Hook-Hardie Company.

"Hardie" spray pumps have been on the market for years and have sustained a high reputation for merit. Located in the heart of one of the finest fruit districts in the country, the Hook-Hardie Company have had every opportunity to study the necessary requirements of the fruit-grower. Important improvements on their spraying machinery have been added from time to time, and any one desiring to purchase an outfit, can place every confidence in these machines.

The Hook-Hardie Company manufacture every form of spraying device from hand to power sprayers, with all the necessary accessories. This season they are manufacturing a large power sprayer which is a decided improvement on any machine of this kind ever before placed on the market.

Write for their booklet at once. It costs you nothing, and will aid you in selecting an outfit suitable for your work. Address the Hook-Hardie Co., 107 Mechanic St., Hudson, Mich.

A Profitable Potato Sprayer.

To any of our readers interested in Spraying we would direct their attention to another page of this issue, where the advertisment of the H. L. Hurst Manufacturing Co., Canton, Ohio, appears, of their latest and greatest invention, a Combination 4-Row Potato and Orchard Sprayer.

From the many hundreds that the Company is annually selling, certainly proves it to be a "winner" with the farmers and truckers, everywhere. The great feature of this machine lies in the fact that it can be used for any and every kind of spraying (taking but a few minutes to change it from field to orchard use) but still selling at a low figure. Many growers of only two acres have been buying this machine and report (as does the Company) that it "pays for itself the first season, even on so small an acreage.

For potatoes, strawberries, orchards, all kinds of truck, cotton, tobacco, vineyards, etc., this machine is certainly invaluable. If used on only one of the above crops, it will pay for itself first season's use.

The Company, being established more than 12 years, manufacturers an exceedingly large line of all kinds of Spraying Machinery; the firm is also glad and is in position to answer any and all questions regarding spraying machines and spraying, as well as how to realize the greatest profits in fruit and potato culture.

A postal card directed to H. L. Hurst Manfg. Co., Dept. K., Canton, Ohio, inquiring about any point in the above matter will bring prompt and explicit information regarding profitable potato raising.

NEW PLAN FOR SELLING BUGGIES.

The Model Carriage & Harness Co. Makes a Remarkable Advertising Offer.

Every subscriber of this paper should read the new, remarkable offer of The Model Carriage & Harness Co., 115 W. Sixth St., Cincinnati, Ohio.

They offer to send any vehicle of their manufacture to any reader of this paper on a $1.00 good faith deposit, giving the privilege of a thorough inspection and if satisfactory, the privilege of trying the vehicle on their one full month's free trial plan before payment of it is sent to them. This special offer is good for a limited time only and anyone desiring to take advantage of the fairest and most liberal selling plan ever offered by any carriage manufacturer, would do well to write them at once for their complete 1905 Catalogue, which shows buggies from $23.50 up to their great leader buggy at $42.50; driving wagons at equally low prices, all kinds of surreys, spring wagons and light pleasure vehicles. If you want to be there and get in on the ground floor and have your order shipped promptly, we would suggest your writing them at once, sending $1.00 and have them send you their catalogue. If you do not find the kind of a buggy or vehicle you are looking for in their catalogue they will refund your $1.00 to you.

By sending $1.00 now you will get your name on their order book in advance of a great many others who will order later, and in this way insure prompt shipment.

The Model Carriage and Harness Co. are an old and well established carriage manufacturing concern and are selling the entire output of their large factory direct to the consumer at wholesale prices. They are not only making this wonderful, liberal offer, but are sending out with all of their Model Vehicles a two-year written guarantee, signed by an officer of their company, protecting the purchaser fully for two years from date of sale on any defective material or workmanship in any of their vehicles.

Write for their catalogue today. They will send it to you free of charge, postage prepaid, together with the full details of this liberal new plan for selling vehicles and harness.

Want More Black Ben.

St. Louis, Mo., April 22, 1905.

Messrs Stark Bros., Lonisiana, Mo.:

Gentlemen:—We beg to advise you that the Black Ben Davis we received from you are better than the Gano apples and better than the ordinary Ben Davis apples, in fact the best of the Ben Davis family we ever saw, not only in eating qualities, but the size and color and general appearance the texture made them eagerly sought for and we had owners from fancy fruit stands nearly breaking their necks to get some of them as long as we had a supply, and are only sorry our supply is now exhausted.

When you receive any more of that variety let us know, we want to make a deal with you.

Yours truly, GUNN FRUIT CO.

Warranted to Give Satisfaction.

Gombault's Caustic Balsam

Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for

Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable.

Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

ALL DRUGGISTS $1.00, 50¢, 25¢, PER CAN. OR SENT BY MAIL. PREPAID.

MOORE BROS "GALL POWDER"
MOORE BROS. V.S., ALBANY, N.Y.

NEWTON'S Heave, Cough, Distemper and Indigestion Cure. A veterinary specific for wind, throat and stomach troubles. *Strong recommends.* $1.00 per can, of dealers, or Exp. prepaid.
The Newton Remedy Co., Toledo, Ohio.

Grand Island Route

Short Line Between

St. Joseph *and* Kansas City

DOUBLE DAILY SERVICE, with new 80-foot Acetylene Gas Lighted Pullman chair cars (seats free) on night trains and Pullman high-back seat coaches on day trains, between Kansas City and St. Joseph, Mo.; Hiawatha, Seneca, Marysville, Kan.; Fairbury, Fairfield, Hastings and Grand Island, Neb.

Connections made at Kansas City for all points East, South and West

At Grand Island direct connections are made with Union Pacific fast trains for California and the Pacific Northwest.

S. M. ADSIT,
Gen'l Pass. Agent St. Joseph, Mo.

The Famous Split Hickory Special

We present to our readers a cut of one of the now WORLD FAMOUS BUGGIES. It is the SPLIT HICKORY SPECIAL, manufactured and sold direct to the user on thirty days free trial by the Ohio Carriage Manufacturing Co., of Cincinnati, Ohio.

Every reader of our paper is acquainted with the advertising by this Company, which for years has run in all the leading papers and magazines of the country.

Mr. H. C. Phelps, President of the Company writes us that many of his customers speak of their Fifty Dollar Split Hickory Special as the "President Roosevelt Buggy"—They say it is a "Square deal for every man."

Mr. Phelps also writes that many of our subscribers seem to get the impression that their Split Hickory Special is the only buggy they make. This impression is created by the fact that most of their advertising has been on this one special buggy.

In addition to this special vehicle they manufacture a full and complete line of all kinds of buggies for all purposes, and also, a complete line of harness.

Their $35.00 Marvel top buggy carries the Split Hickory name plate and it has a guarantee for two years. This member of the Split Hickory family is also sold on thirty days free trial and, for a low priced buggy, stands without a peer.

Mr Phelps also writes that they are having a big run on their $52.50 guaranteed solid Rubber Tire Split Hickory Hummer. This indicates that the farmers throughout the country appreciate all of the late improvements in pleasure vehicles.

The 192 page catalogue of The Ohio Carriage Manufacturing Company is a work of art. It tells of over one hundred styles of vehicles all Split Hickory and gives a complete line of Harness.

We advise our readers to send for this Catalogue, as it is free and contains much worth knowing about Standard Trade Mark vehicles.

In writing, address The Ohio Carriage Manufacturing Co., Station 46, Cincinnati, Ohio, H. C. PHELPS, President.

FruitFarms and Fruit Land for Sale

This department is for the benefit of Fruit Grower readers who wish to buy, sell or lease farm lands. All advertisements of this nature will be inserted for a charge of 2 cents per word, each initial and number to count as a word. No display type will be used in ads which are accepted at this reduced rate, and all charges must be paid in advance. The rate of 2 cents per word is for each insertion. Count the words when sending your advertisement, and the cost can be easily ascertained. THE FRUIT GROWER CO., St. Joseph, Mo.

A BARGAIN—For sale or rent. A fine fruit farm of 123 acres, in the famous Flathesd Valley of Montana. Farm fronts for nearly one-half mile on Flathead Lake, the largest and most beautiful lake in the Rocky Mountains. Stock and implements will be included with the place either if rented or sold. 1,700 apple, 850 cherry, 300 peach, apricot, plum and pear trees; 3½ acres in raspberries, 2 acres in strawberries, besides other small fruits of all kinds. The farm is well improved, having two good dwellings; one is a new modern house of 11 large rooms, just built, and wired for electric lights; the other a new house of three rooms. Good barn, ice house, large shop and woodhouse, etc. There is also a small new steam saw mill with a capacity of 4,500 feet per day. The orchards and small fruits are in bearing and the yield of apples this year will be 400 or 500 boxes. There will be probably 15,000 pounds of cherries, and 40,000 boxes of strawberries and raspberries. Fruit sells for high prices. Apples $1.50 per box, cherries ten cents per pound and raspberries ten cents a pint box. Stock and implements as follows: 3 horses, 4 cows, chickens, etc., two farm wagons, two buggies, sleds, plows, cultivators, etc. This farm if properly managed will bring an income of $3,000 or more every year. The location is perfectly healthy and we enjoy the finest climate of any state in the union. No irrigation is used in this valley, the rainfall is ample to produce crops without irrigation. The owner's reason for selling or renting this desirable property is that he is now an old man past 60 years of age and he can no longer handle the property, and for this reason he is willing to sell for a low price on good terms, or rent the place for a small cash rent of $550 a year, or sell the farm for only $10,500 on these terms, $5,000 cash and the balance could remain on mortgage for a number of years at 6 per cent interest net. Do not delay and let this opportunity pass you by. Address the owner, GEO. A. MULLENNAX, Somers, Montana.

FOR SALE—40-acre fruit farm, 2 miles from Olney, Ill.; 25 acres in good bearing apple trees, besides other fruit; near school and church; good 6-room house and cellar, new barn and out-buildings, all in first-class condition; plenty of good water. Price $2,800. W. A. WHEELER, Lock Box 299, Redlands, Cal.

FOR SALE—160 acres, all tillable land, 40 acres young thrifty orchard; modern improvements; near railroad; school house on farm. Would lease the fruit land, but prefer to sell whole. Price, $27.50 per acre. Farm paid 25 per cent cash on this amount last year. Address W. L. Bangh, Mt. Vernon, Mo.

LARGE FRUIT FARM VERY CHEAP—Only half mile from railroad station, 300 acres, all river bottom, every acre fine fruit land, (in fact I guarantee there is no better fruit land in Colorado) also potatoes, alfalfa or grain. Fine stock range adjacent to land, perpetual water right, all under fence. Now under cultivation 30 acres alfalfa, 20 acres potatoes, 1500 peach trees. Properly handled this farm can be made to pay 20 per cent on $40,000 within five years. Price $15.000, easy terms. Owner is engaged in other business and cannot give it the needed attention. Write or call on J. F. Moore, owner, Grand Junction, Colorado.

FOR SALE—To a practical fruit-grower who will assume charge, an undivided half interest in a thousand acre fruit farm. 800 cleared, seven houses, plenty outbuildings, 12,000 peach trees, 2,200 pear two years, 3,000 apple; one and one-half miles to county seat, depot and town of 2,500 people; health resort, mineral springs, best college town in state; more fruit to set, terms. F. Babcock, Fort Smith, Ark., or J. H. Ross, Searcy, Ark.

Finest Fruit Land in Southwest Arkansas—80 acres, all under fence, 50 acres in cultivation; good six-room house, good barn, small orchard; one and one-half miles from railroad. $1,500 cash takes it. Address Hyatt & Turner, Ozan, Ark.

FOR SALE.—Apple orchard, 160 acres. 100 acres set in apple trees, 8 to 12 years old; located in Barton County, Mo. For particulars inquire of C. C. Clemons & Co., Kansas City, Mo.

FOR SALE.—Bargains in Delaware land. Catalogue free. Jester & Masten, real estate brokers, Felton, Del.

FOR SALE.—Forty acres improved upland all now in cultivation, especially adapted to fruit, has four acres bearing apple trees, price twenty dollars per acre. Quarter section improved rich valley land, close to railroad, price thirty dollars. Also other lands for sale. Write to Arch. L. Sims, Mount Vernon, Missouri.

FOR SALE.—Creamery in good condition, at a bargain. Ideal location. J. P. Powell, Odessa, Missouri.

LANDS CHEAP.

Large bodies of land and ranches; timber land, fruit and truck farms in Kansas, Oklahoma, Texas, Old Mexico, Louisiana, Arkansas, Southern Missouri, Colorado, New Mexico and California. Tell me what you want and where you want it and how much money you will invest if suited and I will send you list of bargains of the kind you want in that locality. I also have small farms and ranches in all parts of said states. I am working above mentioned territory thoroughly. Write me and see how well and how promptly I will serve you. I have land at 35 cents to $35 per acre.

GEORGE W. MORRIS, LYNDON, KAN.

We are the largest dealers in real estate in Grand Valley, the famous peach, apple and pear growing section of Western Colorado. Orchards here 8 years old net the growers from $500 to $700 per acre. The climate is the best in the world and is a specific for lung and throat troubles and asthma. Write us for information. The Home Loan & Investment Co., 357 Main St., Grand Junction, Colo.

A GOOD PLACE TO LOCATE—On plateau of Cumberland Co., Tennessee, where fruit, corn and potatoes grow to perfection. No cyclones, no floods, no great storms of any kind; less wind than any place you ever lived in; no mosquitoes; perfect natural drainage; best freestone water; very healthy, delightful summers; can plow all winter; abundance of free range for stock. Land $3 to $10 per acre. Write A. E. Payne, Crossville, Tenn.

FRUIT, FARM and Grazing Lands in Arkansas, from $3 to $25 per acre. Fertile soil, healthful location, mild climate. No better land for price. Address **Charles H. Smythe, 506 American Bank Building, Kansas City, Mo.**

FOR SALE—I have a bargain in a fruit farm of 40 acres one mile from Guthrie, Okla., the capital city. Good reasons for selling. If you want a good farm write me. J. C. Jamison, Guthrie, Okla.

BIG MONEY

TO THE MAN WHO OWNS A PAYING ORCHARD.

Fruit lands and commercial orchards in Missouri and Arkansas are hard to beat. Here is a sample: 80 acres, Benton Co., Ark., ¾ mile railroad; 72 acres, 3, 4 and 5-year apple trees; all fenced in 6 fields; common buildings; good water; 140 cars apples shipped from this town last year. Price $4,000. No. 2—159 acres beautiful fruit land, 2 miles railroad town, Howell Co., Mo.; 3-room house; 20 acres cleared; 80 fenced; all fine fruit land; good water. Price $700. Timber will pay for land. Don't let this bargain get away.

Big list of farms, Mo., Kan., Ark., Ok. free for the asking. Up-to-date, finely bound pocket map, showing towns, etc., 10 cents, stamps or silver.

LOTT, "THE LAND MAN,"
127 W. 8th, Kansas City, Mo.

Choice Oregon Land

We have several tracts of choice land located in the center of the well-known Walla Walla valley fruit belt. Do not fail to see us on your way to the Lewis and Clark Fair. Parties traveling via Union Pacific change at Pendleton and an hour's ride brings you to Milton.

If you are interested in securing a home in a mild climate let us know a few days before you will be here, and will have hotel accommodations reserved for you, and will meet you at the train. Office across track from depot. Milton Fruit-Growers' Union, Milton, Ore.

BRUCE'S BARGAINS.

16 acres, within corporate limits of Pleasant Hill; 9 acres set to fruit, balance pasture; 7-room house; all sorts best quality small fruit; chicken yard; large shade trees; south front, choice location; fine neighborhood; for sale few days only, $1,750.

24 acres, within corporate limits Pleasant Hill; large 7-room house; good soil; spring and well water; can be had for $2,250.

150 acres, 3 miles of town on Kansas City road, 30 miles of Kansas City, fine soil; some timber; running water; the best value for the money in the county; can be had on terms to suit for $45 per acre.

200 acres; one house, 7 rooms; three smaller houses; some good timber; excellent all purpose farm, or well adapted for raising and feeding stock; within 1½ miles of good shipping station and only 40 miles of Kansas City; can be had, if sold at once, for $6,500, and desirable terms made if wanted. All fine fruit land.

Come over the Missouri Pacific to Pleasant Hill (24 passenger trains daily to this place), and save receipt for fare paid. Fare refunded if you buy.

Bruce Bargain Co., Pleasant Hill, Mo.

REED & EVANS

Room 202, Baker Blk., Springfield, Mo.

REAL ESTATE AGENTS

Our specialty is the best improved farms in Greene and adjoining counties.

Own a Farm—Don't Rent

BUY A HOME before the advancing price over-reaches your financial ability. If you are interested in imigrating to a healthful country where good fruit lands, farming lands and grass lands can be bought very reasonable—where you have the advantage of the very best railroad facilities—write to us. DO IT NOW.

Western Arkansas Home Seekers' Agency, Belleville, Ark.

Attention FARMERS and RANCHMEN

Are you looking for a home in a mild and beautiful climate where fruits, grains, grasses and vegetables grow and yield large returns; where the grazing season is long and the feeding season short; where the waters are pure and the soil rich? Then come to Marshfield, Webster Co., Mo., and let me show you. I have improved stock and grazing farms, ranch lands and fruit farms. Write and tell me what you want and I will send you full description with prices and terms.

FRANK M. HAMEL,
Marshfield, Webster County, Missouri.

Land for Fruit

TRUCK, STOCK RAISING AND GENERAL FARMING.

located on both sides of M. & O. R. R. in Alabama and Mississippi. Price from $2.50 to $6 per acre. Terms—On less than 160 acres, one-fourth cash, balance 1, 2 and 3 years. Larger tracts, one-fourth cash, balance in nine equal yearly payments. LAND SEEKERS' EXCURSIONS on 1st and 3d Tuesdays of each month. Write for ILLUSTRATED FOLDER and MAP, sent free.

Alabama Land & Development Co.
HY. FONDE, President
GEO. KILBORN, Sec'y
59 St. Francis St. Mobile, Ala.

VIRGINIA FARMS

AS LOW AS $5 PER ACRE WITH IMPROVEMENTS. Much land now being worked paid a profit greater than purchase price the first year. Long Summers, mild Winters. Best shipping facilities to great eastern markets at lowest rates. Best church, school and social advantages. For list of farms, rates, and what others have done write to-day to F. H. LABAUME, Agr. and Ind. Agt., Norfolk and Western Ry., Box 70 Roanoke, Va

FOR SALE OR TRADE. Farm of 120 acres, Ste. valley; good location. Also residence in county seat. Value of both, $3,000. Box 653, West Plains, Mo.

Why be Deaf? Hear me, and you can hear. For 25 cents will send a prescription that will help deafness more than all of the doctors. Simple and effective. M. E. Rodgers, Trenton, Tenn.

CASH

For your farm, ranch, home or business, no matter where located. If you wish a quick sale, send us description and price. If you want to buy, tell us your requirement. We have or can get what you want.

N. B. JOHNSON & CO.
520 Bank Commerce Building. KANSAS CITY MO

TRUCK AND FRUIT LANDS ALONG THE IRON MOUNTAIN ROUTE

IN ARKANSAS AND LOUISIANA HAVE PASSED THE EXPERIMENTAL STAGE, AND IT IS POSSIBLE FOR ONE TO PAY FOR HIS FARM IN ONE YEAR'S CROP AND STILL HAVE A RESERVE FUND TO CARRY HIM TO THE SUCCEEDING YEAR. $5 TO $10 PER ACRE IS THE PURCHASE PRICE. THE MAN OF SMALL MEANS SHOULD BUY NOW AND SECURE THE BENEFIT OF AN EXCELLENT INVESTMENT.

THIS IS THE RAILROAD WHICH CARRIES YOU TO INEXPENSIVE AND COMFORTABLE HOMES—

CLIMATE IDEAL.
FARMING AND STOCK RAISING THE YEAR AROUND.
4—TRAINS DAILY FROM ST. LOUIS—4

QUICK TIME, BEST SERVICE, SPECIAL HOMESEEKERS' RATES, AND FREE RECLINING CHAIR CARS.

THINK THE MATTER OVER, AND WRITE US FOR LITERATURE AND DETAILED INFORMATION.

H. C. TOWNSEND,
GENERAL PASSENGER AND TICKET AGENT,
ST. LOUIS, MISSOURI.

Are You Interested in the South?

DO YOU CARE TO KNOW OF THE MARVELOUS DEVELOPMENT NOW GOING ON IN

THE GREAT CENTRAL SOUTH?

OF INNUMERABLE OPPORTUNITIES FOR YOUNG MEN OR OLD ONES—TO GROW RICH?

Do you want to know about rich farming lands, fertile, well located, on a Trunk Line Railroad, which will produce two, three and four crops from the same field each year, and which can be purchased at very low prices and on easy terms? About stock raising where the extreme of winter feeding is but six (6) short weeks? Of places where truck growing and fruit raising yield enormous returns each year? Of land where you can live out of doors every day in the year? Of opportunities for establishing profitable manufacturing industries; of rich mineral locations, and s[illegible] business openings?

If you want to know the details of any or all of these write me. I will gladly advise you fully and truthfully.

G. A. PARK, General Immigration and Industrial Agent
LOUISVILLE & NASHVILLE RAILROAD CO.

Larger Berths In Sleeping Cars

The berths in the Compartment and in the Standard Sleepers on The Southwest Limited are wider, longer and higher than the berths in similar cars of other lines. All the cars on The Southwest Limited are owned and operated by the

Chicago, Milwaukee & St. Paul Railway

Consequently the equipment and the service are unequaled.

The Southwest Limited leaves Kansas City, Union Station, 5:55 p. m.; Grand Avenue Station, 6:07 p. m. Arrives Union Station, Chicago, 8:55 a. m. The following coupon, filled out and mailed today, will bring you complete information about your trip East.

G. L. COBB,
Southwestern Passenger Agent.
907 Main Street, Kansas City, Mo.

.....

Name .....

Address .....

City ..... State .....

Probable Destination .....

Excursion of Fruit Growers to Texas June 20

1904

EAST TEXAS SHIPMENTS OF FRUIT AND VEGETABLES IN CAR LOADS, VIA

COTTON BELT ROUTE

Potatoes	569 cars
Tomatoes	461 cars
Peaches	358 cars
Cantaloupes	50 cars
Watermelons	53 cars
Strawberries	30 cars
Cabbage	18 cars
Total	1,537 cars

PICKING SUSQUEHANNA PEACHES ON FARM OF F. B. GUINN, NEAR RUSK, CHEROKEE CO., TEXAS

The big annual event—a trip through the wonderful fruit and truck district of East Texas June 20. An opportunity to study conditions at the height of the harvest and shipping season—the right time to ***see results.*** Picking, packing and shipping peaches, plums, tomatoes, potatoes, etc. The whole process from the tree and vine to the refrigerator car. A week of sightseeing and study of the great orchards and truck farms of East Texas.

Extremely low rate for round-trip by special train from St. Louis. The big growers, officers of State horticultural societies, experiment station experts, editors of farm and fruit papers in the North will be in the party.

This is your chance to see the East Texas fruit and truck country under most favorable auspices and be in good company.

Write for copy of East Texas fruit booklet, itinerary and cost of trip, and full particulars, or fill out and mail coupon below.

COTTON BELT ROUTE

E. W. LaBEAUME
General Pass. & Tkt. Agt.
St. L., S. W. Ry.
St. Louis, Mo.

J. F. LEHANE
General Ft. & Pass. Agent
St. L., S. W. Ry of Tex
Tyler, Texas

E. W. LaBEAUME, G. P. & T. A. W. F. G.
St. Louis, Mo.

DEAR SIR.

Please mail me a copy of your FRUIT BOOKLET. I am interested in the East Texas country. Myself and.....others might be induced to join your June excursion.

My Name .....

My Town .....

County ..... State .....

FILL OUT, CUT OUT AND MAIL THIS COUPON TODAY

WESTERN THE FRUIT-GROWER

ST. JOSEPH, MISSOURI

AN ILLUSTRATED MONTHLY MAGAZINE FOR PROGRESSIVE AMERICAN FARMERS

Subscription Price 50 Cents a Year
Advertising Rate $2.80 PER INCH

Volume Sixteen | JUNE, 1905 | Number Six

Copyright, 1905, by the Fruit-Grower Co., St. Joseph, Mo.

IRRIGON, OREGON

IRRIGON is one of the newer irrigated sections of the Northwest.

IRRIGON is 179 miles east of Portland, Oregon, 160 miles west of Baker City, Oregon, and 220 miles southwest of Spokane, Wash.

IRRIGON is situated on the Columbia and Umatilla rivers, and on the main line of the O .R. & N. (the through line of the U. P.).

IRRIGON is but little over one year old, but has a population of over 500, good school building, church, stores, city waterworks, etc., etc., with over 100 pupils in daily attendance at one of the best schools in Oregon.

IRRIGON has more days of sunshine than any other point in the Northwest.

IRRIGON'S soil is ideal for fruit, vine and vegetable.

IRRIGON has the best market and shipping facilities of any town in Oregon, Washington or Idaho.

IRRIGON is able to ship strawberries, potatoes, melons, peaches and cherries fully two weeks ahead of any other section in the Northwest.

IRRIGON is the center of the irrigated lands of the Oregon Land & Water Company, embracing about 40,000 acres, and has one of the best irrigating systems in the West.

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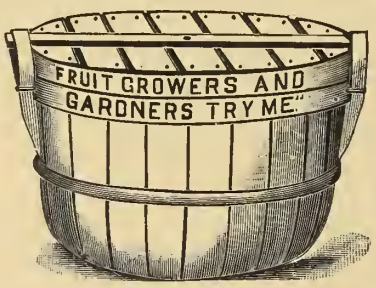

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BOOKLET NO. 1 describes fully the process of budding, grafting, tions, one can readily understand how this work is done after reading this booklet. It is by Prof. W. L. Howard of the University of Missouri, with photographs by E. H. Favor, of the same institution.

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The Western Fruit-Grower

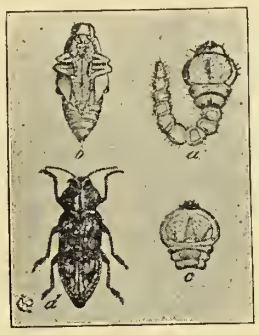
An Illustrated Monthly Magazine For Progressive American Farmers.

Volume Sixteen ST. JOSEPH, MISSOURI, JUNE, 1905. Number Six

Apple and Peach-Tree Borers

The fruit-grower is confronted by two serious problems: the protection of the tree against destructive insects in its infancy, and the production of fruit free from injury by disease and insect foes. Both fields present problems of vast importance. It is self-evident that the foundation of success is a healthy vigorous, robust tree. The first duty in growing an orchard is to produce trees uninjured by disease and insects. This requires care and an intimate knowledge of the diseases and insects that exert injurious effects upon growing trees. Among these there are two that deserve special attention, the borer and the woolly aphis. The former works upon the woody portions of the trunk, larger roots and frequently the lower limbs. The damage wrought by the woolly aphis is in dwarfing the roots. In this brief article the borer only will be considered, as there is probably no insect that works the extent of destruction as does this pest.

Each kind of tree has its own borer, though there are some that live in more than one kind of tree. The peach tree borer is not apt to be found in any other tree except the peach. The round headed apple tree borer is common in all seed fruits, while the flat-headed apple tree borer may be seen in both seed and stone fruits. No aged tree is immune, though a tree past five years of age that is vigorous is not apt to be attacked, and and if it is, does not suffer so severe damage as does the younger tree. The most serious damage is suffered while the tree is young, i. e., the first three years, because it is during this period that the foundation of health is established, just as the first year's treatment of a calf determines what kind of a steer it will make. There can be no more important problem for the fruit-grower to solve than that of the care of the young tree. And it is with a view of helping to solve the problem of borer control that we have undertaken to call the attention of fruit-growers to this timely subject.



Flat-Headed Apple-tree Borer (Chrysobothris femorate Fab.); a, larva; b, pupa; d, adult, natural size.

The first requisite of such a task is to thoroughly understand the life history and habits of this insect. Of those that more directly concern us are the borers affecting the apple and the peach. The borers that we most commonly find in the apple tree are the round-headed and the flat-headed apple tree borers.

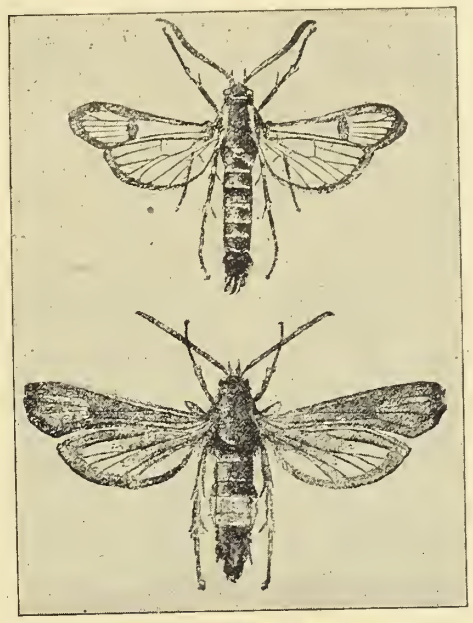
The round headed apple tree borer (Saperda Candida) is an insect that undergoes complete transformation, i. e., it exists in the three characteristic stages of insect life, the adult or imago; the larva or worm and the pupa or chrysalis. In the adult stage it is a flying beetle of an attractive appearance. It is about three-fourths to one inch long, one-fourth as wide as long, cylindrical, with long legs and antennae as compared with the flat head. Its belly is white, and its back a dull brown with two almost parallel whitish stripes running longitudinally from the head to its posterior. It is nocturnal, hiding away during the day under scales of bark, stones or rubbish of any kind. It comes to us from the forest. The female deposits eggs on the bark of the trunk in a peculiar way. She cuts a slit in the outer bark, then turning her ovipositor in a slanting direction thrusts it in between the layers of bark and there deposits the eggs an eighth to one-fourth inch from the slit. The egg hatches in about three weeks into a worm (larva borer). Probably three-fourths of the eggs are deposited in the month of June, though stragglers may be as early as April or as late as September. The adult lives but a week or two, having performed its function when it has mated, feeding moderately. The young larva makes its way inwards immediately, feeding for a short time upon the inner bark and sapwood. It then proceeds downward to the ground-level or below it. It remains in the tree three years. By the end of the first year it has attained a length of about one-third of an inch; the second spring, two-thirds of an inch, and its full growth of about one inch by the third spring, when it pupates in May—earlier or later, according to the latitude and season—coming out in about three weeks, a flying beetle, ready to feed and mate. Thus the life cycle is completed. The work of this borer is a long, tortuous burrow into the heartwood, which it may cross, recross or encircle. It is the most dangerous of all of the borers because it attacks by preference young trees, and because of its depth in the wood leaves no signs by which its presence can be known. Attacking the tree while in its infancy, it saps its life away, and dooms the tree to a life of invalidism, often to suffer premature death and always to disappoint the grower.

Round-Headed Apple-tree Borer (Saperda candida Fab.); a, larva; b, pupa; c, adult.

The flat-headed apple tree borer (chrysobothris Femorata), so called from the broad flat first thoracic segment of the larva, is from a parent the very opposite of the saperda. The adult is a short, stout bug, about half an inch to five-eighths long, half as wide, bearing a resemblance in size and shape to the familiar tumble bug. In color it has a copper colored belly, a greenish glossy back, the male having a very green head. The body is flattened. The legs and antennae are short and stout. The bug is a quick flyer and a ready runner. It is diurnal, being found on logs, stones or any exposed surface, basking in the hot sun. By preference it attacks debilitated or even dead trees, depositing the eggs on the bark or the trunk, some times as high or even above the fork, in some crack, crevice or other depression, often several eggs being found together. The eggs are deposited in the early summer, the same as the round-head, hatching in two to three weeks. The young larva enters the sapwood and there remains one year, making broad, irregular, flat excavations just under the bark. On the following spring it emerges, ready to fly about in search of food and a mate, after having spent about three weeks in the pupa or chrysalis stage while growing out legs and wings. This is the settler that usually settles the fate of an orchard previously infested by the round-heads or other destructive agent or debilitated by failure to give due cultivation.

The peach tree borer (Sannina exitiosa) is the great pest of the peach orchard. The adult is a handsome, day-flying moth, wasp-like in appearance, about three-fourths of an inch long. The female is larger than the male. Eggs are deposited on the bark of the trunk, usually near the ground, at any time during warm weather. But one generation a year exists. The young larva (borer) is a whitish, sixteen-legged worm. It usually descends below the ground surface to spend the winter. As the time of maturity approaches it ascends to or near the ground surface and enters the stage of pupation, encasing itself in a silken cocoon smeared with a gummy exudate from the tree, from which it emerges as a full-grown moth. Plum trees often suffer from this insect.

Under the head of borer control it may be said that this subject has been sadly neglected by those in a position to enjoy every facility for its study. At any rate, while we have witnessed great strides of advancement in the protection of growing fruit against injury by diseases and insects, we still see private and commercial orchards go to early destruction by the borer route. Among the methods suggested and tried, we have:



Adult Peach-tree Borer. Upper one is the male, the lower one the female.

1. Clean cultivation.
2. Mechanical devices.
3. Medicinal applications.

Under the head of clean cultivation there can be no doubt that thorough, continued stirring of the ground very materially aids in controlling this pest by increasing the vigor of the tree, and thus minimizing its damaging effect. It also aids by depriving the adult of hiding places in the orchard, thus exposing it to destruction by birds, toads and predaceous insects. The good derived from trap trees as a protection is very doubtful.

Mechanical casings and wrappings have not, in practice, given the protection hoped for. It is easy to understand that the opening at the top of the casing lets the adult insect in. Besides the shading of the bark about the base of the tree not only affords harbor for insects and fungous disease of the bark, but it interferes with nutrition in retarding the downward flow of nutrient sap through the swollen cambium or inner bark, dwarfing root growth. It is self-evident that wrappings tied on are injurious to the tree growth, because of their pressure effects during the growing season. It is presumed that every fruit-grower understands that the sap flowing upwards through the wood is not capable of sustaining tissue growth until it has been aerated in the leaves, where the sap constituents are split up by the action of the air into special organic materials, that are at once available for tissue building, and which is carried downwards through the inner bark or cambium, and that any binder around the trunk, whether it be strings, wires or elastic

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bark, cannot but retard healthy growth.

As to medicinal applications, the same principles must apply. No material like cement or other substance that dries on the bark, or that abstracts water from the bark, leaving it contracted and inelastic, is admissible.

In an article of this scope, we cannot go into detail, but we hope to direct the attention of fruit-growers to the subject of borer control, confident in the belief that an efficient method may be found, and thus one of the greatest barriers to orchard success may be removed.

DR. H. O. BEESON.

Noel, Mo.

Fighting the Peach Tree Borer.

In connection with the foregoing article describing the borers and their habits, a report from the South Carolina Experiment Station giving results of some experiments in fighting the peach tree borer, will be interesting. It is first necessary to know how to detect the presence of borers, and the Station says:

"The presence of the borer is easily detected by the mass of gum about the base of the tree. If there are many borers in the same tree, this gum will be found in large quantities and form a solid mass around the base of the tree. Badly infested trees usually have a sickly appearance, but it is not always the case; some trees may be very badly infested and yet present a healthy appearance, but it is only a question of a few years before the trees will be destroyed, or so weakened as to be of little or no value. The greatest care should be taken in examining the young trees when they are received from the nursery, and all borers destroyed before the trees are set out. When the trees are small is the time when the greatest damage is done. It is often the case that one and two-year-old trees are destroyed in one year by a single borer."

The plan followed by Prof. C. C. Newman, of the South Carolina Experiment Station in combating the peach tree borer was that of digging out the borers and applying a wash to the trunks of the trees. This wash is made as follows:

Quick lime, 20 pounds.
Whale oil soap, 3 pounds.
Sulphur, 4 pounds.
Paris green, one-fourth pound.
Water, 25 pounds.

"Dissolve the soap in three gallons of hot water. Make a thin paste of the sulphur and of the paris green and add to the soap solution. While the lime is being slaked in a half barrel, the mixture is poured over it, and the whole gradually diluted to twenty-five gallons. The wash is now ready for use, and should be applied while warm for best results. It can be rapidly applied with a stiff paint brush about three inches wide. This wash sticks well to the body of the trees and remains longer without cracking than any I have ever used. I have used this wash much stronger than is recommended above, and have never had any injurious effect from its use. The wash is very inexpensive and can be applied very rapidly. Twenty-five gallons is sufficient quantity to wash 325 eight-year-old trees. These trees were headed two feet high and will average six inches in diameter one foot from the ground."

Prof. Newman's plan of operation, now that the wash is ready, is as follows:

"About the middle of November the soil is removed from around the base of the trees down to the large roots, with a sharp pointed hoe and trowel; the trees should then be examined carefully, and if any borers are found they should be cut out and destroyed. A heavy pocket knife, a trowel and a piece of flexible wire are very convenient tools for this work. At this season of the year most of the borers will be about half grown, but some of all sizes will be found. After the borers have been dug out, the rough bark on the body of the tree is scraped off and the wash applied to the body and exposed roots, with an old paint brush. Care should be taken that every crevice in the bark is thoroughly covered with the wash. After the wash has been applied the soil is drawn back to the roots of the trees and banked six inches high around the base. This treatment is repeated in the spring, not later than the middle of March.

"Great care must be taken not to expose the base and roots of the trees any longer than necessary at this season of the year, as the moth will soon appear and begin to deposit her eggs. The trees should be 'wormed' as soon as the soil is removed, the wash applied and the soil returned to the roots as soon as practicable. This prevents the possibility of the eggs being deposited while the roots are exposed. This is an important point and should be closely observed. I have known growers to remove the soil from their trees in the summer and allow the roots to remain exposed and at the mercy of the moths for weeks at a time. The same care should be observed in the fall as in the spring, as the moth frequently appears late in November, if the weather remains warm for a few days at a time, as it often does during November in the South."

Prof. Newman wormed some trees on October 1, covering the roots at once; others were left with the roots exposed five days, and still others were left with roots exposed until March 5. On the latter date the three lots of four trees each were examined. The first contined four borers, the second lot contained twenty, and the third lot contained thirty-one. Three other lots of four trees each were wormed November 24. The roots of trees of one lot were covered at once, another lot were left exposed for five days after worming, and still a third lot were left exposed until March 5, following. On the latter date all trees were examined. The tree of the first lot contined two borers, those of the second lot contained three, and those of the third contained none. It should be said here, however, that this experiment was conducted in the South. Leaving the roots exposed all winter would be an exceedingly risky business in the North.

Leaving the roots exposed after worming had much the same effect of increasing the number of borers. For instance, trees which were wormed March 30 and roots left exposed for five days contained twenty-nine borers on November 24 following.

In regard to the value of the wash described, the report says:

"The following table will show the importance of using a good wash in connection with the worming process. Where the worming is done in the fall there are a great many very small borers and it is impossible to locate them all. At this stage they are near the surface and can be reached with the wash. The wash destroys the eggs and small borers just hatched, which are not destroyed by hand. There were ten trees in each plat. At the beginning of the test the trees were three years old and had, up to that time, received the same treatment:

	Worming process	Worming and wash process
Treatment was begun October 26, 1899		
Number of borers found March 10, 1900	5	2
Number of borers found October 27, 1900	25	5
Number of borers found March 13, 1901	7	3
Number of borers found October 29, 1901	17	4
Number of borers found March 11, 1902	18	1
Number of borers found October 27, 1902	20	2
Number of borers found March 14, 1903	4	0
Number of borers found Otcober 29, 1903	21	2
Total	117	19

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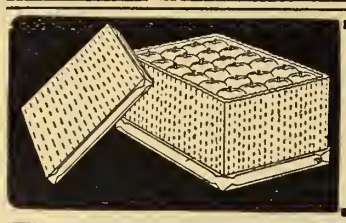

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A Good Early Apple.

One of the members of The Fruit-Grower Family, Marion Gregory, Huron, Ind., writes that he has an early apple which is very profitable, and yet which is not generally grown. This is called Prince's Royal, a Canadian apple, ripe July 1, which is a good shipper. He says he has shipped it to Jackson, Miss., by freight, and it arrived in good condition. This is a severe test for a summer apple. Mr. Gregory says he has been unable to find this apple in any of the nurseries, nor has he been able to get nurserymen to propagate it for him.

The Fruit-Grower is the most valuable paper of its kind.—Abraham Replogle, Hagerstown, Ind.

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TO THE EDITOR OF AMERICAN GARDENING:

In your issue of June 18, on page 399, I notice a good article on the Colorado Beetle, or Potato Bug. For the benefit of your numerous readers I would advise them to try **Hammond's Slug Shot.** I have used it here this season with excellent results, on Potatoes, Egg Plants, Cucumbers and Squash—for Potato Bugs, and also for Striped Beetles, and it is the best remedy I know of, simple and effective. I purchased two of the **Dusters** which he advertised in your paper, and they are very useful articles. The best time to dust the plants is early morning, as the substance adheres much better when the dew is on. A light dusting is sufficient, and woe betide the bugs or the larvae. Once they get a taste of it they shrivel up right away. GEORGE STANDEN, Gardener to Col. D. S. Lamont, Millbrook, N. Y., 1904.

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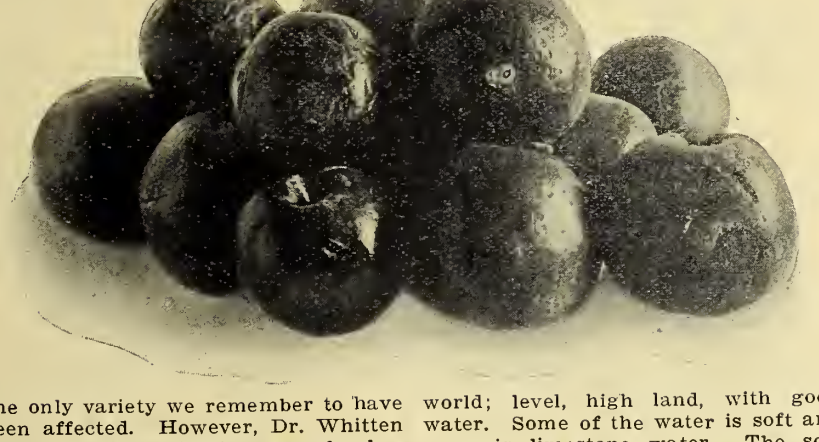
The Black Spot on the Jonathan Apple.

For several years the Jonathan apple has been affected in many sections of the West by a very small, depressed black spot, the skin of the apple having seemingly dried up at that point. At a meeting of the Missouri Horticultural Society several years ago some of the members discussed this spot, and it was suggested that it was bitter rot. This is not the case, however, for the spot does not become soft, nor does it enlarge, from our observation; the spots simply increase in number. The affected portion extends barely beneath the skin of the apple, and the injury is caused by the effect upon the appearance of the fruit. In peeling an affected apple, the spot seems to be cork-like, extending only a little below the surface. It has been our observation that the spot does not appear on apples in cold storage, but fruit stored in cellar will be attacked, and cold storage apples will be affected when taken from the low temperature.

Professor Judson of the Idaho Experiment Station sends us a photograph from which the accompanying illustration was made. This shows the typical spots, particularly on the apple at the upper right-hand portion of the illustration. One of the larger spots, near the center of the photograph, is a bruise, made by careless handling, and has no reference to the black spots under discussion. Prof. Judson reports that he has observed this only on the Jonathan, and this is



the only variety we remember to have seen affected. However, Dr. Whitten of the Missouri Station says he has observed this spot upon the Little Romanite and also on a few other varieties grown in this state. Dr. Whitten adds:

"What the spot is, I am unable to state. I at first took it to be a fungous disease. Careful examination of a number of these spots, however, shows the presence of no fungus whatever, except a tiny mould in a few of the spots. This mould, however, had every appearance of being a saprophite growing in the little indentures, because of the broken-down tissue there, and undoubtedly was not the fungus which caused the spots themselves. It simply found the spots a good place in which to grow after the spots were formed. I hope we shall be able the present year to find out what is the cause of those spots. At present, however, I know nothing about it. I do not think it is bitter rot. I look over the horticultural and agricultural publications, which are likely to cover any matter of this kind, pretty thoroughly, and there has not been, to my knowledge, anything published on this particular disease. It is one of the many problems which, so far as I am aware, still wants solution."

It should be said, in justice to those who have claimed this is caused by bitter rot spores, that they contend that if the Jonathan apples affected had been grown farther south, the disease would have spread and consumed the entire fruit. This seems hardly probable, however.

Who has anything to offer concernings these spots and their cause? We have seen them on sprayed fruit, as well as on unsprayed fruit. Prof. Judson says the Jonathan was the only variety affected, although he had thirty varieties in same cellar. The spot at least injures the appearance of Jonathan apples, and is worthy of careful investigation.

Appreciates the Advertisements.

I am not like the Iowa brother, who wanted the advertisements left out of The Fruit-Grower, and the paper published twice a month, at 50 cents a year. The Fruit-Grower, just as it is, is worth double its cost, and also the advertisements are a great benefit to its readers.

Yours for more and better fruit,
S. P. SMITH.

Aurora, Okla.

Notes from the Field.

Cowley County, Kansas, is situated in the southern part of the state, and is in the valley of the Arkansas and Walnut rivers.

The occupation of the people in the eastern part of the state is mostly stock raising, which is carried on very extensively, while in the western part the raising of wheat, rye, dots, barley and corn is the work of the people.

Fruit and berries are raised on a small scale, but more trees and plants are being set out every year. Small fruits, as blackberries, raspberries and grapes, seem to do well here, especially the latter.

There are plenty of railroads in this county, and as a result freight rates are cheaper than if there were only one railroad. At Winfield there are nine railroads and branch railroads. The main lines are the Frisco, Santa Fe and Missouri Pasific.

The soil is a sandy loam, and is some of the best land in the United States to raise sweet potatoes. The writer recently saw a man who was setting out twenty acres of sweet potatoes in one field.

Alfalfa does well in this county, and some years makes four crops in one season.

The climate here is the best in the world; level, high land, with good water. Some of the water is soft and some is limestone water. The soft water runs through sandstone, and the hard water through limestone.

The county is steadily growing in population and wealth. There are three hospitals and two colleges at Winfield.

For any information about land or farms or town property, address E. A. Benkendorf, Winfield, Kan.

W. H. G.,
Special Fruit-Grower Correspondent.

Big Peach Orchards in Texas.

If you were asked to name some of the large orchards of the world you would perhaps think of every other state in the union before Texas. Nine men out of ten, the whole country over, outside of Texas, would probably do the same thing. Yet there is an orchard of 12,500 acres at Morrill, Texas, on the Cotton Belt, south of Tyler. Just below the Morrill farm there is a peach orchard of 1,000 acres belonging to the Cherokee Orchard Co. Just below the Cherokee plant there is another orchard of 300 acres belonging to F. H. Britton of St. Louis. Fourteen thousand acres in three orchards ranks among the greatest in area in the world. And this in Texas! Eight years ago Texas was not known among fruit men or truck growers. Last year the state shipped out nearly 8,000 cars of fruit and vegetables, and this is only a fraction of what will be grown when the new industry in East Texas is fairly developed and the thousands of acres in young orchards are bearing.

The Morrill and Cherokee orchards are attracting a great deal of attention. June 20th the Cotton Belt will run an excursion for fruit men from St. Louis through the fruit section of East Texas, stopping one day at the Morrill orchard.

Here is praise from the old country: "I am well pleased with The Fruit-Grower. It is undoubtedly the best fruit paper in the United States. I can state this, because I am a subscriber for the others also.—Eugene Varga, Budapest, Hungary."

Brother Jonathan Books are Fine.

I received my Brother Jonathan books, and they are simply fine. I wish every subscriber, whether a professional fruit-grower or not, could read them.

ROBERT E. DOWNING.
Bowling Green, Mo.

Notes.

California ships carloads of rhubarb to Chicago, New York and Boston. The superior quality of the California product sells it above the local crop which is forced.

J. L. Jones, Columbia, Tenn., writes that he has a seedling peach, which has been tested for several years, and which stood 15 degrees below zero last winter, when Crawford and Elberta peaches were killed. The flesh is white, with beautiful red blush; quality good.

The Fruit-Grower is clean, and the advertisements are good. The type is large enough to be easily read. I would not any more think of stopping The Fruit-Grower from coming to my house than I would prevent one of my friends from coming in.—S. R. Moore, Koshkonong, Mo.

J. W. Beach of Arkansas tells us about two seedling peaches grown on the farm of David T. Michenor, Capps, Ark. One is called Capps; season, August; white freestone; larger, better keeper and better quality than Elberta; has a light crop of bloom this year, while no other variety near it has any bloom. The other is Mikado; season, October; yellow freestone; as large as Elberta and good quality.

A subscriber of The Fruit-Grower, in renewing his subscription, explains his failure to get a club of subscribers by saying: "I talk Fruit-Grower to everybody who is trying to grow fruit, but the heathens about me know but little and would not worry if they knew less; they spend more for whisky than for clothes." Where is that letter from? We will not say. But we certainly can understand why one who buys so much whisky wou d not want The Fruit-Grower. The paper is not published for such as that.

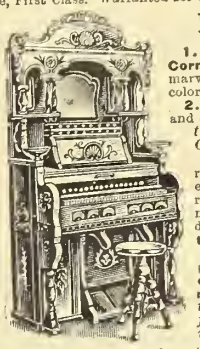
CORNISH PIANOS AND ORGANS

TWO YEARS' CREDIT IF NEEDED
Simple as A B C to furnish your home with a beautiful **High-Crado Cornish Piono or Organ,** on a plan of payment arranged to meet your convenience. Special terms. We can satisfy any honest person and save **one-half** what agents and dealers charge. Everybody has the benefit of our Factory prices and can buy on any terms in reason. We will ship any Piano or Organ on 30 days' trial. Freight paid —**no money in advanco.** Goods shipped at our risk and safe delivery guaranteed. Payment commences after one month's use in your own home. We do not make or sell **cheap, trashy goods,** but only the old reliable Cornish Pianos and Organs—High Grade, First Class. Warranted for twenty-five years.

$25 FIRST PAYMENT
Balance at your own convenience

Distance is no objection. We ship promptly everywhere. We have 250,000 satisfied patrons.

If you want to buy a first-class Piano or Organ at factory cost we invite you to write to us to-day for our remarkable collection of **aids to purchasers.**



FREE
1. **The Beautiful Cornish Album,** a marvel of printing, color and design.
2. A set of colored and embossed *Miniature Pianos and Organs.*
3. Our unique registered reference book—5,000 recent purchasers' names and addresses — **so mo that you know.**
4. Our plan to give every purchaser **96 FREE music lessons**—*the most successful tuition in the world.*

All these FREE if you write AT ONCE and mention this magazine.

REMEMBER!!! We make here in our own large and complete Factories in beautiful Northern New Jersey, the **World Ronowned** Cornish American Pianos and Organs. We employ hundreds of skilled mechanics, and we build and sell at First Cost direct to the general public the finest Pianos and Organs in America. *You can't get a Cornish* if you don't come to us direct, and if you do we insure your satisfaction by our iron-clad bond backed up by a *Million Dollars of Plant and Property. Don't think of buying elsewhere—Get the Cornish Plan First.*

$10 FIRST PAYMENT
Balance $5 a month or at your convenience

CORNISH CO. Washington, New Jersey
Established 50 Years

Crops are Sure

On Irrigated Lands, Properly Cultivated.
No Drought, No Floods, No Blizzards, No Cyclones.

WE OFFER YOU

Irrigated Lands near Bliss, Idaho, with perpetual water right, under what is known as the "Carey" laws.

These lands are very productive when watered, crops are sure, markets convenient, R. R. facilities at hand, and the price is

$10.50 Per Acre, on Easy Payments.

Every phase of our proposition, from the beginning of canal construction to the deeding of the land to you, is under the control and supervision of the State Board of Land Commissioners of Idaho.

This Insures You an Absolutely Square Deal.

The source of water supply, the number of acres allowed to be sold under any one canal, the price of water right, the terms of payment, your control of the irrigation works, all these are fixed by the State Board or are subject to its approval. This makes our lands

A Gilt Edge Inbestment.

Why buy or rent a $50.00 per acre farm and take chances on a crop when one-third of that sum will buy a farm where **returns** are **sure?**

Young Farmer, This is Your Chance.

Such opportunities will not often be repeated. The supply of such lands is limited and the demand is increasing. This means higher prices soon. Do not delay. Write today for free circular giving full details.

OUR STANDING
is Indicated by the Following Endorsement:

Belleville, Kan., May 10, 1905.—This is to certify that we are personally acquainted with Beecher & Beecher and know them to be honest, reliable men who can be depended up to carry out any agreement into which they may enter.

H. B. SWANSON, County Treasurer.
F. M. JOHNSON, President Belleville State Bank
J. P. ANGLE, Cashier National Bank
W. T. DILLON, Judge District Court
F. N. WOODWARD, Ex-County Clerk
R. B. WARD, Ex-State Senator.

Inland Empire Colonizing Company
Beecher & Beecher, General Agents, Bellebille, Kan.

What's the Matter With Manure Spreaders?

Under this title we asked, in our May issue, why fruit farmers are not interested in manure spreaders. This was occasioned by a letter we had from a manufacturer who had advertised in our columns, and who made few sales. He said fruit farmers did not use manure; he knew this, because they did not see minterested in manure spreaders. Now, we knew that fruit farmers do use manure, even though they do not use the spreaders, and we published the article referred to, in a desire to find why our readers are not interested in the manure spreaders. Some of our readers have responded, and we present their views herewith.

The first reply was from E. J. Walker, Sheridan, Ind., who says:

"You ask why the advertisement of manure spreaders has brought no results to the advertiser. Speaking for myself only, I can give one good reason. We haul our manure four miles, and could not afford to use an implement which restricts the loading capacity to the extent that the manure spreaders do. We work hard from dawn until dark in the winter months, to make two loads per day, and they must be big loads to make it pay. Our bed for hauling manure is 14 feet long, 5½ feet wide, and 1 foot high; in the center we pile nearly four feet high. I have yet to see the manure spreader which will haul that load. You can say to the manufacturer that economy in cost of carriage is the keynote. I could not afford to use one of the machines as a gift, under the conditions given above."

That's a good point Mr. Walker brings up, and James W. Carver, Greencastle, Ind., brings up the same point in his letter, as follows:

"I use 600 to 700 loads of manure every year, hauling it from two to three miles, scattering it on eighty acres of land; 20 acres in 15-year-old orchard, 20 3-year-old orchard, balance used for farming and gardening. My objections to the manure spreaders are:

"First—They are too high in price.

"Second—To take the spreader to haul the manure, my objection would be that it would not hold enough, and it would be harder for the team to haul.

"Third—The spreader cannot put manure under low-headed trees.

"Fourth—To haul manure to the farm, and then transfer it to a spreader would be a waste of time. The Kemp front wheels are too low and the coupling too long for it to be a competitor of our 4½-inch tire wagons. Fruit men do not create a great deal of stable litter themselves, and need something different from the common spreader."

H. C. Dillman, Chariton, Iowa, is another who uses the low wide-tire wagons. Note what he says:

"I think the advertisements of manure spreaders are read, but the price is so high that the average farmer cannot afford to buy one. In the first place, it requires the same labor to load one that it does to load an ordinary wagon, and the only gain would be in the unloading and in getting the manure spread more evenly. The manure spreader would be used only from ten to twenty days a year, and it would require a shed to stand in when not in use. Farmers are using more low wagons, with wide tires, which makes the hauling of manure easier than with a high-wheel wagon. Get a manure spreader that can be attached to a low-down wagon, at reasonable cost, one that the smaller farmer can afford to purchase, and the advertisements will be answered."

There is no doubt as to where Brother Dillman stands on this subject. L. C. Bennett, Carlisle, Ark., writes along the same line, and says:

"More hard work is required to load a wagon with manure than to unload it, and we farmers are looking for labor-saving machinery. The man who will place on the market an economical, successful manure loader will confer a greater benefit than the man who has produced a manure spreader. A spreader is not a handy machine to use among the trees of an orchard; besides, it makes a heavy load for a team, and will not work well when the manure is frozen, nor does it place the manure in the places where it will do the most good."

Fay King, Rolla, Mo., is another who thinks the spreaders cost too much to allow a fruit farmer to buy one, to use only a short time each year. He writes:

"I think one reason why fruit farmers do not buy manure spreaders is that the latter are too high-priced for the average farmer. I have a farm of 160 acres, about 100 in cultivation. I make every pound of manure that I possibly can, by converting all straw into manure, by using for bedding in the stables, etc. I bring the cattle in at night and pen them about the straw stacks, and I have thus been able to make a good deal of the very best manure. With one team and two men I am able to haul out all the manure I can get in about two weeks, one week in the spring and one week in the fall. By using a little extra care I am able to get this manure on the ground so that it brings the desired results, and I have not $125 tied up in a machine to be in the way for the balance of the year, nor am I required to furnish shed room for it. If I could use a spreader half the time, then I think it would pay to buy one."

Fred Hatcher, Fulton, Mo., is another who thinks they are too high in price. He says:

"The objection is that, like most things on which there is a patent, the spreaders are too high in price; we are asked to pay about a third more than they are worth. I was asked to pay $145 for one today in Fulton. I have wanted a spreader for several years, and several others have told me they would like to buy one, too, but they are too high. If manufacturers could sell them lower, at a fair profit, I think they would sell hundreds where they now sell one."

Here is a man who has bought one, W. E. Matkin, Farmington, Mo., and he makes report as follows:

"I purchased a Success Manure Spreader about three months ago, through our agents here, and I am more than pleased with it. I have only 50 acres here in the suburbs of our little city, but I don't see how I have gotten along this long without a manure spreader. The first I knew of the Success manure spreader was from reading the advertisement in The Fruit-Grower."

These letters show how some of our readers view the matter. We feel that our contention is maintained: That our readers do use barnyard manure—all of it they can get. From these letters it would seem that, for one reason or another, these farmers have not been convinced that a manure spreader can be economically used by them, and therefore they have not purchased the same. The matter will be referred to the manufacturers, to see what they have to say upon the subject.

The Small Fruit Prizes.

Announcement should have been made last month of the awards of prizes for small fruits articles in the April number, but the matter was overlooked. The prizes were awarded as follows:

First prize — Lowell Roudebush, Owensville, Ohio.

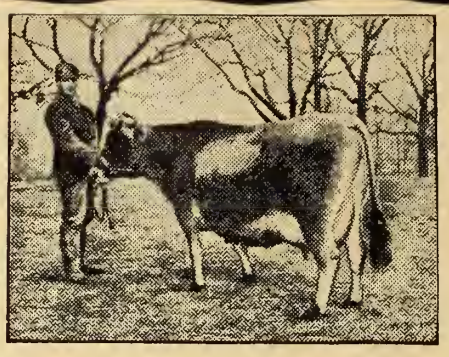
Second prize—D. A. Rupp, Sidney, Iowa.

Third prize—Aubrey G. Zinn, Phillippi, W. Va.

Checks have been mailed to these persons. The Fruit-Grower wishes to thank its readers at this time for their co-operation in making these special numbers a success. Next year we shall ask them again for their experience. But it will be necessary to have some experience out of the ordinary to justify our using the space. Next year, in the Gardening number, for instance, we will want reports of experience which are out of the beaten path, and the same way with small fruits. Let us keep account, therefore, of our work this season, so that we shall be able to report next year.

In its experiments with potatoes the Minnesota Experiment Station uses a large piece for seed, usually containing two or three eyes; plant sixteen inches apart, in rows thirty inches apart and cover four inches deep.

I believe The Fruit-Grower is the best horticultural publication in the United States today, and I have read nearly all of them. I have no intention of discontinuing it.—A. H. Hyze, Richland, Iowa.



The World's Champion

"LORETTA D"
No. 141708

This beautiful Jersey Cow was owned and entered by F. H. Scribner, Rosendale, Wis., at the St. Louis Exhibition in the Dairy Cow demonstration for the "Most Economic Production of Butter," and also for the "Most Economic Production of Milk," and won the **Championship of the World** in both points over all breeds competing.
Read what her owner says about Cream Separators:

"Rosendale, Wis., March 8, 1905.

"I am pleased to be able to say to you that I have used the United States Cream Separator for more than ten years. I used the first one for several years, and later exchanged it for a larger one of the latest styles. I am satisfied that the U. S. Separator is the best separator for farm purposes and that its wearing qualities are of the best, and cheerfully recommend the U. S. Cream Separator to anyone intending to purchase a Separator for its durability, simplicity and construction. It is a clean skimmer and easily cared for. We have used our separator twice a day and skimmed the milk from 30 cows and it never failed to do the work which it was required to do. To all appearances it will last a good many years to come." "F. H. SCRIBNER."

The U. S. SEPARATOR holds the WORLD'S RECORD for cleanest skimming.

VERMONT FARM MACHINE CO., Bellows Falls, Vt.

Distributing Warehouses at Chicago, Minneapolis, Omaha, La Crosse, Wis., Sioux City, Ia., Kansas City, Mo., Salt Lake City, Utah, San Francisco, Cal., Portland, Ore., Buffalo, N. Y., Portland, Me., Montreal and Sherbrooke, Que., Hamilton, Ont., Winnipeg, Calgary, and Vancouver.

402 ADDRESS ALL LETTERS TO BELLOWS FALLS, VT

$21.00 PRICE EXPLAINED

$21.00 TO $23.00 TOP BUGGIES, similar to one illustrated, HAVE BEEN WIDELY ADVERTISED, also ROAD WAGONS at $14.00 to $17.00, SURREYS at $34.00 to $38.00.

HOW BUGGIES can be offered at these prices and why we can sell buggies and all other vehicles at much lower prices than any other house is all fully explained in our FOUR BIG FREE VEHICLE CATALOGUES. Cut this ad. out and send to us and you will receive by return mail, Free, Postpaid, FOUR BIG VEHICLE CATALOGUES showing the most complete line of everything in Buggies, Road Wagons, Carts, Surreys, Phaetons, Carriages, Light and Heavy Wagons, Vehicles of all kinds, also everything in Harness, Saddles and Saddlery, all shown in large handsome half-tone illustrations, full descriptions and all priced at prices much lower than any other house can possibly make.

WITH THE FOUR FREE CATALOGUES you will receive the most astonishing Buggy Offer ever heard of, a new and astonishing proposition. How others can offer top buggies at $21.00 to $23.00 and why we can sell at much lower prices than all others will be fully explained. We will explain why we ship so as to make freight charges amount to next to nothing. We will explain why we are the only makers or dealers in the world that can ship buggies the day we receive your order. Our Free Trial Offer, Our Pay After Received Terms, Our Binding Guarantee are all explained when we send you the FOUR FREE CATALOGUES.

HAVE YOU ANY USE FOR A BUGGY? If you have, don't fail to cut this ad. out today and mail to us. If you can't use a Top Buggy at any price, call your neighbor's attention to this announcement. Don't buy any kind of a buggy until after you cut this ad. out and send to us and get the Four Big Free Catalogues, the most liberal offer, the very latest proposition, everything explained, all free for the asking. Write today. SEARS, ROEBUCK & CO., CHICAGO, ILLINOIS.

Berry Growers!

It Is to Your Advantage to Use Our White Spruce Berry Boxes

Box material used by California shippers. Last season we introduced this box on this market, and proved it to be superior to POPLAR, such as is generally used.

It Is Stronger, Has No Odor, Will Not Mould,
No Loss in Working and Costs No More

YOUR BERRIES WILL SELL FOR MORE IN THESE BOXES THAN IN THE COMMON POPLAR BOX. LET US SEND YOU SAMPLES & OUR PRICES, LOCAL OR CAR LOTS

Creamery Package Mfg. Co. Kansas City, Missouri.

GUARANTEED PAINT 40¢ A GALLON

BUY DIRECT FROM THE MANUFACTURER—save both wholesaler's and retailer's profit. We manufacture and guarantee all our paints.

Note these Prices on FRANK'S INDESTRUCTIBLE Red Barn Paint

50c per gal. in 1-gal. cans.
45c per gal. in 5-gal. buckets.
40c per gal. in 30-gal. ½ bbls.

Order at once, sending Postal Money Order, bank draft or registered letter. If you wish to see shades first, send for color card. Barn paint guaranteed to be of best minerals, pure linseed oil and high grade Japan. Will last as long as wood to which it is applied. MONEY BACK IF NOT SATISFACTORY. We make and guarantee paints for all purposes—house, carriage, wagon, floor, etc., lower than anybody else. Send for sample shades.

Reference—Continental National Bank, Chicago. Capital, $3,000,000.

CROSBY, FRANK & CO., - - 264 S. Clinton St., CHICAGO

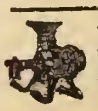
STARK FRUIT BOOK

44 pages 9 x 12 inches; 22 colored plates showing in natural colors 216 varieties of Fruit, with concise description, including season of ripening of each; 64 half-tone views of Nurseries, Orchards, Packing Houses, etc. Send 50 cts. and we will send the book post-paid, and Rebate Ticket permitting return of book by mail within 60 days and we refund 50 cts. Or, mail within 1 year, Rebate Ticket with $12 order for nursery stock and we credit $1.00 in part payment on order and you KEEP THE BOOK free. WE PAY THE FREIGHT.

WE PAY CASH weekly and want more home and traveling salesmen. OUTFIT FREE.—STARK BRO'S, Louisiana, Mo., Atlantic, Iowa, Fayetteville, Ark.

Sprague Canning Machinery Company

Sales Office 42 River Street CHICAGO, ILL.



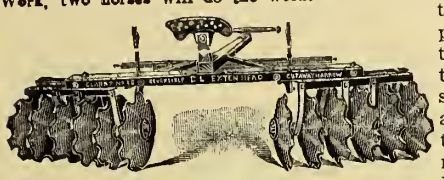
Make your own Fertilizer at small cost with Wilson's Phosphate Mills
From 1 to 40 H.P. Send for Catalogue.
Wilson Bros., Sole Mfrs., Easton, Pa.

ALUMINUM SPRAY NOZZLES
with hard bronze caps. Half the weight of brass; superior in every way. Price, 1 point, 90c; 2 point, $1.60; 3 point, $2.30; 4 point, $3.00. Ask for Booklet A.
Wallace Machinery Co., Champaign, Ill.

Use Cutaway Harrows IN THE Cultivation of Orchards

One Horse Reversible Extension Harrow.

For Small Fruits, Vineyards, Young Orchards, etc. A Bonanza to the small growers. For our two horse sizes for Orchard or Farm Work, two horses will do the work.



Reversible Extension.

Send for our Circulars and Prices. Leading Orchardists Use and Prefer Them. Simple to Set Up or Change.

The Cate Wagon

An Up-to-Date Wagon for the Up-to-Date Fruit-Grower. Saves Fruit and Time in handling.

BOTTOMLESS FRUIT BAG as used in California

Saves labor, hard work, can pick twice as much in same time. Write for circulars, etc.

Clark's Cutaway Orchard Harrows.

Repairs for Clark's Tools.

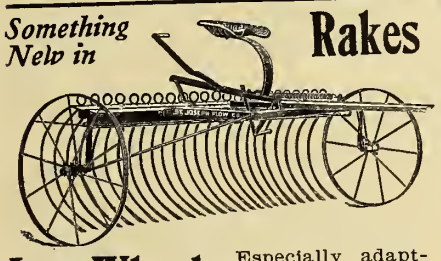
Farmers' Favorite Cider Presses, 4 gal. to 8 bbl.

Allen's Fruit Pickers. Fruit-Growers' Supplies.

E. G. MENDENHALL

Gen'l Agt., for the Central and Western States.
P. O. Box 300, Kinmundy, Ill.
Refer to Western Fruit-Grower by permission.

Something New in **Rakes**



Low Wheels Especially adapted to orchards. Will pass under trees better. Hay will not wind in them. They are stronger. Has spring lift. Write for prices.

ST. JOSEPH PLOW COMPANY,
St. Joseph, Mo.

Knox Nurseries
ONE YEAR CHERRY

We now have promise of another fine crop of One-Year Cherry for fall 1905. Those wishing to plant this fall will do well to get our prices. We can please the most critical with these trees.

We also have a fine lot of two-year Cherry, Peach, Pear and a general line of nursery stock. Do not fail to write us before you buy.

H. M. SIMPSON & SONS,
Vincennes, Indiana.

Badly Cheated

The man who buys poor shaving soap. Give your face its due. Use

WILLIAMS' SHAVING SOAP

Sold everywhere. Free trial sample for 2-cent stamp. Write for "The Shavers Guide and How to Dress Correctly."

The J. B. Williams Co., Glastonbury, Conn.

Clean Culture and Its Results.

Clean culture is the remedy for the greater part of the disease and insect troubles of the garden and orchard. It means clearing up refuse material as soon as it becomes such in its purpose having been served, and ridding the ground of all that does not pertain to the next use to which it is to be put. Especially is this necessary in the orchard and fruit garden where a kind succeeds itself and the new season is heir to last year's germs. Clean culture does not mean getting the refuse into tidy heaps and leaving it to rot and to serve meanwhile as breeding places, nor will carting these heaps to the cowyard or the manure pile do; but it means ridding the land of it all and by burning and with the least possible delay in the doing of it. Some would have it plowed under, but it is a safe rule that nothing that has borne a crop on the soil should be returned to that soil. If humus is wanted, grow it in another order of plants and between times, or find it in the litter of the manure from the stable or cowshed. If all cornstalks not eaten by April were burned, many insects wintering in them would be destroyed. So with potato tops. Plant lice winter over in very few inconspicuous eggs. If all melon, squash and pea vines were burned in early autumn these beginnings of new generations would be destroyed. Prof. Halsted tells us the anthracnose of garden vegetables and of tree fruits are interchangeable; thus, the sick beans or squash or spinach or melons will have their spores conveyed to tree fruits, and vice versa, and are thus a menace to the rest of the garden family. Burned, their virulence is at an end. A Washington expert was called to California to find a remedy for the disease threatening the asparagus industry, and gave it as "clean culture; burn the refuse." Dr. Halsted told New Jersey growers the same thing years before, and those who took the advice found it good.

When onion thrips were destroying the onion industry in Ohio, the growers, after trying all sorts of expedients to get rid of the pest, called on Prof. Webster, and were told to clear the fields of refuse and contiguous grass lands of their cover. They did so, and the trouble speedily ended.

But how to get the most from the burning, how to make, as Liebig has said, "The destruction of an existing generation the means for the production of a new one."

The residue of a bonfire is ashes, and a comparatively insignificant quantity when even a full grown tree is fed to the flames. But in soil operations, in considering tons for broad acres, very few realize the infinitesimal quantity of plant food which goes to the cubic foot or yard in which a plant is supposed to find its food. Take the filling from a hundred pounds of commercial fertilizer or the water and litter from a ton of horse manure, and the actual plant food spread over a rod square will be exceedingly thin. Some fifty years ago an authority figuring this matter down fine found that a cord of long manure, 1,400 pounds, would give about a cubic foot to a square rod; 170 barrels of liquid manure would be required to give one gill to a square root of an acre, while a cubic yard of night soil if evenly spread would manure an acre very well. A few years ago Mr. Stout astonished the Pennsylvania State Board of Agriculture by proving that the ordinary application of commercial fertilizer gave about an ounce to the square yard, about a pill box full to the plants occupying a foot of space. The ashes of garden refuse may therefore be worth considering.

De Saussier gives values in 100 parts alkalies and their salts; 6 parts and without counting the seeds as 80 parts alpalies and their salts; 6 parts lime and magnesia, 12 parts carbonates of earths and 2 parts silica, 61 per cent of which were soluble, that is, ready for use of roots when acted upon by soil moisture.

The twigs and trimmings in pruning and of windfalls seem too small to be worth saving, and yet such contain more plant food than does the heartwood.

But valuable as is the ash of vegetation, it is not to be compared, experience says, with the charcoal from the same source. Not that charcoal resolves itself into a lot of elements, but, in the power it has of condensing ammonia within its pores. De Saussier found it to absorb ninety times its volume of ammoniacal gas, "and which may be again separated by simply moistening it with water."

Also that "it can completely replace vegetable humus or mould. Its power of condensing gases within its pores, particularly carbonic acid, supplies plants exactly as does humus with an atmosphere of carbonic acid and air which is renewed as quickly as it is abstracted. It may be kept for centuries without change, not being subject to decomposition.

"Used as manure," says another authority, "charcoal has the advantage of being always retained in the soil, unless washed away, and will continue to give off the vapors, gases and saline solutions for an unlimited period. As proof of its durability and the long continuance of its action, there are the charcoal hearths of a half century or more ago, which in the better growth above them mark the places where they were, although the people who burned the coal are dead and nothing remains of their dwellings."

The question is whether to reduce the refuse to ashes or to charcoal.

To char it, set up a few sticks of dry wood around a handful of paper or shavings. Around this place the rubbish with chips near the center and greener stuff and twigs on the outside. Build up and around this with sawdust, sods and general vegetable refuse, leving a vent at the top. When the fire is well started, close the top and open holes about the sides, part way down, closing these presently and opening others still further down to draw down the fire. Finally, stop all holes and lay on more covering to keep out the air. In a few days the pile may be opened and the material be used. Any that is not perfectly charred, with that on the outside, can be made the basis of another burning. E. S. STARR.

Pennsylvania.

The Morgan Plum.

F. F. Nelson, DeQueen, Ark., sends a description of this plum, which he says originated in that section, having been grown from the seed of a California blue prune. The tree came up in the spring of 1899 and bore its first crop in July, 1901. The tree is now over twelve feet high and five inches in diameter, and has borne three crops. The fruit is large, averaging 8¾ inches in circumference; color yellow; quality delicious. Mr. Nelson says the plum has attracted much attention from those who have seen it.

BEST OF SEPARATORS ACTUALLY FREE OF COST.

This is really the fact in the purchase of a DE LAVAL CREAM SEPARATOR. Any reputable person may buy a DE LAVAL machine on such liberal terms that the machine actually pays for itself.

And it not only does this the first year, in which it saves its cost, but goes on doing it for fully twenty years to come. In the face of these facts buying trashy "cash-in-advance" separators, or any other than the best, is penny wise, dollar foolish. Such machines quickly lose their cost instead of saving it, and then go on losing instead of saving.

There is no possible reason why any buyer of a Cream Separator should be content with less than the DE LAVAL, and there never was a more promising time to make this most profitable of all farm investments. Send at once for new catalogue and full particulars.

THE DE LAVAL SEPARATOR CO.

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75 & 77 YORK STREET, TORONTO.
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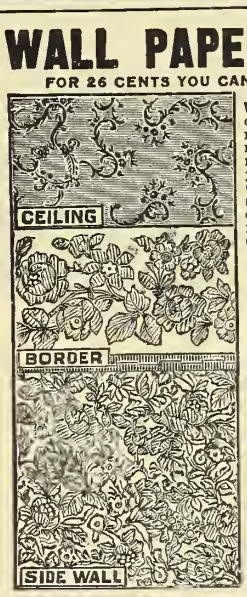
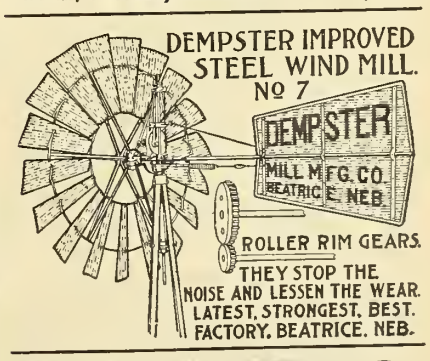
WALL PAPER OFFER.

FOR 26 CENTS YOU CAN PAPER A ROOM.



Our New Plain Floral Wall Paper, as illustrated, only 1½ cents per single roll, 3 cents per double roll, handsome border to match, only ½ cent per yard (8 yards for 1 cent) **Cost of this paper for a room** 11x11 feet, height of ceiling, 9 feet, is 20 cents for sidewall and border, 6 cents for ceiling. **TOTAL COST ONLY 26 CENTS,** allowing for two ordinary doors and windows.

DON'T BUY A ROLL of WALL PAPER until you see OUR FREE SAMPLE BOOK OF NEW PAPERS and learn our astonishingly low prices, wonderful values in gilt, embossed, bronzed and ingrain papers, **at 6 cents to 20 cents per roll, same as dealers everywhere ask 12 cents to 60 cents per roll. THE BOOK OF SAMPLES IS FREE,** explains how to order, how to tell how much to order, tells all about how to hang paper, how to make paste, how to select harmonizing colors, etc. **Write and ask for Wall Paper Samples** and the complete book **will be sent to you by return mail, postpaid, free.** Address, **SEARS, ROEBUCK & CO.,** CHICAGO ILL.



$10.00 Sweep Feed Grinder. | **$14.00** Galvanized Steel Wind Mill.

We manufacture all sizes and styles. It will pay you to investigate. Write for catalog and price list.

CURRIE WIND MILL CO.,
Topeka, Kansas.

NEWTON'S Heave, Cough, Distemper and Indigestion Cure. A veterinary specific for wind, throat and stomach troubles. *Strong recommends.* $1.00 per can, of dealers, or Exp. prepaid.
The Newton Remedy Co., Toledo, Ohio.

THE FIRST FIFTEEN CARLOADS OF UNCLE SAM CHERRYVALE-KANSAS CITY REFINERY PIPE LINE WILL ARRIVE AT YATES, CENTER, KANSAS, EARLY NEXT WEEK.

Other Shipments Will Follow Immediately. Cherryvale Plant Will Be Refining Oil in Six Weeks. With Both Refineries in Operation and Pipe Line Completed, Company Will Have Capacity Enough to Clear Twelve Thousand Dollars Per Day.

Money Invested in This Great Enterprise Will Increase in Solid Values Twenty Fold. Franchises from the Eight Kansas County Boards of Commissioners, Granting Right of Way for the 189 Miles of Pipe Line Clear Through to the Navigable Waters Now Secured. Construction Work Commences Forthwith and Will Be Pushed With Vim.

REFUSING to stand idly by while a band of foreign thieves pillage and confiscate the rich oil industry of Kansas, this great refinery and pipeline company is cutting her way through to success on Kansas soil, building a market for a Kansas product, backed by the strong arm of the state, supported by the people, the pulpit and the press, while from all over the United States unlimited financial aid is coming in on every mail, cheering and crowding the good work along. Money invested in the stock is safe because the people in general are behind it. Price on next allotment will be 15 cents per share.

DEMANDING a square deal for Kansas and Oklahoma petroleum and equitable prices for fuel oil consumers of the Central West, this great stock company is banding together 4,000 men to stand shoulder to shoulder, fighting for a market for a home product that is owned mostly by Kansas and Oklahoma taxpayers, they offer to every investor in the United States a safe, practicable investment, one that will increase twenty-fold and at the same time strike a blow for justice in the oil fields. The company now has stockholders in every state and territory and in Canada and old Mexico.

RIGHT through the richest farm lands of the Sunflower state, the Uncle Sam pipeline will lay down to thousands of Kansas homes, nature's own fuel at reasonable prices until it reaches the banks of the navigable waters where Refinery No. 2 will be completed, when down the Missouri river to the Mississippi and over the Ohio, Tennessee and other navigable waterways, fuel, refined and lubricating oils will be marketed by steamboats to the greatest manufacturing centers of the Union, and, if necessary, the company can float its oil to the ocean steamers unhampered and free, regardless of any railroad robber rates or criminal rebates or Standard Oil conspirators.

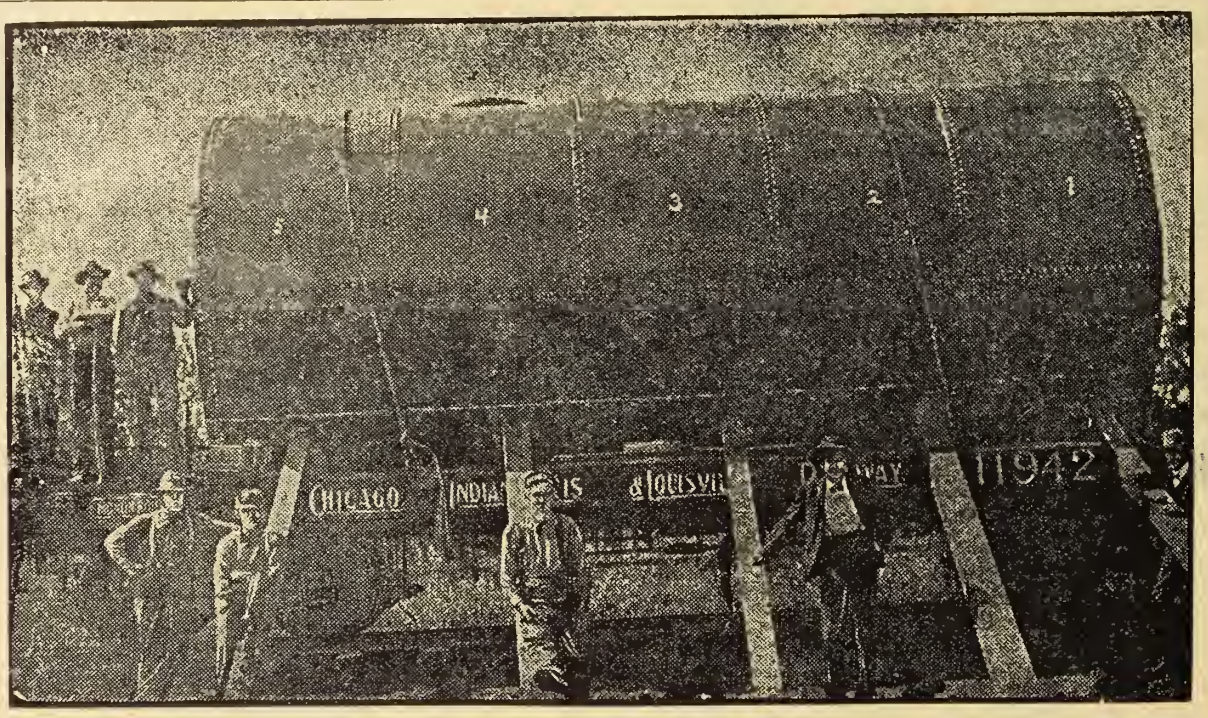


PHOTO OF ONE OF THE GREAT OIL STILLS—PHOTO MAY 25.

The above picture was taken just as the workmen at the refinery were unloading the second big still last week. This still is now on its brick foundation. Every day machinery is arriving. It is just a question of a few weeks until the Uncle Sam refinery at Cherryvale will be doing business. The company's first advertisements stated they would be refining oil in 120 days. Well, that is just what they will do; if anything, they will beat it possibly a week. Now, we told you the truth about this and you will find that the balance of the development will not miss the mark far from where we state in this advertisement. Now, if you want stock in the greatest money maker in the Central West, one that will grow stronger year after year; one that will be a monument to Kansas pluck and square deal in the oil fields, get busy quick and secure some of this stock before it is all sold, for this is about the last advertisement you will ever see of stock in this company at this price. The company has just what it advertises and is prepared to show you or any one else who will come down here and give us the chance. Better invest a thousand or so dollars before the stock gets up to three times the present price or to 25 cents per share.

Pipe Line Will Pay for Itself in Eighteen Months.

There is only one safe way to engage in the oil refining business. That is to own and operate your own pipe lines. That is the reason the Uncle Sam refinery is crowding the work on the pipe line to navigable waters. The company as above stated, has the right of way already secured. Fifty-five miles of the pipe is now ordered and will be on the grounds in thirty days. There is no speculation about building this pipe line. There is twice over the amount of oil that can be run over the present pipe lines facilities from the Kansas and Indian Territory oil fields. There is plenty of room for two or three more pipe lines. The Uncle Sam pipe line figured on a conservative basis will pay for **itself in the saving of freights in eighteen months.** Now, is this not conclusive proof that when we say the stock of this company will increase twenty-fold that we are making a conservative estimate? Why not invest $2,000 for 25,000 shares now before the work develops so far as to increase the real values several fold? Don't delay, thinking work will not walk right along, for things are moving down this way.

Fifteen Carloads of Uncle Sam Pipe Line Now on the Road to Yates Center, Kas.

The pipe from the East will be unloaded at different points along the line at once. The first shipment of fifteen carloads of pipe is now on the road from Wheeling, W. Va. It will arrive in Yates Center, Kan., some time during the next six or ten days. Don't wait until a regiment of men are laying this line, and until the Uncle Sam company secures 10,000 acres more oil lands, but secure stock now while it is selling at a price that is bound to greatly increase in solid values and make you good money. You can secure 50,000 shares for $4,000. If this is more than you can bite off the company is glad to welcome the small stockholder as well as the large. You can secure 500 shares for $40, or buy on installments offered in this announcement.

Stockholders in Every State and Territory in the Union and in the Dominion of Canada and Old Mexico.

The Uncle Sam Company is securing almost unlimited financial aid from the four corners of the country. Remittances have poured in for stock of this company from almost everywhere, until now there are stockholders in this company from every state and territory in the Union, and also from the Dominion of Canada and Old Mexico. Big deals are pending in 100 different money centers and the days are limited that anyone can secure stock under 25 cents per share. Better act at once and secure 5,000 shares at $400. When you invest at this price you will pay no more than hundreds of other investors, a great many of whom have been on the grounds.

Cherryvale Plant Will Be Turning Out Refined Oil in Six Weeks.

The Uncle Sam Company has been doing things from the word go. Never has the onward rush of the rapid progress been delayed one minute. Machinery has been coming in every day by the carload. From fifty to ninety men have been steadily at work for the past six weeks. Now the plant is fast nearing completion and it will not be over six weeks until it will be running to its full capacity. When you buy stock in this company you join an enterprise that is doing things. You can buy 10,000 shares now for $800, while in thirty days you will not be able to secure the same stock for even $1,500.

Right of Way Secured Across Kansas Counties.

The people of Kansas are so interested in seeing the great Uncle Sam refineries and pipe lines completed that special metings of the boards of county commissioners met in eight different counties and promptly granted franchises permitting right of way for the Uncle Sam pipe line. Business men and farmers along the line are preparing to build lateral lines to the different county seat towns, making one central distributing point, to secure fuel oil. The company will have connections in the line every ten miles and will lay down to thousands of Kansas homes nature's own fuel at living prices, free from any robber freight rates or criminal rebates. This Uncle Sam Company is a Kansas proposition backed by Kansas men. It is a proposition which Kansans will be always interested in and therefore protection will

The Uncle Sam Refinery.

In the Fruit-Grower for May there appeared the advertisement of the Uncle Sam Refinery, Cherryvale, Kan., and another advertisement appears this month. Desiring to know more of the standing of this enterprise, a representative of The Fruit-Grower visited Cherryvale recently to investigate the company and its standing. The banks of Cherryvale give the company and its officers a good reputation, as to their financial standing and as to their honesty, so that the company is being honestly managed. As to the property of the company, we have this to say:

In the first place, as is well known, the managers of the company realize that in establishing a refinery they are bucking the Standard Oil monopoly, so they are not entering the field unmindful of the fight on their hands. But, in view of the stand which the legislature and the people of Kansas have taken they believe that if the Standard Oil Company can be successfully fought anywhere, it is in the state of Kansas. The laws of Kansas have been amended to protect independent refineries more than the laws of any other state.

The Uncle Sam Company has a lease on about 4,000 acres of oil lands, and controls three oil companies which have 2,932 acres of oil lands. On this property are now 75 oil-producing wells, and two rigs are at work sinking other wells. Not a "dry" well has been found on the property. The 75 wells are now being pumped and the product stored. The wells average at least ten barrels each per day, so that, at a low estimate, the output of crude oil now amounts to about 750 barrels a day, with new wells being brought in every week. This oil is being stored in large tanks at the site of the refinery, and will be worked up as soon as the latter is ready.

Work on the refinery is progressing rapidly. The manager expects to have the plant ready for work in about forty days. This refinery will have a capacity of 1,500 barrels of oil per day.

We asked one of the managers of the company what were their plans for the future, after the refinery is ready for business, and were told that the company will depend upon its pipe line to protect its interests, for by using this line the railroads will have no opportunity to discriminate in favor of the Standard Oil Company. A pipe line will be built from the refinery at Cherryvale to a point just west of Kansas City, Mo., 179 miles distant. The right to lay this pipe line along the public highway has been secured, and fifteen carloads of pipe have by this time doubtless arrived to start this work. The company now has more than thirteen miles of pipe laid, connecting the different oil fields with the refinery; these lines are already in use, delivering the crude oil to the storage tanks at the refinery. When the line to Kansas City has been completed, storage tanks for the refined oil will be ready to receive the product. The company contemplates dealing in fuel oil, also. This will be oil from which the gasoline and benzine—the explosive properties—have been removed, and will be sold to farmers and others for fuel purposes. To facilitate the distribution of this oil, the company will establish distributing tanks at points along the line to Kansas City; these stations will be about ten miles apart, from which oil will be distributed throughout the country.

The property of the company consists of the following: Oil lands leased by the Uncle Sam Company, 4,000 acres; oil lands leased by three other companies, which are controlled by the Uncle Sam Company, 2,932 acres; site of refinery at Cherryvale, owned in fee, 20 acres; site of storage tanks at Kansas City, owned in fee, 55 acres; pipe lines now laid, connecting oil fields with refinery, 13; added to this are the tanks at the refinery, the stills erected, etc.

The company is paying cash for everything, so that the managers feel that they are on safe basis. Officers at present receive no salary, and will not, until the affairs of the company are on a paying basis.

The foregoing are the facts which were given to The Fruit-Grower. We drove out to the oil wells, and saw them at work; we visited the site of the refinery and inspected the preliminary work, and everything seems to be properly managed. The men in charge of the company are very hopeful, and stand well in the community. The outcome seems bright, even though the Satndard Oil Company is to be reckoned with in the disposition of the product.

Perhaps we should state that the pumps for pumping the oil are operated by gas engines, and the gas necessary for this work is obtained from the same wells which produce the oil. A small pipe draws off the gas and conveys it to the engines, so that the expense of pumping the oil is reduced to the minimum. The company has erected a number of tenant houses on their property, and is proceeding on the basis of making improvements permanent.

MUST CLOSE OUT NURSERY STOCK at Gage by Dec. 25, 1905. I have a general line of Forest Tree seedlings and seeds. Write me for prices on anything in this line you need. My price list free. F. C. BOYD, Gage, (Sequatchie Co.), Tenn.

always be guaranteed by the strong arm of the state. Better secure 1,000 shares of stock in the company now at $80 before the price doubles in value.

Personnel of the Company.

James Ingersoll, president.
J. H. Ritchie, vice-president.
H. H. Tucker, Jr., secretary and treasurer.

The above men promoted and placed on a dividend-paying basis the great Publishers' Oil Company of Cherryvale. The great bulk of the stock of the Publishers' Company was sold at from 8 to 12 cents per share. This stock steadily advanced until it reached 35 cents per share, and was taken off the market, and you cannot buy out a single one of the above men today even at $1.20 per share.

Protected by the Strong Arm of the State—Backed by the Press, Pulpit and Public Approval in General.

The Uncle Sam refineries and pipeline is a child of the favorable Kansas legislation of last winter. It is the only strong and progressive pipeline and refinery company backed by independent capital in the state that is really what you could term in a position to take care of itself. Everybody is for it. The public in general wishes for its grand success, and such conditions as these is what brings success.

Financial Condition of the Company.

Authorized capitalization is ten million dollars Every share of the stock draws the same amount of dividends as any other share. Par value is $1 per share. Stock is nonassessable. There was no deadhead stock in this company. Every share has been sold for cash from the start. There are now remaining in the treasury five million, five hundred and fifteen thousand shares. This stock is in good demand at 8 cents per share. For the past thirty days the average cash daily remittances have run over fifteen hundred dollars per day. The company now has over two thousand stockholders scattered all over the United States and in Mexico and Canada. Every stockholder is interested in pushing the company on to greater successes. There are now subscribed in the form of installments on stock which are gilt edge and all will be paid in during the next five months, over eighty-four ($84,000.00) thousand dollars. Thousands of dollars are now in the treasury. The company is discounting its bills, is paying as it goes. It will continue this policy. The pipeline to Kansas City will be built just as we see our way clear to pay for it. We may be four months and we may be a year, but she will be built, and when she is completed it will belong to the stockholders of this Uncle Sam Company, not some bondholder or money shark lender. There are big deals pending on the stock at present. The company is in communication with over three thousand prospective investors. We will cut this statement short by saying if you want any of the stock of this company you had better secure it as quick as you can get your draft or check here, for it is going fast and the company is solvent, solid and a certain winner, and is under the management of business men and will pursue a safe business course straight through.

Reasons Why This Stock Will Go Above $1.00 per Share—There Are Assets Back of This Stock and Here Is What They Are:

The company owns and controls over seven thousand acres of oil and gas lands, seventy-eight oilers, four pumping plants, has miles of lateral pipelines completed, connecting the bigger part of the Cherryvale field with the refinery. It is now pumping oil every day, hour and minute into its great storage tanks. The company has thousands of barrels already in storage and has room for thousands of barrels more. One of the great storage tanks has a capacity for 37,500 barrels. The refinery at Cherryvale is now nearly ready to commence turning gold into the treasury. A big tar still is now being added. Carload after carload of valuable machinery has been arriving on the company's grounds for the past six weeks. The company owns a splendid twenty-acre refinery site right up against the city of Cherryvale, has railroad switch completed. Has water lines and pumps completed. Owns never-falling water rights within a quarter of a mile of the refinery. Has room on proved grounds for over two thousand producing oil and gas wells. Owns fifty-seven-acre refinery site at Kansas City. This tract of land has every advantage for a refinery. Company has right-of-way to this site for a pipeline and pipe is now on the road and the line will be completed as fast as workmen can crowd the work. We have the oil, have surrounded our consuming territory for refined oil with hundreds of stockholders who will be doubly interested in helping the company sell their product at a handsome profit. The capacity of the two refineries and pipeline will be enough to net the company twelve thousand dollars a day with oil at present prices. This is no child of a company; it is strong and is growing stronger paying as it goes, will make great dividends and stock is certain to go past $1 per share and continue to grow in value.

REFERENCES.

The Montgomery County National Bank, Cherryvale, Kan.

The People's National Bank, Cherryvale, Kan.

Cherryvale State Bank, Cherryvale, Kan.

In addition to the above bank references if you know of a prominent business man in Cherryvale, write to him. In addition to these references the company has had the indorsement of over fifty leading and influential daily and farm papers of the United States that have had personal representatives on the ground. The Uncle Sam will not run an advertisement in a paper unless that paper will first make an investigation so that the moral support of the paper goes with the advertisements of the company. We could give a list of 500 men and papers in the United States who know this company is doing all it advertises, and that is saying a good deal. The facts are the Uncle Sam Company is pretty near "it" when it comes to independent development at present in the oil fields, and if you will investigate you will concluded that "it" would be a good thing to buy stock in. There are no swell heads connected with the management of the company. It is just a plain Kansas management, working for success and fighting for a market for a Kansas product, and CONTENDS THAT ANY MAN OR COMPANY HAS A RIGHT TO ENGAGE IN THE REFINING AND SELLING OF OIL WITHOUT THE CONSENT OF ANY FOREIGN, THIEVING CORPORATION OR COMBINE.

From Three to Five Dollars per Barrel Profit in Lubricating Oils.

There are very great profits in lubricating oils when a market can be secured for the same without paying excessive freight. The Uncle Sam Company proposes to be in a position to not only secure a market, but to reach that market without spending the profits in robber freight rates made by the oppressive Standard combine. From the river fronts the company can enter the big manufacturing centers of the United States. One-fifth of the population of the Union can be reached from these waterways. From the Missouri, Mississippi, Ohio, Tennessee and other navigable rivers the company from the Kansas City plant can market the oil with boats at little expense. Now we have the oil to start with, will soon have pipe line completed, where on earth can you secure a proposition good horse sense, one that offers one-more practical, one that offers more tenth the gain on the investment? The company has one of the best refinery men in the United States as its superintendent. It will maintain its own telegraphic wires, own its own steamboats, and from 1,000 feet under the ground, take the oil through its different stages until it is burning in your lamp or running your machinery.

Fifty-seven-Acre Kansas City Refinery Site.

The Uncle Sam Company owns in fee simple one of the best and most desirable refinery sites near Kansas City. It consists of fifty-seven acres. Is three miles nearer the manufacturing center of Kansas City than the Standard Oil Company. This fifty-seven acres fronts on the Kaw river. Is only a few feet to a rock road leading right into Kansas City. It is on the bluff side of the river, so there is no danger of floods. This land is paid for No debts or mortgages are allowed to hang over the Uncle Sam property. You will see the stock of this company selling readily for 75 cents per share when the pipe line reaches this land. You cannot keep the price of stock from advancing when rapid development is in progress like the Uncle Sam is showing.

Now Is the Time to Buy Your Stock

For a Few More Days the Uncle Sam Co. Will Sell Treasury Stock as Follows:

500 Shares	. . .	$ 40.00
1,000 Shares	. . .	$ 80.00
1,500 Shares	. . .	$120.00
2,000 Shares	. . .	$160.00
2,500 Shares	. . .	$200.00
5,000 Shares	. . .	$400.00
10,000 Shares	. . .	$800.00

The stock is non-assessable and the par value is $1.00 per share.

The time to invest in a company is when that company is selling its ground floor stock. When you buy stock in the Uncle Sam Company at $80 per 1,000 shares, you pay no more than hundreds of other investors. The company is strong now, and is hourly growing stronger. By September 1st you will see this stock up close to the dollar mark. Why not help yourself, and also help this company, by remitting today for at least 1,000 shares of stock?

INSTALLMENT OFFER GIVES EVERY MAN A CHANCE

The Uncle Sam Company would rather have ten men go together and take one thousand shares each than to have a few men take a large amount of the stock. The company wants men who have a vote and who will stand by the company when it has criminal discrimination to contend with. Better see your friends and raise a club and take ten, fifteen or twenty thousand shares right now.

Subject to raise without notice the company will sell stock as follows, on installments:

500 shares **$5** cash, with 5 monthly payments of **$8.**
1,000 shares **$10** cash, with 5 monthly payments of **$16.**
2,000 shares **$20** cash, with 5 monthly payments of **$32.**
3,000 shares **$30** cash, with 5 monthly payments of **$48.**
4,000 shares **$40** cash, with 5 monthly payments of **$64.**
5,000 shares **$50** each, with 5 monthly payments of **$80.**
10,000 shares **$100** cash, with 5 monthly payments of **$160.**
20,000 shares **$200** cash, with 5 monthly payments of **$320.**

HOW TO SEND MONEY

Make your checks, drafts or money orders payable to the Uncle Sam Company, or to H. H. Tucker, Jr., secretary. Write your name plainly, tell us how, or to whom you want the stock issued, and we will forward stock by return mail, and also send you weekly report thereafter, thus keeping you fully posted. Address

H.H.Tucker,Jr.,Sec., Cherryvale, Ks.

Potato Experiments in 1904.

The Maine Agricultural Experiment Station is now mailing bulletin 112, which contains an account of storage experiments on the rotting of potatoes due to late blight; experiments with dry Bordeaux mixture and soluble Bordeaux mixture as a preventive of blight; and experiments with home mixed fertilizers for potatoes.

It was found that the infection of the potatoes with the fungus which produces rot occurs chiefly, if not entirely, in the field before digging; that the infection is usually the result of diseased vines and that in the majority of cases the disease is not transmitted directly from the vine, but indirectly through the soil. Potatoes may be infected directly in the field from spores introduced in the land the preceding year. The experiments at this station agree with those at the Vermont station in showing that where the vines have or have not been protected with Bordeaux mixture, there is far less liability of loss from rotting in the cellar in the case of late dug than of early dug potatoes.

The experiments with dry Bordeaux mixture and soluble Bordeaux mixture show these both to be less effective as a preventive of blight and subsequent rot than the regular Bordeaux mixture.

Details of experiments upon several acres of potatoes grown by the use of home mixed fertilizers are given, and the results are discussed. Suggested formulas for home mixing given in bulletin 107 of the station are referred to.

Protecting Peach Trees for Winter.

John Carss, Sr., Keokuk, Iowa, writes that he finds a good many buds alive on seedling peach trees, although the temperature went to 32 degrees below zero. A deep snow covered the ground and the cold was steady, and to this he attributes the live buds after such severe weather. Mr. Carss says he believes peaches can be grown as far north as the fruit will ripen, if one uses care in looking ofter them. Last winter he bent down a branch of peach tree when the mercury was 22 degrees below zero, and covered it with snow, and most of the buds are alive. A winter cover crop will also help protect the peach trees, he says. Mr. Carss says he has also trained peach trees on a trellis, so that the branches can be bundled up in the winter and protected from the severest cold, or the trees can be so trained that they can be laid down and covered with earth during winter. Peaches for home use at least, can be grown if one will take care of the trees properly.

Let the price be what it may, The Fruit-Grower must come. I have nothing to say in its praise; what's the use? Only the man who grows fruit and hasn't his name on your subscription list stands in his own light.—M. B. Dickey, East Liverpool, Ohio.

Write F. C. Boyd a postal for prices on Rhododendrons and a general line of
Forest Tree Seeds and Seedlings
F. C. BOYD, GAGE, TENN.

BARGAIN

80 acres improved, smooth land, 3½ miles from Springfield —33,000 inhabitants; $60.00 an acre. Also snap in 320 acres unimproved, 4 miles from Brandsville, Mo.; $3.00 an acre. L. E. SHATTUCK, Baldwin Theater, Springfield, Mo.

Our advertisement in The Fruit-Grower was very satisfactory this spring, having brought us more answers and more orders than any previous season. Will give you more business for fall.—Vincennes Nurseries, Vincennes, Ind.

Albert E. Jenne, Westboro, Mass., writes: "I must tell you I think The Fruit-Grower is the best paper I ever saw. I can highly recommend the paper, and will always want my name on its subscription books."

THE FRUIT-GROWER
ST. JOSEPH, MISSOURI

Address all communications and make Remittances Payable to "The Fruit-Grower Company," Seventh and Charles Streets, St. Joseph, Mo.

W. G. Campbell, Jr., General Manager James M. Irvine, Managing Editor

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In compiling a list of Forty Thousand subscribers it is an easy matter to make mistakes, but we guarantee fair treatment to everyone. If you find an error in your address tag, or do not receive paper promptly, write us and we will trace matter up at once.

Entered as Second-Class Matter in the Postoffice at Saint Joseph, Missouri

Vol. 16 JUNE, 1905 No. 6

As a result of the investigation of the private car monopoly, many of the railroads are arranging to use their own refrigerator cars, doing away with the contracts with the Armour company. Among the roads which are taking this stand is the Illinois Central, which will construct 1,800 cars to use in its handling of the fruit and vegetable crops. It may be, as was at first contended, that the contract with the Armour company was all right, but a number of the roads besides the Illinois Central have come to the conclusion that a change is desirable. This will help to vindicate the stand taken by the shippers against the private car monopoly. In this connection it might be stated that the companies will be compelled to furnish enough cars to handle the business. Shippers are compelled to pay damages when they detain a car longer than necessary. Common justice, therefore, requires that the railroad companies furnish enough cars to transport perishable freight, or be liable for damages sustained by failure to ship.

Elsewhere in this issue are published several letters from Fruit-Grower readers giving their views concerning the use of manure spreaders. It seems that the growers hold that the machines are not all that they should be, and this is the reason their use has been found impracticable, to some extent. The experience of other growers is desired. Since we published the article in May number, we have received requests from manufacturers of manure spreaders, asking to be allowed to see the reports made by our readers. By the way, why not devote an issue of The Fruit-Grower next fall to the discussion of implements used on fruit farms, pointing out their good and bad points? The manufacturers themselves will doubtless be glad to know just what the farmers desire along this line. Every Tom, Dick and Harry tries to tell the farmer how to conduct his business. Now, let the farmer tell the manufacturer of implements just how the same can be improved.

The name of J. H. Hale was urged as a candidate for United States senator from Connecticut, to fill the vacancy caused by the death of Senator Platt, but the legislature decided upon another man. An Eastern paper states that the farmers themselves seemed somewhat indifferent in the matter, and were willing that lawyers be sent to congress. The Fruit-Grower does not mix in politics at home, much less in Connecticut politics, but we will say just here that the Connecticut legislature missed a mighty good chance to elect a mighty good man, at a time when good men in the senate are very much needed. The election of Mr. Hale would have done credit to the state, and would have been received with approval by farmers throughout the country.

The biennial meeting of the American Pomological Society will be held in the Coates House, Kansas City, Mo., August 8 to 10. This will be the first time for several years that the meeting of this society has been held in the west, and western horticulturists should show their appreciation of this fact by attending in great numbers. It seems that both the Kansas and Missouri horticultural societies were working for the meeting, and both will doubtless be pleased with the selection of Kansas City as the meeting place, for this place is convenient to both states.

Recently the statement was made by an experienced asparagus grower, in a section where asparagus rust has ruined acres of this plant, that the rust has been a blessing in disguise to the careful grower. This is because the careless grower, who expected the asparagus to grow without any attention, has been forced out of the business. Cultivation has been found a great help in controlling the rust, and those fields which are given the best care have been least injured by the disease. There is food for thought here. May it not be true that the insect and fungous pests which attack the crops of the fruit-grower will drive many careless growers out of the business, and make fruit growing all the more profitable to those who will take the best care of their plantations and orchards? If apples and other fruits grew wild, there would be an over-supply, and it would not be profitable to grow them. But the very fact that attention to details, as well as a thorough knowledge of the business, is necessary to success, is going to have the effect of weeding the indifferent growers out of the business, and will make horticulture more profitable to those who are willing to give the necessary time and thought to the business. J. H. Hale says the San Jose scale is a blessing, in that it makes the growers hustle; it is a well-known fact that many farmers would not cultivate the soil, if it were not to keep down the weeds, so that these often contribute to success. Don't give up because of obstacles—overcome them, and the reward will be the greater.

It is generally believed that one of the hardest fights which ever took place in Congress will be on next winter, when an attempt is made to pass railroad legislation according to the ideas of the president. Mr. Roosevelt believes that legislation affecting railroad charges is not only demanded by the country generally, but that conditions are such that this legislation is absolutely necessary. On the other hand, the corporations are determined that no legislation shall pass, and they make no secret of this fact. In matters of this kind, the really serious question does not concern the railroad rates, as such; but rather the serious part of the proposition is the question as to whether the people or the corporations shall rule. It is generally admitted that the railroads rely upon the United States senate to do their bidding, regardless of the interests of the people, and here is the dangerous situation. It is openly charged that certain senators hold their positions to represent the corporate interests, rather than the interests of the people generally. This fact, in itself, is not fraught with such danger—the real trouble is that the people seem either unwilling or unable to make a change. Perhaps the best way to make a change is to elect United States senators by direct vote of the people. Failing in this, the people should exercise the greatest care in the election of their representatives in the state legislature. It may take some time to get back the power which has been turned over to the railroads, but this work must be accomplished.

The article in the May issue of The Fruit-Grower on the subject of inoculation for leguminous crops attracted more attention, perhaps, than any article we have published for some time. There is danger, however, that some persons expect too much of this inoculation. The article was so plain that there is no need for any misunderstanding, yet there are those who want to buy bacteria for inoculating corn and wheat seed, etc. And it may be added that there will likely be fakirs abroad which will be perfectly willing to furnish bacteria for this purpose. Remember, that where the necessary bacteria are already present in the soil, no inoculation is needed; that only the leguminous crops, those which have power to utilize the nitrogen of the air, will be benefited by inoculation. And, above all things, remember that seed inoculation does not do away with the careful preparation of the seed bed, of good culture, etc. There is no miracle in this matter at all; simply a plan to supply the bacteria which are necessary to the best development of the different crops, provided the bacteria are not already present in the soil.

The problem of farm help is becoming more serious every year. Good help is so hard to get that many farmers are changing their method of farming, so that less help will be needed in caring for the place. In some parts of the East negroes are being brought from the Southern states to help work the farm, but if these negroes are not different from most of their race who have come North, they will soon begin to leave the farms to work in the cities. The proposition is a very serious one, and many persons suggest as the only remedy the importation of Chinese and Japanese laborers. And, really, we cannot see how these immigrants could be any less objectionable than thousands of the lower class who have arrived from some of the European countries within the past year. One way to help remedy the evil is to make the farm life so attractive that more of our American boys will be glad to remain on the farm, and this attractiveness will also help to hold the most desirable class of farm help in any community.

The Fruit-Grower "Takes Well."

I want to tell you how The Fruit-Grower "takes." I read my copy just a little and took it to a church social, to show to some of my friends. I showed it to a dry goods clerk, and he asked me if it had a poultry department. I assured him that it had, and he gave me his subscription. I left the paper with my overcoat while I ate, and told a friend I wanted him to examine the paper. When I looked for The Fruit-Grower I could not find it. I saw my friend in a couple of days, but he said he did not take it, nor has the janitor seen it. So I say The Fruit-Grower "takes well." Send me another copy, that I may show it and get three more subscribers; may get ten in all.

W. G. CHAFFEE.

Oswego, N. Y.

The Terry apple, which originated in Georgia, is said to be one of the best apples for southern growers. It does not begin to color in Texas until the last of October, and H. M. Stringfellow says the fruit remained on the trees until January. The apple has good color and flavor, and is recommended for testing all over the South.

M. Crawford, who is an authority on things horticultural, says: "I am astonished at the excellence of The Fruit-Grower."

Gooseberries in Indiana.

The gooseberry is indigenous in the extreme northern portion of the United States. The wild ones are taken from the woods, set out in rows, cultivated, and they bear an abundance of very good berries. With a thick glove they are stripped off, run through a fanning mill to blow the leaves out and are ready for market.

It is not quite that way here in southern Indiana; there are no wild ones in the woods, and when brought here from the north they do little good. I learned this in the course of time, and was ready to give up in despair, when I run upon a fruit tree agent whom offered me a hundred Downings for nine dollars. He said they would be at home in this climate and bear right along. I accepted this offer at once.

My hundred bushes came to hand early the following spring. I took them to the peach orchard and set them in the shade of the peach trees. I thought I had learned something about the gooseberry business by that time, and have since felt that the shade was the right place to grow them.

Well, my bushes all lived but seventy; then I began to see that I was not on the top rung of fruit-growing; so I bought a book. After consulting it I knew I was on the right track, for the Downing is a good berry.

In two years my thirty bushes bore me a crop of fine large berries, the bushes were loaded, and they were all that could be desired.

The next thing was to propagate more plants. After consulting my book, I made cuttings from one-year-old wood, set them down in the ground leaving two buds just out, all done early in the spring just before the buds started.

I watched these cuttings with considerable interest. The buds started with the advent of spring; as the weather got warmer and dryer they slowly withered away. Not one in a dozen grew an inch. I guarded these with jealous care; but when the thermometer got up to a hundred and a hundred and two, these withered away also.

The cuttings should have been made in the autumn, buried in bottom of cellar in sand, or better in bed of hothouse, through the winter. Here they would keep warm and moist and surer to grow in the spring.

I finally succeeded in propagating a supply of plants by layering them. I got up to this so well that I soon had plants to sell.

The Downing is large and fine, pale green in color, and adheres to the bushes longer than any berry I ever had.

The only insect enemy is the currant worm. It makes its appearance here about the first of May. Begins at one end of a row and goes from bush to bush across the field to end; if rows are some distance apart, they cross to another row and go back again. Spray with paris green or dust with white hellbore when the dew is on.

At ten cents a quart gooseberries are a very profitable crop. But if they run much below this I resort to canning. Gooseberries may be canned by the cold water process. Pick off stems and blossoms, then pack in glass jars and fill with cold water. When I am sure all of the air has been expelled, I screw on the lid, then invert the can to prove my work; if the least bit of water oozes out I get a better gasket. Old ones can be used by soaking them in oil to soften them. Sometimes it is necessary to use two, for a steam tight joint must be made.

WM. GOODRICH.

Princeton, Ind.

Two young plum trees were not growing to suit Maxwell Phillips, Oklahoma, so he dug them up about six weeks after setting them, and buried the trees, root and branch, in moist sand. Three weeks later he took them up and found them fresh and bright. Early in June they were planted again and made a growth of two feet during the season. This treatment will often restore trees which have been delayed in shipment, the bark of which is shriveled and sunken.

We were much impressed with the January number. We take a $3 magazine, but The Fruit-Grower is way ahead of it.—H. R. Ackerman, Canonsburg, Pa.

The Family Circle

A number of times lately we have asked members of The Fruit-Grower Family to offer suggestions in regard to the policies of the paper. Here is a letter recently received, which is published entire, for some of the points brought out are good ones:

"The 'Family Circle' in your April number interested me to the extent of giving it a second careful reading. Seemingly your editorials invite criticisms from your readers. So I state my views of your paper, which I intend to continue reading.

"You only lack an index. I find at this time of the year a need of looking carefully over the opinions of others who have had greater experience than myself. This is particularly true in regard to the materials and methods of spraying. So in order to use my cyclopedia (The Fruit-Grower) I have made an index of certain topics for handy reference.

"I have for years opposed the practice of continuing to send papers after the time contracted for had expired. Your plea gives me the publishers' side of the case, and also shows me that the subscriber has a duty to perform. I subscribe for various periodicals. These are to me a continuous course of lectures. I do not wish to have the chain broken, but do not always know when the subscription expires. We do not study the wrapper—like a young lady with a letter in strange writing—in the attempt to find what is 'nside, but we throw away the wrapper. No member of the family cares for the wrapper, and many, like myself, do not know when our time is up. So I suggest that to accommodate all the subscription blanks sent out should contain the clause 'to be continued until ordered otherwise.'

"The price of your paper (if kept to the present standard) probably might be increased. Yet many farmers are lovers of the 'bargain counter,' seeking for gain at the loss of others. A paper that will make such reports as you made concerning the 'seedless apple' is more to the benefit of the fruit-grower than to the publisher. If I could find the truth published concerning varieties of fruits, such a paper would be cheap at $5.00 a year. To illustrate: I am growing a few trees each of twenty-two varieties of peaches, trying to find a sort that will stand the severe climate of Northeast Illinois. Nurseries recommend trees, knowing they will not succeed. The fruit-grower must either waste time and money in experiments or support a paper that will supply needed information.

"Indirectly through your paper I have learned to avoid the use of lime in spray mixtures. Such compounds are so near impossible to farmers with small lots of fruit that sooner than turn chemist he will compete with the bugs for his share. Myself and neighbors have also each saved several times the cost of your paper by buying insecticides from your advertisers. And I, acknowledging benefit, have never asked any one to subscribe to The Fruit-Grower. Yet if I keep on reading and thinking, I may learn my full duty.

"Yours sincerely,
"FRED FREEMAN.
"R. D. 6, Kankakee, Ill."

We suggest to Brother Freeman that he at once begin to recommend The Fruit-Grower. For a paper to be of the greatest benefit, it should have as wide a circulation as possible. In regard to the reports of varieties, this is a hard matter to handle. Varieties differ in their behavior in different localities, and only general rules can be given in making reports of them. However, The Fruit-Grower hopes to have more reports of varieties, especially of small fruits, and asks members of The Family to keep careful record of them this season. Note what varieties were worst injured by winter, which were injured by late frosts, which were best able to withstand the unfavorable weather, etc. Let us have these reports later.

Some members of The Family claim they have no time to read during the summer months. But that is a mistake. If The Fruit-Grower can be of value to them at any time, it is worth while to study its columns even during the busy season. We shall try to have the matter seasonable and boiled down, to occupy the least possible space, so that one will not have to wade through a lot of rubbish to find the matter he wants. The crop reports, especially, should be of value to everyone.

Not only should our readers study the paper carefully during the summer season, but we believe they ought also to be on the lookout for new subscribers. Of course, our special propositions have been withdrawn, but it behooves everyone to subscribe now, even at 50 cents a year, for the rate will likely be advanced next January to $1 a year. Now is the time to save money.

The July issue will contain full reports of the meetings of the American Association of Nurserymen, Missouri Horticultural Society, Kansas Horticultural Society, and will also have an account of the trip to the fruit section of Eastern Texas by the fruit farmers from the North. The July number will be a good one, even if it is the mid-summer season.

BROTHER JONATHAN.

Close Planting of Apple Orchard.

I am always glad to get your fine paper. The fact is, having been twenty years growing fruit for a living, I have of necessity been forced to get and read closely enough fruit papers to keep up with the times; also with insecticides and fungicides, which keeps a fellow on the run pretty near all the time. But I usually drop them all when The Fruit-Grower comes in.

My wife called my attention to Brother Spencer's article in the April number. He must be my brother, I guess, although I never heard of him before. But, judging from his push and determination to carry out his own plan, regardless of his neighbors' views, he must be my brother. I would like to know where the young man came from when he came west, also would like to have a shake with him.

Twenty-five years ago we quit the services of the Illinois Central railroad, which services had run over seventeen years of the prime of my life. With an ideal fruit farm in my mind, five years later we commenced to set out, or, in other words, to put my idea on the ground. To beat the other fellow who was setting all Ben Davis, I set each spring and fall from three to five hundred early apple trees. Planning by this to have some trees that would bear fruit every year. The plan has worked fine in both instances; have fruit every year; also when my neighbors all over four counties have Ben Davis that hardly pay the farmer five miles from town to gather and haul to town, I have nice early apples which bring me a fair price. We had a little more nerve than F. P. Spencer, for we set a tree every 16 feet each way, with full purpose to cut out every other tree diagonally, thus giving a tree every 32 feet in rows 16 feet apart.

One incident will show what some people thought and said about my plan. The plan ran on nevertheless. As my orchard got just ready to bear a railroad fire ran through it and destroyed between 400 and 500 trees. I sued for damages, called in three of my near neighbors, old fruit growers. By the way, there is nothing else in this country but fruit-growers. We carefully showed them all the burned trees; also the number one-half killed; also three-fourths killed; then retired and left them to figure. After a half-hour or so they came to me and the chairman said, "We have concluded that you are damaged $6,000." This same man came into court and swore that I had not been damaged a cent; that my trees were so thick that the land was worth more without the trees than with hem.

We attempted to set first-class early apples. After a number of years' shipping of the same, I thought I knew just what to set; but let the tree men tease me into trying some of their fine stock, which almost invariably proved nothing but trash. These, however, I have successfully top grafted to tried varieties, and am reaping my reward. Others that were fine fruit were shy bearers. All these I top grafted to the tried sort. Have one 500 lot of that kind now; this season have just given the grafts the full strength of the tree. This gave the old trees plenty of room. Expect a good crop of them this season. Two years later will tae out all the old trees and give my new ones the full sweep. Have a lot of this good wood that Brother Spencer speaks of this season from alternate trees cut out.

Say, Brother Spencer, just charge that other fellow enough so that I can stand up with you when you get that picture taken. Often when I talk of cutting out a part of my orchard I am asked, Have you got nerve enough to do it? You always have so much nice fruit. We simply smile and say, Yes, sir.

By the way, I have had a good deal of trouble with the apple pests. As my little place was an old neglected orchard when I got it; all covered up with all the pests that such a place is heir to. When the idea of spraying came into practice I tried it the best we could with the limited knowledge at hand. Burned my trees bad the first season. Called it a failure and quit for a year. Had a big crop of cider apples. We then saw that we had to spray or go out of business. So for six months we read everything and wrote everywhere for information. Got formulas from the east, west, north and south. Authors referred me to any first-class fruit paper or agricultural report. After dissecting them all, for I was hungry for information, we compiled our own formula with remarkable success. My compound of Bordeaux differs from them all, but gives success, with no sign of injury apparent anywhere.

N. W. SPENCER.

Centralia, Ill.

Good Strawberry Culture.

Strawberry culture as carried on by the amateur has reached a stage where it almost deserves to be classed as a fine art; and the grower who is aiming at the best results must give his garden so much of his time, so much of his thought and so much of his society, that his wife will feel that she has just grounds for being jealous even of a strawberry plant.

I have set strawberry plants during every month of the year, except the three winter months, and think the best time to transplant is when the soil is moist and in good condition; the second time for this latitude is in April. In planting I formerly used a spade and a straight back, but have found that a better way is to use bended knees, two hands and a short-handled hoe. Berries will ripen earlier if grown in light soil under light mulch and in narrow rows, so I plant early kinds in rows three feet apart and keep the plants in narrow matted rows. Later kinds I plant in rows four and one-half feet apart and allow them to make rows two feet wide.

Summer cultivation is governed by the needs of the plants as the season progresses. In a general way I try to discourage excessive plant growth or great crown development. Strawberries, like most other kinds of fruit, have the fault of setting twice as many berries as they can properly mature if the season is at all unfavorable. To overcome this I work for a medium number of medium size plants. Early in the fall when dry weather or cool weather has checked growth, I commence covering the beds over to a depth of one or two inches with well-rotted manure. This helps to keep the frost out and the moisture in the ground, giving the roots a chance to grow out and balance up with the crowns.

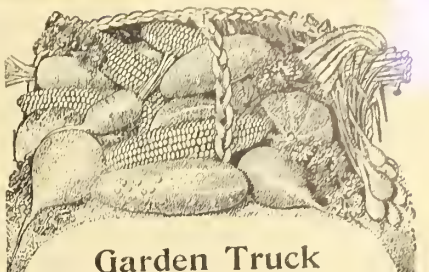
With cold weather another mulch of straw is added to further protect the plants from frost and the coming crop of fruit from dirt. This mulch should be used sparingly where early berries are desired.

In the following spring I see to it that enough plants get through this mulch to form a good fruiting row, wage war on such weeds as may appear, and await the fruiting time, when the real strenuous life of the strawberry grower begins. However, the grower who is fortunate enough to have a full crop of fine berries of the first magnitude is not the one who need fear trouble ahead, regarding the picking and marketing of his fruit.

As to varieties, there are many good ones, and some that are very good. Among the forty kinds fruited here the past season, the Marie, Sample and Climax were all great box fillers, but most of the inquiries from regular customers were for Ridgeway and especially for Senator Dunlap.

FRANK MOFFITT.

Carmel, Ind.



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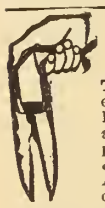

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Crop Reports for June.

Since the last reports were published there has been a deterioration in the size of the apple crop throughout the Middle West. Whereas a month ago prospects indicated a heavy crop, indications now are that the crop will be not more than one-third to one-half crop, when all varieties are considered. Ben Davis bloom was light, to begin with, and other varieties have fallen badly, on account of wet, cold weather. A hopeful sign in connection with the apple crop is the condition of the fruit and of the trees. The fruit is generally smooth and nice, and trees are in better condition than they have been for ten years. If the fruit which is now on the trees develops as it has started, there will be many apples in the Mississippi Valley, and quality will be fine, although of course there will not be a full crop, nor even one-half of full crop.

Peaches were practically destroyed in the Mississippi Valley in the winter. The crop in Georgia is estimated at about half that of last year, while Eastern Texas has a good crop. The quality of the Georgia fruit is said to very fine, and on account of the short crop is expected to bring high prices.

The grape crop promises to be good. Throughout the Middle West this season the vines were unusually late in putting out, and thus they escaped damage by late frosts. Some of the more tender varieties were winter-killed, and this has served to cut the crop a little short, but on the whole the grape crop promises to be a good one.

The summary of our reports follows:

Fayetteville, Ark.—We shipped 300 cars of strawberries from the county. Raspberries and blackberries promise full crop. Grapes promise good crop. Apples promise 25% of crop; fruit showing some scab and effects of poor fertilization. Trees in good condition. —W. G. V.

Canon City, Colo.—Strawberries very good, perhaps 100,000 crates. Prices started at $4; probably average $1.75. Raspberries and blackberries both good. Probably 75 percent of grape crop. Apples promise full crop, with trees and fruit in good condition. Fair crop of pears. Native plums good, foreign varieties poor.—J. W. W.

Rocky Ford, Col.—Small fruits promise 75 cent cent of full crop. Prospects for good crop of grapes. Apple crop the best we ever had; hail did some damage in local orchards.—J. H. C.

Fruita, Colo.—All fruits excellent crop. No peaches; trees damaged. Good crop of grapes. Apple crop very good, with trees in good condition.—W. E. R.

Paonia, Colo.—Full crop of small fruits. Not to exceed 25 per cent crop of peaches. Apple prospects the very best, with trees and fruit in fine condition.—J. W. B.

Rome, Ga.—Strawberries were short crop; other small fruits good crop. From 20 to 25 per cent crop of peaches of very fine quality. Very short crop of apples, orchards looking fine.—G. H. M.

Jerseyville, Ill.—Early apples promise one-third crop; late sorts, 15 per cent. Trees generally in good condition.—I. D. S.

Jerseyville, Ill.—In my orchard I find full crop of Jonathan, Winesap and Roman Stem on old trees, 75 per cent crop of Willow Twig, and very light crop of Ben Davis. Young trees of Jonathan and Willow Twig promise 20 per cent of crop, and young Ben Davis trees 10 per cent.—R. P. S.

Neoga, Ill.—Small fruits very good crop. Grapes badly winter-killed. Prospects for good crop of apples, with trees and fruit in good condition.—H. A. A.

Quincy, Ill.—Fair crop of grapes. Apples promise excellent crop in sprayed orchards; no good in unsprayed. Trees in good condition.—C. H. W.

Clayton, Ill.—Strawberries were fair crop; raspberries poor, blackberries fair. Excellent crop of grapes. Poor prospects for apples; trees in good condition.—G. A. S.

Alton, Ill.—Strawberries were large crop, with prices unsatisfactory. Raspberries promise good crop; blackberries half crop. Only a light crop of some varieties of peaches on river bluffs. All tender grapes were injured by winter; otherwise prospects are good. Apple prospects are excellent; there is a good set, and young fruit is clean and healthy; prospects could not be better. —E. A. R.

Hamilton, Ill.—Small fruits good crop. Fair crop of grapes. Poor crop of apples, with trees in good condition, except for some blight.—H. D. B.

Centralia, Ill.—Strawberries are half crop; other berries promise well. Peaches are quite promising, some orchards having full crop. Light crop of apples, especially Ben Davis. Trees look well, and sprayed apples are good. —W. S. P.

Savoy, Ill.—Good crop of small fruits. Fair crop of grapes. Apple crop will be small; some varieties are good, and the entire crop will be perhaps 40 per cent. Trees in good condition.—R. L. D.

Vincennes, Ind.—Strawberries are fair crop. Grapes good crop. Apple prospects are for small crop; trees are in good condition, and sprayed fruit is good. Heavy drop materially reduced the crop.—H. M. S.

Marion, Ind.—Strawberries are full crop; other berries are not so good. Few peach trees here, but they are literally loaded, and will need thinning. Grapes are full crop. Apple prospects the best in five years, with trees in good condition.—S. T.

Salisaw, Ind. Ter.—Strawberries are all gone; prices good. Very small crop of peaches. No apples here.—W. W. W.

Villisca, Iowa.—Strawberries, raspberries, full crop; Poor prospects for apples.—H. S. A.

Arlington, Kan.—Fine prospects for all fruits except budded peaches. They were killed in winter.—B. P. H.

Holton, Kan.—Strawberries were from half to three-fourths crop. Raspberries one-fourth to half crop, except Cardinal, which promises 90 per cent of crop; blackberries half crop. Grapes, 75 per cent. Apple prospects indicate one-fourth to three-fourths crop, owing to varieties; trees in good condition.—F. W. D.

Edwardsville, Kan.—Strawberry crop the best ever; raspberries half crop; blackberries one-fourth. Grapes a strong half crop. Apple crop practically nil. Trees in best condition for years.—E. T.

Wichita, Kan.—Raspberries and blackberries short crop. Plums and cherries fair crop. Apples are 40 per cent of crop; bloom was the best we ever had, but wind seemed to destroy pollen and they did not fertilize well. Quality of fruit good, especially in our own orchards.—E. G. H.

Rosedale, Kan.—Strawberries, 20 per cent; raspberries, 50 per cent; blackberries, 60 per cent; this is based on possibilities of full crop. Only a few peaches. Concord grapes promise 80 per cent of crop; tender varieties winter-killed. Jonathan apples promise half crop; Willow Twig full; Ben Davis family were shy of bloom. Pears a total failure. Cherries, 20 per cent of crop, with half the Morello trees dead; Early Richmond and Montmorency trees fared better. Apple trees have developed some blight, and many peach trees are showing leaf curl.—F. H.

Brooks, Me.—Apple bloom promises half crop. Trees in good condition on high land, injured by cold winter on low land.—H. W. L.

Amherst, Mass.—Small fruits promise fine crop. Peaches medium to full crop. Good prospects for apple crop, with trees in good condition.—F. A. W.

Ipswich, Mass.—Fine prospects for strawberries, unless cut short by drouth, which seems likely at this date. Fine prospects for big crop of peaches, except in neglected orchards, where the crop will be light. It seems now that we will have the biggest apple crop for an odd year we have ever had; Russet, King, Jonathan, McIntosh Red, Gravenstein, etc., promise full crop; few Baldwins. Trees in good condition.—A. F. T.

Watervliet, Mich.—Fair crop of all small fruits. Very heavy crop of peaches, even on young trees. Grapes blossoming full. Apples promise about 75 per cent of crop; trees sprayed quite generally.—R. H. S.

Hickory Corners, Mich.—Strawberries fine crop. Peaches promise full crop. Plums not very good crop; full crop last year.—F. E. S.

Columbia, Mo.—Strawberries good crop; raspberries, 40 per cent; blackberries, 60 per cent. Grapes, 80 per cent. Apples promise 25 per cent of crop. Trees in splendid condition, but some blight is appearing.—J. C. W.

Lebanon, Mo.—Strawberries good crop. No plums, pears or peaches. Excellent crop of grapes promised. Apples promise half crop, with trees in splendid condition.—A. T. N.

Oregon, Mo.—Strawberries and blackberries, 75 per cent of crop; raspberries, 10 per cent. Half crop of grapes. One-third crop of apples, with trees in fair condition, and fruit in good shape.—N. F. M.

Rushville, Mo.—Grapes promise well. Apples, 20 per cent of crop. Trees in good condition.—B. F. S.

Odessa, Mo.—Small fruits full crops. Apple prospects poor; all varieties except Ben Davis promised well, but fruit has dropped badly, and there will be little fruit at maturity.—S. H. P.

Tecumseh, Neb.—Strawberries, raspberries and blackberries promise well. Grape bloom shy, some vines winter-killed. We had an excellent apple bloom, but fruit did not set well; I should estimate a good half crop; trees in fine condition.—W. G. S.

Crete, Neb.—Strawberries and blackberries good crops. Grapes look well; nearly full crop promised. Janet apples very full; Ben Davis and Winesap better than last season; condition of trees excellent.—E. F. S.

Gasport, N. Y.—Good outlook for small fruits. Heavy crop of peaches and other stone fruits. Apples promise well.—C. B. S.

Adams' Basin, N. Y.—Small fruits promise well. Peaches very good. Grapes fair crop. Apples promise half crop; Baldwins very shy. Trees looking fine.—C. O. B.

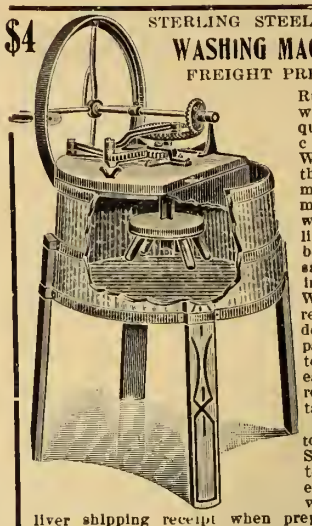
Hails Corners, N. Y.—Plenty of small fruits. Apples promise half of last year's crop.—T. B. W.

Jay, N. Y.—Strawberries badly winter killed. Currants loaded to the tips, and weather favorable for full crop. Good prospects for grapes. Apples trees blossomed full, but are falling badly; trees in good conditlon, and fruit looks promising.—H. T. S

Brockport, N. Y.—Prospects good for all kinds of apples except Baldwins, which will hardly have more than 30 per cent of crop.—F. U.

Fayetteville, N. Y.—Full crop of small fruits. Fair setting of grapes. Apples have set heavy crop, except on

$4 STERLING STEEL ROTARY **WASHING MACHINES** FREIGHT PREPAID



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Gentlemen: Received the machine all "O K" and am very much pleased with it. It works fine, runs easy and washes clean.
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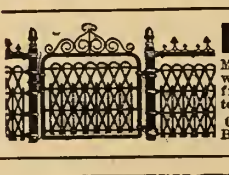

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Baldwins; trees in first-class condition. —F. E. D.

Perry, Ohio—Small fruits in good condition. Peaches fair. Grapes good. Apple prospects poor, with trees in first class condition.—F. D. G.

Rockwood, Ohio.—Light crop of small fruits. Peaches and grapes promise good crops. Apples promise one-thru to three-fourths crop. Some orchards have good crops, while unsprayed orchards promise very poor yields. Trees generally good in sprayed orchards, but scab is attacking unsprayed trees, which have dropped their fruit.—U. T. C.

Maramec, Okla.—Good prospects for apples and cherries. Peaches all gone. Peach trees badly injured by winter—F. H. F.

Yukon, Okla. — Blackberries looking fine; strawberries made fairly good yield. Grapes generally promise good crop. Apples are dropping badly in many orchards.—A. S. P.

Portland, Ore. — Strawberries fair crop; other small fruits promise well. Peaches are good crop in Southern Oregon. Prunes promise 25 to 50 per cent of crop. Apple bloom was light over the state.—G. H. L., Sec.

Haines, Ore.— Severe frosts and cold weather had hurt fruit. Apples promise less than half crop. Pears and cherries mostly killed; strawberries the same.—C. J. C.

Hood River, Ore.—Small fruits in fine shape. Prospects for medium crop of apples.—E. H. S.

Forest Grove, Ore.—Good crops of small fruits except currants. Peach trees generally full, except on low ground. Grapes promise full crop. Apple prospects are for very good cro. Pears not full. Prunes, plums and early cherries are light crops in valley, but on foothills are very good. —W. H. H.

Ashland, Ore.—Fair crops of strawberries, currants, gooseberries, raspberries and grapes. Plums, prunes and apricots promise light crops; cherries better. Apples and pears promise a full crop generally.—R. G.

Harrisburg, Pa.—Earliest strawberries were frozen, later varieties promise well. Peaches were badly injured by late frosts. Grapes have set full crop. Prospects indicate good half crop of apples, with trees in fine condition.—G. H.

Provo, Utah.—Conditions in Utah indicate a good crop of all fruits.—E. H. L.

Chattanooga, Tenn. — Strawberries were about half crop. Some peach orchards on high lands are full, but we have no peaches on low lands. Apples were badly damaged by freeze of April 16. Trees are generally in good condition, but peach trees were badly injured by winter.—D. W. H.

Vancouver, Wash.—Full crops of all small fruits, except currants. Will have average crop of peaches. Plums and prunes poor crop; perhaps one-half crop. Apples are not in best of condition.—F. S. F.

The Private Car System.

J. B. Harvey, Canon City, Colo., says he has studied the private car contracts and their effect upon fruit shippers. In regard to Mr. J. H. Hale's testimony before the investigating committee, he says:

"It would seem there are two sides to this question. Mr. Hale says the railroad wouldn't supply cars enough, railroad wouldn't supply cars enough, and use them so short a time during the year and lie idle the remainder of the year. Now, my point is this: If the Armour company or any other company can use their cars in the early part of the season for carrying peaches and other fruit and vegetables from the south, then use them farther north later and in winter use them for hauling across the continent from California and for meat all the year around, then they ought to be able to do the hauling even cheaper than could the railroads.

"Mr. Hale wants some cars to haul his peaches out of Georgia, Mr. Smith in Atlanta wants a car of meat, so the Armour company sends down a car of meat and brings back a car of peaches. Coyne Bros. want a car of oranges, and Mr. Jones in Los Angeles wants a car of meat, so Jones gets the meat and Coyne Bros. get the oranges. Now, I think you all see my point. The Armour company or any other company should, to my notion, have an advantage over railroads, and my idea is that if we haven't laws that enable our interstate commerce commission to control these things, laws to that end should be the aim of every farmers' institute and horticultural society. This is about as important to consumer as to producer. All laboring classes and middle classes are large consumers of the product of the farmer and fruit-grower. My idea is that it is right for all men (or women either) in any business or vocation to make fair profits, but the farmer or horticulturist, if he makes scarcely nothing, will unwillingly hurt the merchant by not being able to buy and pay for what go to make up what we as American citizens call comfortable living. Refrigerator car lines should have a fair profit and rates should be more equitable as to charges and distances, etc. Of course, there is room for great improvements in railroads along that line also. The railroad companies seem more easily dealt with than the refrigerator car company, so far as I have been able to learn."

It is said the Connecticut peach crop will be heavy this year.

Lawrenceburg, Tenn., grows strawberries extensively, and this season will have 200 acres of canteloupes.

A grower at Ridgely, Md., who has ten acres of peach trees, has sold his crop for 10 cents. It is safe to say there were few live buds when the sale was made.

Colorado growers have formed an organization to work for lower freight rates on fruits. The committee is at work, and will likely secure a reduction. All local associations in the state are co-operating in the work.

Most of the Texas truck-growers are in a strong organization, which will sell on track this year. Nothing will be consigned by these growers; if sales are not made on track, a man will be sent along to look after the shipments.

The Michigan Central railway will use its own refrigerator cars in the Michigan fruit belt this season, as well as the Armour cars. Shippers will be allowed to use whichever they please, but icing charges will be much lower than heretofore.

The banana companies now sell that fruit by welght, instead of by the bunch, as formerly. When will the time come that apples will be sold in this way? They are sold by weight in New Mexico and some other sections now.

Wilmington, N. C., is one of the greatest strawberry sections in the world, and growers find the business very profitable. In 1893 the savings banks of Wilmington had $50,000 on deposit. Today they hold over $2,000,000, most of the savings of truck farmers.

Oregon growers' associations are uniting in a plan to prevent overstocking any markets to which their fruits are shipped. One firm will be selected in each market to look after the fruits from the different shipping points, and this firm will be sent only such fruit as can be disposed of profitably.

Texas growers are asking the railroads to furnish transportation for one man with every car of produce shipped, this man to accompany the car to look after its contents en routs and its disposition when it reaches its destination. And why not? Why not furnish this transportation, when shipments of live stock are furnished it?

The Armour company failed to supply enough cars to handle the berry crop of the Carolinas, and the growers suffered untold loss. It is to be hoped they will demand—and receive—damages for the loss of their fruit. When the railroads charge for the failure to unload a car of freight promptlv, they should certainly be held responsible for all losses occasioned by their failure to furnish cars to handle perishable products.

At the annual meeting of the American Fruit and Produce Travelers' Association a resolution was adopted to the effect that in future the members will not buy strawberries from any man unless the name of the grower is plainly stamped on the package. The association takes this stand in order to secure the proper handling of fruit by the grower, and it is a step in the right direction. No man should want to send to market any stuff which he is ashamed to have go out under his name.

The Trip to Texas.

Mr. E. W. LaBeaume, general passenger agent of the Cotton Belt Railway, announces that the following persons have been invited to join the party which will leave St. Louis on the night of June 20 for a trip through the peach orchards of Eastern Texas, most of these persons having accepted, so that a successful trip is assured:

Walter W. Stevens, Salem, Indiana.
W. B. Flick, Lawrence, Indiana.
H. A. Aldrich, Neoga, Illinois.
L. R. Bryant, Princeton, Illinois.
Dr. J. C. Whitten, Columbia, Missouri.
L. A. Goodman, Kansas City, Missouri
C. E. Hadsell, Troy, Michigan.
Chas. E. Bassett, Fennville, Michigan.
P. F. Kinne, Storm Lake, Iowa.
Wesley Green, Des Moines, Iowa.
Maj. Frank Holsinger, Rosedale, Kas.
Wm. H. Barnes, Topeka, Kansas.
T. E. Loope, Eureka, Wisconsin.
E. P. Sandsten, Madison, Wisconsin.
W. R. Lazenby, Columbus, Ohio.
Vernon H. Davis, Columbus, Ohio.
Clarence Wedge, Albert Lea, Minn.
A. W. Latham, Minneapolis, Minn.
Clarence W. Mathews, Lexington, Ky.
W. C. Reed, Vincennes, Indiana.
J. W. Stanton, Richview, Illinois.
Chas. Hale, Shelby, Michigan.
J. C. Blair, Urbana, Illinois.
E. H. Favor, Columbia, Missouri.
Albert Dickens, Manhattan, Kansas.
A. T. Erwin, Ames, Iowa.
R. H. Troth, Orleans, Indiana.
Jacob Friend, Necoma, Illinois.
C. J. Monroe, South Haven, Michigan.
W. J. Green, Wooster, Ohio.
J. J. Mathous, Valley Mills, Indiana.
Geo. J. Foster, Normal, Illinois.
F. M. Beatty, Three Rivers, Michigan.
Norman J. Colman, St. Louis, Mo.
J. C. Grossman, Wolcottville, Indiana.
Fred Hubbard, Urbana, Illinois.
L. R. Taft, Agricultural College P. O., Michigan.
H. J. Swain, South Bend, Indiana.
Geo. W. Holsinger, Rosedale, Kansas.
Joe A. Burton, Orleans, Indiana.
W. B. Chapman, Washta, Iowa.
G. E. Rowe, Grand Rapids, Michigan.

Farm and Horticultural papers to be represented on the excursion:

Western Fruit-Grower.
National Fruit Grower.
Wallace's Farmer.
Twentieth Century Farmer.
Michigan Farmer.
Up-to-Date Farming.
Orange Judd Farmer.
Indiana Farmer.
Farmers' Tribune.
Our Horticultural Visitor.
Farmers' Voice.
Apple Specialist.
Colman's Rural World.
Farm and Home,
Farmers' Guide.
Farm, Field and Fireside.
Southern Cultivator.
Gleaner.
Fruit Trade Journal.
American Truck Farmer.
Iowa Homestead.
National Farm Journal.
The National Nurseryman.

New Catalogue of DeLaval Cream Separators.

One of the most complete, interesting and up-to-date catalogues ever published on the subject of Cream Separators has recently been issued by The De Laval Separator Company of New York.

To both the experienced and inexperienced buyer of Cream Separators, the new De Laval catalogue offers a source of much valuable information. Not only is the importance of the Cream Separator as a profit making machine for the cow owner discussed therein in a clear and easily understood manner, but the book is illustrated throughout with cuts of the different styles of De Laval machines and their interior parts, which illustrations give the reader an excellent idea of the De Laval separator and its operation. The superiority of the "Alpha" or "Disc" system of separation over the old "hollow bowl" system is illustrated and set forth in an interesting manner. In fact, almost any question one might ask concerning separator construction is fully answered in the De Laval catalogue.

Attention is also called to the improvements made in the 1905 De Laval machines, and the fact that the De Laval separator today offers even greater advantages to the user than ever before. Over twenty five years of experience in manufacturing separators, on the part of the De Laval company, have made the 1905 De Laval machines ideally perfect in skimming efficiency, durability, ease of operation, etc. A better understanding is had of De Laval "value" and of the important part it has played in developing the modern dairy industry of the world when attention is called to the fact that over 600,000 De Laval machines are in actual use today, and that one big western creamery concern alone has sold over 15,000 De Laval separators and is paying out on an average of $3,000,000.00 each year for De Laval produced cream.

The high standard of separator value which has been attained in the De Laval machines, and for which they have been renowned for a quarter of a century, is well worth the consideration of every prospective buyer, and any one seeking separator facts or information upon the centrifugal separation of cream can do no better than write to The De Laval Separator Company, at their general offices, 74 Cortlandt st., New York, or one of their various branches, for a free copy of their most interesting catalogue.

National Paper Boxes.

Within the past few years there has been placed on the market a paper berry box, which this year is making a splendid record for itself. This box is made of heavy parafined paper, and of course is put together without any tacks. The boxes are made by the National Paper Box Co., Kansas City, Mo., which has perfected the boxes so that they will hold up well, even in the rainiest season. The objection which was made to these boxes at first, that they absorbed moisture from the atmosphere and consequently would not stand shipping in moist weather, has been overcome, for it is said the material is now absolutely waterproof, so that the boxes can be soaked in water, and will come out in perfect condition.

By the perfection of machines for making these boxes the company has been enabled to reduce the prices of the boxes, so that they are now within reach of everyone. These machines are placed in various parts of the country, close to fruit sections, and near to mills which manufacture the material, so that freight rates will be greatly reduced. The company reports having enjoyed a splendid season, with satisfaction to every user of the boxes. Fruit-Grower readers should write to the National Paper Box Co., Kansas City, Mo., for prices on boxes, and for circulars describing this new fruit package.

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Strawberry Plants

have made a way for themselves. Our trade this season has far exceeded that of any previous year. Our plants have been as good as the best, and a long list of customers are satisfied. We are growing a larger acreage of plants than ever. Besides strawberry plants we will grow 2,000,000 raspberry and blackberry plants. Do not forget that our catalog deals in facts only and appeals to your common sense. Our new catalog will be ready to mail January 1, 1906. Address

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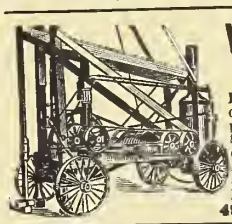

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A. I. Root Company, Pubs., Medina, Ohio.

"Do Inspectors Inspect?"

For a number of years we have found tacked to one or both ends of our box of nursery stock something called a certificate of nursery inspection and usually reads substantially as follows:

"(Name of state, town and date.) To Whom It May Concern: This is to certify that on the 9th and 10th days of September, 1904, the nursery stock of the John Doe Nursery Co., grown in that nursery in vicinity of Doetown, ... county, ...state, was examined and no indication found of the presence of San Jose scale, peach yellows, rosette or OTHER dangerous insects or plant diseases liable to be transferred on nursery stock from nursery to the orchard. This certificate is good for one year from date of inspection.

(Signed) _____

"Entomologist."

The last sentence we believe true and think the certificate will be just as good after one year, or five for that matter, as it ever was, but how about the trees? Do inspectors always inspect? It is claimed they do. The steamboat inspectors swore in court that the Slocum's life preservers were all right; but the victims will never believe it. Milk inspectors seldom find any water, and bank examiners are sometimes fooled by clever cashiers. It would seem that the tree inspector is being fooled by the nurseryman or helping him to fool the planter. We once received a box of 200 Wolf River 1-year trees, with usual number of certificates attached, and seven-eighths of trees were ruined with crown gall. We notified the state entomologist, and he replied, saying he would like very much to know what nursery firm was sending out such stock, but as he was getting pay for finding that out, we never told him. He admitted he didn't know who shipped the worthless stock, yet his own certificates were nailed to the box stating that contents was free from ALL disease. Received another box of 50 fine looking Ben Davis, 3 years old, with official labels. We are no disease expert, nor have enough political pull to ever aspire to office of state entomologist, yet we were in possession of those trees less than one-half hour before discovering that we had not a single tree worth planting; every tree was black and rotten hearted below the one-year wood, and we believe that a rotten-hearted tree is a diseased tree, notwithstanding the contrary statements of certificates.

Have within four years received at least two boxes of "certified" stock badly affected with woolly aphis, and though the trees were easily treated and saved, yet it proved that the certifcates meant absolutely nothing.We have examined many lots of trees shipped to this section the past three or four years, and we firmly believe that over half the shipments have been more or less affected with root knot or crown gall. Is it possible that any entomologist who has intelligence and influence enough to otbain an appointment doesn't know what crown gall is? The scrub orchardist is beginning to partially realize the danger from crown gall. If the inspector has not seen the roots he has not finished his job, and his certificate should read, "I have examined one end of trees and am guessing at the rest of it. I'm an expert and I find no indications of disease of any kind." Of course he's an expert or he wouldn't be drawing an expert's salary; but what we want is a practical kind of honest fellow, satisfied with about $2 per day, to go around with this expert and add his testimony to these certificates, and when he finds a case of crown gall put it down in black and white, "These trees have growth on roots which resemble walnuts and cocoanuts, and receiver should lose no time in burning them root and branch." That would put an end to the farce.

We would like very much to hear from others in other parts of our country on this subject. We would like to learn if all the poor and worthless stock is dumped into our territory. Some one please give his experience, and much oblige

HARRY W. LITTLEFIELD.

Brooks, Maine.

A Hanging Orchard of Wyoming.

The famous "hanging gardens" of the ancient city of Babylon were gardens planted high up on great towers. I have recently visited what may by parity be called a hanging orchard in the Big Horn Basin, in Wyoming.

Some weeks ago Mr. Henry Jordan of that region wrote The Fruit-Grower that he had made some pretty thorough tests in fruit growing there and was invited to write the results of his experience for the benefit of Fruit-Grower readers, but did not find time to do so. Hence, while in that vicinity some three weeks ago, I took occasion to pay the gentleman a visit.

The surface of the Big Horn Basin is largely disposed in "benches," or smooth ledges left ages ago by the receding waters of the great fresh-water lake which once filled this basin. Upon one of these, apparently some sixty feet above the waters of the Nowood, a tributary of Big Horn river, Mr. Jordan has erected a big modern roller mill to grind the wheat grown there—some of which, by the way, took first prize at St. Louis in competition with the world; the Big Horn wheat weighing 66 pounds to the struck bushel, and its nearest competitor—an Australian sample—being a pound and three-quarters lighter per bushel.

Mr. Jordan's huge mill, perched on the verge of the bench, makes a stately and conspicuous landmark, visible at a long distance. Alongside and surrounding his neat residence, he has five acres upon which he has pumped water for irrigation from the stream below, by the use of his mill-power. On this tract he has growing different varieties of strawberries, raspberries, blackberries, gooseberries, currants, grapes, plums, apricots, cherries, pears, apples, a few peach trees, pieplant, a vegetable garden, etc. Most of his trees look very thrifty, the plums especially so; and, notwithstanding the past winter has been one of unusual severity for that region, one of the first details to which he called my attention was a sprinkling of peach blossoms. He has chosen to plant the hardy varieties of apples especially, among them I recall the Wealthy, the Chicago and the Delicious.

Although Mr. Jordan's mill-crowned bench would appear almost inaccessible seen from the creek, it is nevertheless reached by good roadways and easy grades from two directions. The bench stretches for miles along the Nowood, and is to be brought under irrigation by a ditch taken out some miles up the stream. The valley having a fall of some nine feet per mile, a ditch, led along the face of the bench on a fall of two feet per mile, climbs some seven feet nearer to the top of the bench for each mile traversed.

A few miles north of the Nowood, on Shell creek, another tributary of the Big Horn, Mr. Jordan and others state that for some years past excellent results have been had with all sorts of fruit, notably with winter apples of standard varieties, and some good peaches have also been grown. I hope to look in on that valley on a subsequent visit.

I learn that at a state experimental station at Lander, in the southern part of the basin, some very satisfactory experiments in fruit growing have been made. Some of the results are given as follows: Strawberries, 7,000 quarts per acre; gooseberries, 13,000 quarts; white currants, 11,000 quarts; blackberries, 10,000 pounds; raspberries, 6,000 pounds per acre, etc. No dweller in the basin, that I have met, expresses any doubt that that region has a great future as a fruit country.

J. W. GREGORY.

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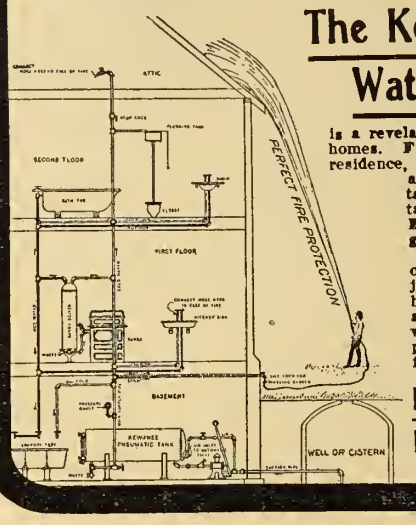
HE WAS A SKEPTIC

Last year through an advertisement in The Western Fruit-Grower we sold a Kewanee Pneumatic Water Supply outfit to the Huntsville Wholesale Nurseries, Huntsville, Ala. The manager, Mr. W. F. Heikes, was skeptical. He had to "be shown." He knows now. We have just filled a duplicate order from him. In sending this order Mr. Heikes says: "The first tank is giving perfect satisfaction. To a novice it seems inconceivable. I would not believe it if I had not seen it.



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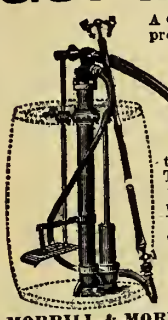

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Questions and Answers

J. G., Fulton County, Ky.—(1) I have seen a great variation in the old-fashioned Geniton apple, and would like to ask if there is one which is particularly red, a sweet one, as well as the greenish one we so often see? (2) Is the Ingram an improved Geniton, or only a variation? (3) Is there this same variation in Ben Davis? If so, what are the points of difference in Black Ben, Red Ben Davis and Ben Davis? (4) Is there a variation in York Imperial trees, some inclined to be very fruitful, and others inclined to be barren? I am much interested in the variation in apple trees of the same variety

Answer by Dr. Whitten: (1) There is a good deal of variation in the Geniton apple, or in any other variety of apple for that matter. The older the variety, or in other words, the longer it has been in cultivation, and the wider area over which it has been grown, the more notable these variations become. There is a sweet Geniton, which, however, is a seedling of the old Geniton, or Rails Jannet. Some Genitons are very much more highly colored than others on account of being grown in different soils and locations. Frequently high lands, or a southern slope where there is much sunlight, and especially a somewhat clayey soil, will induce a very high color of the fruit; while on low land which is very rich and loamy, favors wood and twig growth, and frequently results in low color of the fruit. (3) The Ingram is sometimes called an improved Geniton, although, however, it is a different variety, having been produced from a seed from a Geniton apple.

Aside from the variations in color of the fruit, due to difference in soil, amount of sunlight, climatic conditions, and other surroundings, there is also a variation in trees, which variations sometimes may be preserved in their offspring, as, for instance, the original Gravenstein apple, several centuries old, was of a bright yellow ground, about half covered with bright red stripes. Some growers have a preference for yellow apples and have propagated from trees which produced most nearly yellow fruit, or in other words, fruits which had the fewest red stripes. Other growers preferred a red apple and have propagated from those trees whose fruits had the most red stripes. In that way, we today have a yellow Gravenstein and a red Gravenstein, both of which came from the one parent stock, and their difference in color has been due to the cumulative effects from selection of the yellowest apples on the one hand and the reddest apples on the other hand. It is safe to say that in any given variety of apple variations could be secured and preserved for propagation from those trees which produce fruit slightly different from others, either in color or in size or in uniformity or in any other certain characteristic. It has been repeatedly demonstrated that by securing scions from the most fruitful trees in the orchard, young trees may be secured that will bear better than will trees propagated from scions of the less fruitful trees of the same variety.

J. C. W.—Can you tell me the cause of my winter varieties of apples specking on the trees last year? They commenced specking about August. The Shockley and other varieties that heretofore have kept nearly through the winter, were a total failure last year. All went, except one tree of an unknown variety. I have never sprayed, as I have had no such trouble before. (2) Why are peaches, plums and other soft-wooded fruit trees budded, while apples and pears are generally grafted? Does it make them more productive or longer-lived? I know plums will grow all right grafted, for I have grafted them, and have had no trouble in getting them to grow.

Answer by Dr. Whitten: It would be impossible to tell without seeing specimens of the apples what caused the specking during August. It may be due to a ripe rot or bitter rot or possibly some other fungous disease attacking them at that time. Just what the trouble was, however, can only be determined by seeing some of the fruit. (2) The question of whether a given fruit tree should be budded or grafted depends partly upon the convenience of the nurseryman. Some nurserymen make grafts in the winter of certain fruit trees and then bud the same kinds of trees in the summer in order to extend the period of propagation over a longer part of the year. Peaches are usually budded exclusively, however. They may be grafted, but usually they do not make a good growth from the graft. Peaches grafted here on the Experiment Station grounds were smaller at the end of three years of age than the average well-grown one-year old tree is. Certain kinds of plums succeed equally well whether budded or grafted and the same might be said of the pear and apple. The pear and apple make quite as good growth when budded as they do when grafted. Most nurserymen graft somewhat in the winter in order to occupy what would otherwise be an idle season.

M. G., Huron, Ind.—I have an orchard of 400 Grimes' Golden apple trees; planted three years, set 40 feet apart each way. Half of the orchard was cultivated in corn last year, and I sowed one-half to Whippoorwill cowpeas, turning the vines under in fall. Now those trees where the cowpeas were planted are in bloom, while the half cultivated in corn has no bloom. Can you offer an opinion as to the cause? I can detect no difference in the growth of the trees, all having grown nicely. Each year they have all been manured with stable manure. But why have the trees in the cowpea section bloomed, while those in the corn plat have not?

Answer by Dr. Whiteen: Just why the apple trees where the cowpeas were planted bloomed while the half of the orchard cultivated in corn did not, can be explained in no other way than that the clean cultivation of the soil where the corn was favored vegetable activity, or, in other words, leaf growth and twig growth. Usually, clean cultivation, especially of a very young tree, favors the continuation of length of growth of the twigs and growth of the leaves instead of the storage of food to make fruit buds. On the contrary, where the cowpeas were growing, lack of cultivation no doubt favored the early ripening of the wood and the storage of elaborated food which was used in making fruit buds out of what would otherwise have been wood buds. It may be said in the care of the fruit tree that anything which favors excessive vegetative activity, such as the youth of the tree or good cultivation, opposes the early setting of fruit buds; while anything which tends to slightly check the wood and leaf growth of a tree favors an early production of fruit buds. This is true only within reasonable limits, however, too pronounced check upon the growth of a tree may so weaken it that not even fruit buds will form, while on the other hand, when a tree has reached mature age, is of a fruitful variety, or is in soil or location which favors heavy setting of fruit, the best of cultivation and high fertilizing may even enable it to make more fruit than it otherwise would do.

P. R., Conception, Mo.—Our acetylene gas plant furnishes a good deal of carbide dust. We are told that this is good for orchards. What about this? If it is a good thing, how should it be used and when?

Answer by Dr. Whitten: The carbide dust from the acetylene gas plant may have somewhat the same fertilizing value as air-slaked lime. In order to know when to use it and when not to, one should know whether his soil needs any form of calcium or lime. In some cases an application of lime to the soil may make crops better for a year or two by setting free a large quantity of plant food, but the land may be worthless in subsequent years, because enough plant food has been set free that so much washed out of the land before the crops can get it. If a soil is at all sour, any form of lime added in reasonable quantity, will generally correct the sour or acid condition. In applying lime to orchards it is best to use only a moderate quantity at first and to begin on a small area. If it proves beneficial when used in moderate quantity, it is usually safe to apply it to the orchard.

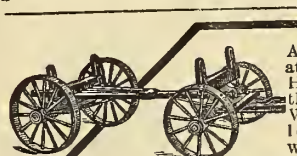
A. T. K. of Amana, Iowa, requests information as to the best time and also the method of grafting the grape. On mature plants, the cleft graft, similar to that used in top grafting on the apple, is the best method for grafting the grape. Remove the soil for a distance of three or four inches below the surface, saw the stem off square and make a cleft for the insertion of the scions, with an ordinary chisel. The scions should bear two buds. The lower end is trimmed wedge shape, and in inserting the scions special care should be taken to see that the live bark of the scion and the stock exactly come together, as it is from this point that the new growth begins. On large plants, insert two scions on opposite sides. The stem should the nbe bound below the point of union, using strips of old gunny sacks or cloth to keep the points of contact in close connection. Over this apply dressing of clay.

The grafting should be done quite early in the spring before growth begins or late in the spring after the budding season has passed. Late in the spring is an excellent time to do the work, providing the scions are dormant. The latter point is very essential. After the work is completed, refill about the plant and firm the soil.

A. T. ERWIN.
Iowa Exp. Station.

M. L. L. of Colby, Kan., requests information as to the proper time and manner of pruning the gooseberry.

With the gooseberry plant the best fruit is borne on the two and three-year-old wood. In pruning operations, one should plan to maintain a good supply of bearing wood of this quality by thinning out the older canes in successive years and gradually renew with younger wood. As the canes grow older they become weak and en-



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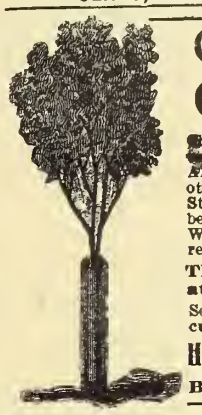

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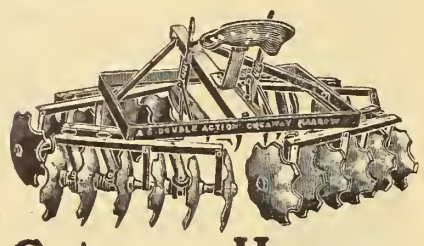

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feebled. These should be cut out, leaving the younger, more vigorous canes to bear the fruit.

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Protecting Trees Against Rabbits and Mice.—In answer to the query of H. W. L., Brooks, Me., will say that I have painted young apple, pear, peach, plum and cherry trees, also young grape vines, with Warnock's Tree Paint, and this spring all were unharmed by mice, although a few trees which were in old sod had mice nests within a foot of the body. The paint I applied last year looks just as well this spring, and I believe it will last for three years. I think the only thing which will necessitate another application is the expansion of the bark as the tree grows. Every tree started this spring in good shape. In regard to keeping ants off trees, will say that I noticed last year that ants will not travel over a painted surface; I think this must be because the paint has a slightly gummy feeling after it is dry. I painted one tree that was badly infested with oyster shell bark louse, in consequence of which I painted the tree entirely, branches and twigs. The paint destroyed the insects. I painted 750 trees from one inch to four inches in diameter with one gallon of paint, painting about 18 inches from the ground, at a cost of less than 1 cent per tree, which would be very cheap, even if it had to be done every year, which it does not.

L. T., Alba, Texas.—I wish to know what berry is the largest and best shipper. I don't care so much about their being productive, or early; what I want is the largest, toughest, best shipper I can find—one that will carry long distance to market; don't care if it is a little late, if it is deep red, tough and the biggest berry grown, which will hold up well.

There are a number of good, firm berries, among them Gandy, Aroma, etc. One will have to be selected which will succeed well in your location. In Alabama the Lady Thompson and Klondyke are favorite varieties; in Southern Missouri Gandy and Aroma, while in Hood River, Ore., they grow the Magoon and other varieties. You will have to see which does best for you.

I. N. B., Milford, Ark.—I have some Kieffer pear trees three years old; they are nice, thrifty trees and put on a nice crop of pears this year. They have since blighted very badly. What is the cause of this, and is there any remedy that will restore the tree? Is it best to cut out the trees affected?

The control of pear blight has not yet been satisfactorily solved. Many efforts have been made to find a satisfactory remedy, but it has not yet been found. Cutting out the blighted parts, well below the point where the disease seems to have extended, is the best remedy yet found. Even this is not satisfactory, and of course this is a hard task in a large orchard.

J. C. B., Saluda, N. C.—Will someone tell me through The Fruit-Grower, how to keep rabbits out of my Cumberland raspberries? They are the only variety troubled by rabbits.

Trees can be wrapped, but of course raspberry plants are too numerous. Who has had experience along this line?

I. N. A., Graphic, Ark.—Have any of the member of The Fruit-Grower Family had any success growing cherries on plum roots? If so, please report through The Fruit-Grower.

J. P., Tontitown, Ark.—Will some reader of The Fruit-Grower tell me how to keep cider sweet in summer time, and also how to convert cider into vinegar?

This matter has been discussed a number of times in The Fruit-Grower. To keep the cider sweet it will have to be sterilized by bringing almost to a boiling point, and then bottled and sealed air-tight. Now, who can give a satisfactory way of making cider vinegar on the farm? Let us have something on this line before autumn.

W. C. S., Oregonia, Ohio.—Will you please tell me what to do with plum trees that seem to have so little root that they will fall over to the ground from the force of a very light wind? I have twenty Lombard trees, planted four years, and if not staked and tied up they will not stand. They have had good care and are nice if they could be made to stand.

Answer by Dr. Whitten: The cause of the light roots of the plum trees that will enable them to fall over is likely due to the Lombards having been grafted or budded on some stock which does not grow to very large size. Occasionally, however, in certain soils not well adapted to the growth of the plum roots, the root system will not hold the trees in place. This is particularly true in soils where the roots of the trees do not grow down deep but grow very near the surface of the ground, so that they do not find sufficient anchorage except when the top of the soil is wet and muddy. I know of nothing which can be done to the trees to encourage stronger rooting, and the only way to support them, perhaps, is to stake them up.

A. W. R., Booneville, Ark.—If I sow my young orchard to rye or winter oats this coming fall, then next spring, when the grain has made proper growth, plow under a space of six feet each way from the row of trees and plant to cowpeas; the balance of grain allowed to stand until mature, and when removed, the ground to be plowed and planted to peas, the vines to be turned under. Will the pea vines plowed under compensate for the draft on the land occasioned by the oats or rye? My tree rows are 33 feet apart. This would leave 21 feet of grain between the rows. Trees were set this spring.

Answer by Dr. Whitten: Generally speaking it is not best to grow any kind of a sowed grain crop in a young orchard. Of course it is possible that in a good soil and with a very favorable season, you might sow strips of grain between the rows of your trees without injuring the trees, provided you cultivate one strip, as suggested, six feet wide each way from the tree. This is not generally a safe practice to follow, however. Personally, I would prefer to plant corn between the rows or some other cultivated crop. The cultivation given to corn would be just the kind of cultivation which would be necessary for the trees. Growing the corn, however, would not enable one to put in cowpeas except along the tree rows where there is no corn. I believe that in the majority of cases, however, one would get better results to grow corn two or three seasons and then put in cowpeas, than he would to try to crop to oats or wheat and grow cowpeas the same year. Cowpeas planted every two or three years will compensate for what is taken out of the soil by the corn crops in most soils.

J. E. G., Cabot, Ark.—I have a Kieffer pear orchard of about eight hundred trees. The trees were two years old when set out and they have been growing in orchard six years. Both springs of 1904 and 1905 they bloomed heavy, but shed their pear stems both seasons. In 1904 they produced about eighteen bushels of pears and this year I think they will not make over twenty-five bushels. They have a tall, dense top, never having been pruned nor the land was not cultivated during the past two years. Will some up-to-date pear specialist tell me what to do to make them produce a full crop of pears?

Answer by Dr. Whitten: Usually where pear trees blossom full but fail to fruit, and where there is no sign of blight, or when cold weather or some other visible cause does not prevent fruiting, one may conclude with reasonable certainty that the flowers are not capable of self fertilization, but need pollen from some other variety to perfectly fertilize their flowers. The Kieffer pear on our grounds has shown itself to be capable of setting fairly good crops of fruit without being crossed with other pollen. In some seasons, however, it has not proven to be fully self-fertile. It is very likely that if you should plant a small area of Garbers or of some other variety of pears which blossoms at the same time as the Kieffer, that your trees would set fruit as soon as the other variety comes into blossom. You can hasten the blossoming period of this other variety if you were to graft on a few branches here and there on your Kieffer pears with scions of Garber or some other early blossoming sort. These top grafts would blossom some the second year and should set a full crop of flowers the third year from grafting. We know of many instances where a solid block of pear trees of one variety has failed to set fruit until some other variety was brought into blossom near it, when the trees would become perfectly fruitful.

Although I am retiring from active operations in the orchard and fruit garden, I feel that I cannot be without The Fruit-Grower.—Snead Thomas, Marion, Ind.

The Fruit-Grower is the best fruit paper published. I have been taking it ever since it was started, and expect to continue taking it as long as I grow fruit.—J. D. Berryhill, Washburn, Mo.

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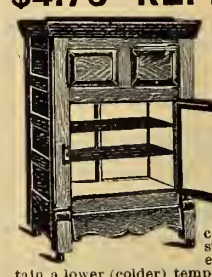

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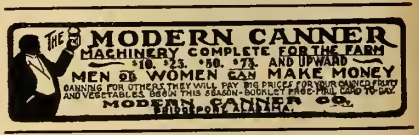

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If you are deaf or fear you are losing your hearing, you must surely have this book. If you have tried in vain to cure your deafness, this book will prove a blessing to you. It shows just how the inner tubes of the ear become blocked up, explains the terrible ringing, buzzing noises and how they can be stopped, and points the way to a safe and permanent cure for deafness. Fine drawings by skillful artists illustrate the ear and its wonderful parts. Every page is full of facts that deaf people should know if they wish to regain their hearing.

Don't put off sending for the book, as it is in great demand. Remember it is free. Write for it today. Address **Ear Specialist Sproule, 324 Trade Building, Boston.**

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Maj. Holsinger's Department

Cherries.

I am often asked, "Why do my cherries die?"

I find this difficulty myself. We have lost hundreds of cherries the past season. I think it is more the result of excessive moisture of last season than of the cold weather of the past winter. Of all the English Morello type, Osthelm seems to have suffered if possibly more than English Morello or Wragg. Fully one-half have died, and some are still dying. The Richmonds and Montmorency have suffered less. The cherry crop will not be more than 20 per cent of a crop on account of this loss of trees and severe frost. Truly it appears more and more difficult to grow cherries. Is their constitution becoming weakened? It seems so. To secure cherries for the future we must plant, thereby keeping up the supply. But cherry trees are high in price, you say. We hope to see the trees cheaper in the near future. Whether this be so or not, we will still plant.

First Outdoor Meet of Missouri Valley Society.

What a lovely day greeted us in our outing at the beautiful home of Secretary L. A. Goodman! The weather was delightful, with just clouds enough to obscure the sun and make shade of no value. It would be impossible to have had a more delightful day.

The old Missouri Valley did herself proud. The membership present was representative of her best, few being absent. We had the pleasure of the presence of Dr. Whitten and Mr. Dutcher of the state society. It is ever a pleasure to meet these friends, as they are not only among the advanced in horticultural thought, but congenial and companionable.

There were many of the old members who had not been so closely associated with us for some time. Among these our old veteran Dan Carpenter and his cob pipe. Dan was himself and we greeted him with unction.

S. C. Gregg, in times past one of our active members, was present. It was like seeing one from the grave, as we had mourned him dead. This, he assured us, was a mistake, as it was another Gregg. Mr. Gregg claims the distinction of being the oldest born citizen in Jackson county, having nearly eighty years to his credit. Mr. Ambrose Key, another old member, was present, very frail, but cheered by the inspiration of fraternal greetings. Also John C. Blair, whose demise was published in one of the Kansas City papers not long since. These were among the veterans of the society whom we are always glad to greet.

The dinner could not have been excelled. All enjoyed the good things of life. The host and hostess, assisted by their daughters, made all feel welcome.

Meeting was called by Vice-President Gano, as President Geo. W. Holsinger was on the program for a paper. One feature that adds to the growth of the society is in the indomitable persistence of J. L. Williams, who comprises the committee on membership, to be heard in the interests of the society. Some eight or ten new members were thus secured.

George W. Holsinger's paper on "Pleasures and Disappointments in Fruit Growing," was a splendid effort. We hope to present it to our readers entire.

Prof. M. C. Findlay of Park College on "The Development of Foliage" was an interesting talk, with charts showing leaf developemnt.

"A School Man's Notion of Horticulture," by Superintendent Rose of Rosedale City schools, was a happy effort, being both humorous and instructive. As we expect to be able to present this paper entire with the other, we shall not attempt to quote from it. All three subjects were discussed by Messrs. Whitten, Dutcher, Darche, Williams and others.

On reports of orcharrs, Dr. Whitten, president of the Missouri State Horticultural Society, was called on to give fruit conditions in Missouri. He said in part: "The outlook is poor indeed. Two or three weeks ago the chances were bright that the crop would come out all right, but our hopes have been blasted, as our fruits. This is particularly the case with our apple crop. The peach fell by the wayside during the zero weather of the winter, while the late frosts during blooming time hurt the apple. The injury is fairly general, although there are spots that have not suffered at all, and others that will suffer a total loss. The whole crop will hardly reach 40 per cent of the normal yield."

Mr. Goodman coincided with what Dr. Whitten said, placing Missouri at even less than 40 per cent of a crop.

Mr. Lowmiller said his crop had promised well, but has gone glimmering.

From Kansas the report was more favorable. It was claimed recently by Judge Wellhouse that he expected 100,000 bushels of apples.

Williams: "I will have at least 1,000 bushels of apples."

We remarked that we were surprised at an orchard of our planting, which we visited not over ten days ago, at the fine prospect for a bumper crop of Jonathan, Willow Twig and Winesap.

G. C. Johnson of Argentine claims a good crop, while Diehl of Olathe, Kan., says there won't be more than 10 per cent of a crop in his vicinity.

Mr. Gano reports a fair crop of plums and cherries. Holsinger Bros. claim about one-half a crop of indifferent strawberries and raspberries, but a fine prospect for blackberries.

Dan Carpenter of Gashland reports a splendid crop of strawberries. We took occasion to remark on not only the variableness of the reports received from our members, but from our own observation. Thus, while our pears are nearly all gone, yet on one elevation there are trees that are quite full enough. We can see no reason for this, yet these conditions exist. The why? Well, we give it up.

On account of difficulties, Mr. Butterfield asked a change in time of the Lee's Summit meeting. Not wishing to depart from the long established rule of meeting on the third Saturday, the Holsinger brothers agreed to change time of meeting with Butterfield. So note the June meeting will be at the Holsinger Brothers,' Rosedale, Kan.

There were a few specimen apples by Lowmiller of Parkville, while a number of varieties of strawberries by the Holsinger Brothers of Rosedale, Kan. There were auctioned for the benefit of the society.

Meeting adjourned, after which farewell greetings. F. H.

The Chesnut Dewberry.

Mr. J. T. Chesnut, Keene, Texas, sent The Fruit-Grower a small crate of the dewberry bearing his name, on May 28th. The fruit arrived in St. Joseph on May 30, but on account of Memorial Day holiday it was not sampled until the 31st. Notwithstanding the fact that the berries came by express, and had been so long from the vines, they were in fairly good coidition. The fruit was very ripe, yet had held up remarkably well. Mr. Chesnut writes that this variety is very early, and that it has been well received by those who have known it.

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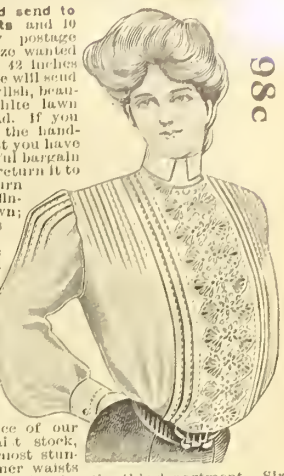
Only 98c WAIST



98c

Cut this ad. out and send to us, enclose 98 cents and 10 cents extra to pay postage ($1.08 in all), state size wanted (sizes run from 32 to 42 inches bust measure), and we will send you this new 1905 stylish, beautifully trimmed, white lawn waist by mail, prepaid. If you do not admit it is the handsomest summer waist you have ever seen, a wonderful bargain at the price, simply return it to us and we will return your $1.08. Made of finest white French lawn; the entire front is made of beautiful embroidery in the latest design and trimmed with side plaits and tucks, with the newest tucked full sleeves; two plaits in back from neck to waist. Detachable crushed collar and soft finished cuffs of the same material. Positively the choice of our entire immense wait stock, the best value and most stunning effect in summer waists offered at only 98 cents to advertise this department. Six thousand will be sold at 98 cents. Order today, get this most wonderful bargain value and wear the most stylish waist in your town at less than wholesale cost. Our handsome, complete catalogue, showing everything in ladies' and misses' suits, skirts and waists, full of the most beautiful styles, all at the lowest possible prices, sent free on request. Ask for our free catalogue of LADIES' WEARING APPAREL. Address,
SEARS, ROEBUCK & CO., CHICAGO, ILL.

Gage's Tree Catalogue

Did you get it? You are unfortunate if you bought trees without consulting it. Send a postal and one will be mailed you. We grow a general line of fruit and forest trees, and small fruits.

GAGE COUNTY NURSERIES
J. A. Gage, Prop., Beatrice, Neb.

The one Balanced Ration—supplying both protein and carbo-hydrates—for fattening cattle, sheep and hogs, is—

COWPEAS

They also return more Nitrogen to the Soil than any other crop—except Alfalfa and Clover—the price per acre is very low.

KOSS BROTHERS SEED HOUSE,
Ask for Prices. Wichita, Kansas.

Cow Peas

Whippoorwill and Black
$1.50 Per Bushel

FRITH & CO., NASHVILLE, TENN.

Ford Seed Co.

Can supply your wants in Seed Wheat, Crimson Clover, Bulbs for Fall Planting, and all kinds of seeds and nursery stock for Fall Planting. Will mail our fall list as soon as issued to all who apply. We will treat you right.

Ford Seed Co., Ravenna, O.

WANTED
A PROPAGATOR

thoroughly experienced in practical nursery work in all its branches, who wants a permanent position. Give full particulars and references and state salary wanted, etc.

Hanford Nurseries, Oakesdale, Wash.

Nursery Stock

We can fill your wants in Strawberry, Raspberry and Blackberry Plants; Grapes, Currants, Gooseberries, Trees, etc., for Fall or Spring delivery. Write us your wants and we will endeavor to please you.

ELMHURST NURSERY
M. E. Chandler, Prop. Argentine, Kan.

Fruit Growers send 10 cents and 5 names of fruit growers for 6 months' trial subscription to THE PEACH GROWER, Savannah, Ga. It is a practical paper for growers of all kinds of fruit, of peculiar interest to peach growers. Published in the greatest peach state in the world, it publishes much matter of interest to peach growers everywhere.

Address The Peach Grower, Savannah, Ga.

When writing to advertisers, always mention The Fruit-Grower.

$20.00 AN EAR
FOR 25 EARS, $500.00
Is what the first prize winner will get in the
FARM, FIELD & FIRESIDE
$3,000 PRIZE CORN CONTEST
All subscribers to paper can enter without extra cost. Price, $1 a year for one of the oldest and best farm weeklies. Special terms to agents. Contest closes Jan. 1, 1905. Write for particulars. FARM, FIELD AND FIRESIDE, 98 Masonic Temple, Chicago.

PILES NO MONEY TILL CURED. 27 YEARS ESTABLISHED
We send FREE and postpaid a 232-page treatise on Piles, Fistula and Diseases of the Rectum; also 108-page illus. treatise on Diseases of Women. Of the thousands cured by our mild method, none paid a cent till cured—we furnish their names on application.
DRS. THORNTON & MINOR, 1023 Oak St., Kansas City, Mo. and 3969 Olive Street, St. Louis, Mo.

A Busy Year

for Old Trusty. Last season was a hummer, but we've got our breath and are going to keep going.

SUMMER PRICES ON
OLD TRUSTY

for a few months. It will be a good time to outfit. Same machines, same selling plans.
40 Days Free Trial, 5 Years Guarantee.
Have you ever seen my catalogue? **It is Free.**
INCUBATOR JOHNSON, Clay Center, Neb.

LOSS BY LICE
on poultry amounts to many times the cost of **Lambert's Death to Lice**—the sure preventive. Loss can be saved and profit made by its use. Frees sitting hens from lice without harming eggs or chicks. A trial 10c box will prove it. 100 oz., by express. $1.00.
O. K. STOCK FOOD CO.,
D. J. Lambert, Vice-Pres.
426 Monon Bldg., Chicago, Ill.

DON'T BE BOTHERED

with lice on poultry. **Schild's Lightning Lice Killing Machine** instantly removes them from tiniest chick or fat gobbler. 3 sizes. Also Poultry Bits, Lice Murder, Lightning Lice Killing Powder, etc. Catalog free.
CHARLES SCHILD CO.,
801 Detroit St. Cleveland, O.

WIRE BOARD FENCING
Strong, Durable, Economical
Easily and cheaply erected.
Write for free sample, etc.
The Truss & Cable Fence Co. 74 Doan Ave., Cleveland, O.

"The Best of Prophets
of the future is the past." The first Page Fences built have been in use 20 years and are still good fences. We make better fences now than ever before: **Use stronger wire, heavier cross-bars, thicker galvanizing.** Write.
PAGE WOVEN WIRE FENCE CO.
Box 8256, Adrian, Mich.

SHOO-FLY THE ANIMALS' FRIEND
Kills every FLY it strikes. Keeps the rest off Cows while in pasture, longer than any imitation. Used by leading dairymen since 1885. If your dealer does not keep the genuine, send us $1.00, will return latest Improved 3-Tube Sprayer and enough "Shoo-Fly" to protect 200 cows. Name Exp. Office. **Free Booklet.**
SHOO-FLY MFG. CO., 1025 Fairmount, Philadelphia, Pa.
EDITOR knows from experience "Shoo-Fly" is O. K.

The National Fruit Grower

ST. JOSEPH, MICHIGAN
A large, handsomely printed monthly magazine devoted to the fruit industry. Ably edited. Every issue full of good things. Latest and best methods of cultivation, handling and marketing all kinds of fruits. Articles from the best horticultural writers appear in its columns. WORTH TEN TIMES ITS COST.
TERMS:—50c. per year; $1.00 for 3 years. Trial 3 months for 10c and 3 names and addresses of live fruit growers. Sample copy free.
Please mention paper in which you saw this ad.

SUPERFLUOUS HAIR
Dr. Rhodes' New Hair Remover

will instantly and permanently remove undesirable hair from the face, neck, etc. Price $1.00.
FREE TRIAL—We are not afraid to have you try this wonderful preparation, and you may do so FREE. If you will send us 10c to cover cost of postage and packing, we will send you a trial bottle; not a dollar bottle, of course, but sufficient to remove considerable hair and furnish a good test. Address
DR. A. Y. RHODES, CO., Lowell, Mass.

St. Joseph Business University
WE TEACH
CHARLIERS Shorthand in from seven to ten weeks, a marvelous system. Also teach **Bookkeeping, Penmanship, Telegraphy and English.**

Graduates secure positions. Fine equipment. Superior faculty. Fall term begins Sept. 1, 1904. Catalog free.
E. E. GARD, St. Joseph, Mo.

Seven Great Colleges
Chillicothe Normal College
Chillicothe Commercial College
Chillicothe Shorthand College
Chillicothe Telegraphy College
Chillicothe Pen Art College
Chillicothe Musical College
Chillicothe Typewriting College
For Free Catalog address
Allen Moore, Pres., Chillicothe, Mo.
Car fare paid as per schedule.

Poultry Department

Poultry and Fruit Go Hand in Hand.

I have in mind a small farm, whose owner grows fruit and keeps poultry for a living. The size of the place is about eighteen acres and the age eight years. The land was poor to commence with and the attendant's means small, so rapid progress in building up was impossible.

But practical knowledge of both branches of the business worked wonders in the building up of the place. Still there is not one-half of the land planted to fruit yet. The fruits grown on the place are of various kinds, some tree fruits, plants and vines. The fowls on the place are nearly all separately housed and yarded. The chicks are partly hatched in incubators and reared in brooders.

The income from the various products for the past five years are as follows:

	Poultry	Eggs	Fruit
1900 ...$	113.50 $	164.00 $	322.70
1901 ...	190.10	246.75	108.91
1902 ...	226.50	255.25	418.05
1903 ...	198.50	424.81	702.00
1904 ...	422.00	282.09	509.87
	$1,150.60	$1,372.90	$2,061.53

Total sales fowls and eggs for five years are $2,523.50. The products of the fowls are greater by $461.97 than the fruit for same length of time.

But the time is not far distant when the fruits of the place will outstrip the fowls, as the tree fruits are just coming to bearing age.

If the berry fields were increased in size the income from fruits could be increased very fast, as they come into bearing early and seldom "lose out" as do the tree fruits.

E. W. GEER.

Farmington, Mo.

An Acre of Chickens.

Someone has asked: "How many chickens to an acre of ground?" And others have figured on forty and fifty acre tracts alive with chickens—chickens by the hundreds and the thousands—great rambling flocks of fowls all dwelling together in peace and happiness and as prolific in eggs as trees are in leaves—all one glad summer day of gathering in the eggs, sending them to market and bringing home the dollars. How nice, how pretty on paper! But the cold, cheerless fact is, that it will not pan out that way.

And yet, chickens may be kept by the acre, and managed so as to be healthy and profitable; but first there must be some well-defined plan—a system outlined, and some money and skilled labor expended before a single chicken is turned out to graze.

In the first place, colonizing chickens in large numbers on the same farm or ranch has never been successful or profitable in a sense, nor to an extent that would make it worth while; for they will soon all mob up, and make a scramble of it at feeding time, until there is no system or distinction in management, or of flocks; and then all revenue is stopped.

The only way to keep chickens by the acre, or to keep them in large numbers on any given space where one person, or two or three persons, may attend to them, is to yard them. This is the fancier's system, and it is also the successful marketer's system.

An acre of ground, with suitable houses, and properly fenced, will accommodate between six and seven hundred fowls—that is, it will afford them space for exercising, for sunshine and air; but their feed would have to be obtained from some other source, for they would scarcely let a sprig of grass grow within the acre limit. The ground would, of necessity, have to be fenced and sub-fenced and houses erected at certain distances apart.

An acre of ground is about two hundred feet square, and in preparing it for the fowls it should be divided into thirty-two yards, each twenty-five feet wide by fifty feet in length. This would make four rows of yards, and necessitate two rows of houses. Each house should be at a junction point of four yards, which would call for but eight houses for the thirty-two yards—four compartments to each house. An open passway should extend from end to end of the grounds, in line with each row of houses, and another passway midway from the upper to lower center of the yarded space, so as to make all of the houses easy of approach. In each yard of twenty-five by fifty, twenty hens and a cock should be placed, which would give a total of six hundred and forty females to the acre, and some thirty odd roosters. In connection with each house there should be an open shed for the purpose of feeding and scratching, so that the fowls could exercise according to their natural instinct. Hens so yarded, with their grain thrown in straw and leaves, to work out, and fed a green cut bone ration three times weekly, should average a dozen and a half eggs a month per hen during the first six months of the year.

This average in laying would make a total yield of nine hundred and sixty dozen eggs a month, worth at least ten cents a dozen, or ninety-six dollars. From this gross income we would average seven cents per hen each month—or a total of forty-five dollars, which would leave a net profit per acre for the hens enclosed of $51.

Is one should start early in the year and become established by the middle of April, it should be possible to get a good revenue for three months, or until the middle of July. After that date the yarded hens would cease to lay profitably, and should be sold. It is assumed that, at the outset, the hens would be purchased, and also that they could be disposed of at the close of the egg season at their original cost price.

This is the only practical way to keep hens for their eggs only. Such a plant would, of course, cost something, but it would be good for several seasons; and next season the owner could start in much earlier—say by January the first, and keep going until mid July, by which time he should have made several hundred dollars. With experience, and sufficient help, several acres of hens might be kept in this way, and a much larger revenue derived than is possible from only one acre. Fifty dollars a month income for six months would mean $300 per acre for the season. Is there any other crop that would pay as well?—H. B. Geer in Farm and Ranch.

Fertility in Eggs.

A great many experiments have been conducted to ascertain, if possible, the cause of lack of fertility in eggs. Many experts are at sea, who have thought that the discovery had been made. One plan is pursued to ascertain strong fertility and when the experiment is made a second time there is a different result. Again there may be strong fertility and low vitality in the chick that is hatched or in the embryo which fails to hatch. The best of us are willing to confess that there is much of mystery in the business of incubation and the causes of eggs failing to hatch.

Some experiments have been conducted in the Canada Experiment Station to gain some information along this line. Different breeds and cross-breeds were tested and also eggs from hens which were kept in warm houses and hens in houses that were cold, as the ordinary house where poultry is kept. Fresh air and exercise are important and such cannot always be obtained in warm houses. The following is a summary of the results of such experiments:

1. The generous and gently stimulating rations given to the fowls kept in cold houses did not seem to affect the strength of the germs of the eggs laid by them, as similar rations apparently did in the case of the hens kept in artificially warmed quarters.

2. Eggs laid in early December by the hens in artificially warmed houses showed a greater percentage of strong germs than did eggs laid by them later in the season.

3. Eggs laid by the same hens in early spring showed a satisfactory percentage of fertility, but the weakest germs.

4. The most striking and gratifying results were obtained from the fowls which, like their parent stock, had never known warm quarters. From fifty-five eggs laid by these fowls in early spring—after laying well during the winter—forty-eight strong chickens were hatched. In contrast with this are seventeen chickens from fifty-two eggs laid by hens kept in warmed, but comparatively limited quarters.

5. Results were strongly in favor of the average farm conditions. One successful farmer has an open shed attached to his poultry house, and to this shed, which is protected by a curtain in stormy weather, his fowls have access, so obtaining fresh air and exercise. The latter is secured by throwing grain in litter which is always on the floor of the shed.

Maxwell Phillips, Denver, Okla., says he painted some trees with white lead and linseed oil, to protect against rabbits—and the plan didn't work, for the Oklahoma rabbits gnawed the bark just the same.

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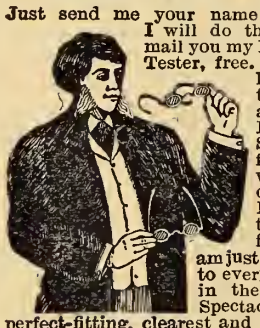
SPECTACLE WEARERS.

Just send me your name and address and I will do this: First I will mail you my Perfect Home Eye Tester, free. Then (after you have sent me your test) I will mail you a Perfect Fitting Five Dollar Family Set of Spectacles for only $1, which will include a pair of my Handsome Rolled Gold Spectacles, absolutely free of charge. I am just doing this to prove to every spectacle wearer in the world that my Spectacles are the most perfect-fitting, clearest and best in the world today, and I will return your dollar as cheerfully as you send it, if you yourself don't find them to be the finest, clearest and best you have ever bought at any price, anywhere. Address:—



I WANT AGENTS ALSO.

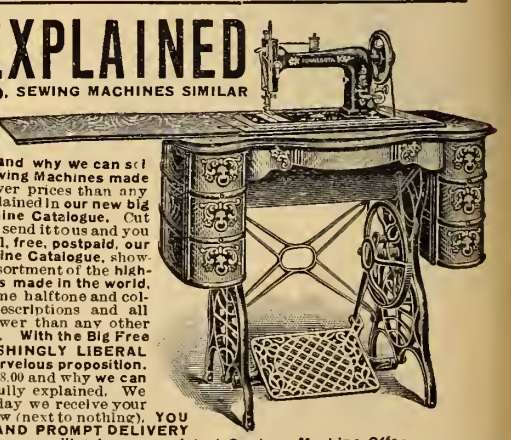
And any man or woman (also storekeepers), without any previous experience whatever can fit the weakest eyes with my Improved Metal Eye Tester, which is so simple that anyone can test with it with absolute correctness. If you are not earning at least $25.00 weekly don't delay another minute as my agents are making from $25.00 to $100.00 every week, selling my famous Spectacles, either in their homes, traveling, or in stores. My Agent's Outfit includes my Latest Improved Metal Eye Tester, a Handsome Traveling Spectacle Case and everything else necessary to start you right, also the necessary documents showing that Agents need no license anywhere.

Write me at once as this is the best time to begin. Address:—

DR. HAUX SPECTACLE CO., Haux Bldg., St. Louis, Mo.
NOTE.—The above is the largest Mail Spectacle House in the United States, and perfectly reliable.

$5 PRICE EXPLAINED

FOR $5.00 TO $8.00. SEWING MACHINES SIMILAR to the MACHINE ILLUSTRATED hereon, have been widely advertised. How sewing machines can be offered at these prices **and why we can sell the HIGHEST GRADE Sewing Machines made in the world** at much lower prices than any other house is all fully explained **in our new big free Special Sewing Machine Catalogue.** Cut this advertisement out and send it to us and you will receive, by return mail, **free, postpaid, our new big free Sewing Machine Catalogue,** showing the most complete assortment of the **highest grade Sewing Machines made in the world,** all shown in large handsome halftone and colored illustrations, full descriptions and all priced at prices much lower than any other house can possibly make. **With the Big Free Catalogue** you will receive **THE MOST ASTONISHINGLY LIBERAL Sewing Machine offer** ever heard of, a new and **marvelous proposition.** How others can offer sewing machines at $5.00 to $8.00 and why **we can sell at much lower prices than all others** will be fully explained. We will explain why we can ship your machine the day we receive your order, how we make the freight charges so very low (next to nothing). **YOU WILL GET OUR FREE TRIAL OFFER, SAFE AND PROMPT DELIVERY GUARANTEE, 20-year Binding Quality Guarantee, you will get our very latest Sewing Machine Offer.**



INSTALLMENT, PARTIAL PAYMENT PLAN EXPLAINED. How new sewing machines are exchanged for old ones, all fully explained when you write for **Our Free SEWING MACHINE CATALOGUE. HAVE YOU ANY USE FOR A SEWING MACHINE?** If you have don't fail to cut this advertisement out today and mail to us. If you can't use a sewing machine at any price, call your neighbor's attention to this advertisement. Don't buy any kind of a sewing machine at any price, for cash, on time or on installments, or don't trade your old machine for a new one until you get **our Big New Sewing Machine Catalogue FREE, with all our new offers,** with everything explained, **ALL FREE FOR THE ASKING.** We will tell you something about sewing machines you ought to know. **WRITE TODAY, and be sure to mention this paper. DO IT NOW. Address,**
SEARS, ROEBUCK & CO., CHICAGO, ILLINOIS.

OWN A FANNING MILL.

Increase Your Profits by Cleaning, Separating and Grading Grain and Seed.

How to get a Valuable Booklet Free.

Every farmer ought to own a first-class fanning mill.

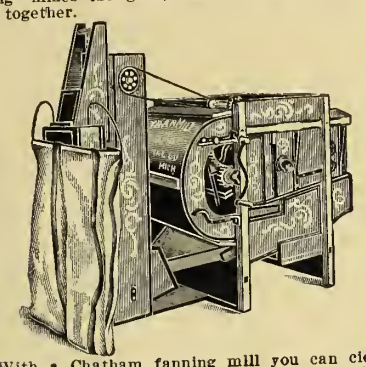
"Neither wise men nor fools can work without tools."

So runs the old adage, and it is just as true today as when it first gained currency hundreds of years ago.

You can't have clean seed without a fanning mill. There will be a certain percentage of weed seeds and dirt in every bushel that has not been run through a fanning mill.

And in spite of all your care, some oats or other grain will get mixed in with your wheat unless you use the fanning mill.

Then again, it is utterly impossible to have your grain of perfect grade if you take it just as it comes from the threshing machine. The threshing machine isn't in the grain-grading business—it shells out any grain that comes along—mixes the good, the bad and indifferent all together.



With a Chatham fanning mill you can clean, separate and grade your grain and seed all at one operation; for that reason we recommend the Chatham to our readers.

This machine, manufactured by The Manson Campbell Co., Ltd., Dept. 33 A, Detroit, Mich., has been on the market for over fifteen years and is in use by progressive grain growers the world over.

We want every one of our subscribers to read up on the advantages of clean seed, grain grading and grain breeding. By writing a letter to The Manson Campbell Co., Ltd., mentioning this paper, you can get the very latest and most authoritative information on every phase of this important subject. The Chatham fanning mill not only enables you to do away with the weed nuisance, but to increase the yield of every acre sown or planted, and insures you the highest market price for your crops. Just ask for the free book, "How to Make Dollars out of Wind," when writing to the company. It is a book every wide awake farmer should read.

GOOD PACKING OF NURSERY STOCK.

Stark Bros. Nurseries & Orchards Co., Louisiana, Mo., send the following letter, received from a customer in Corea:

"Though the expression of my thanks for the splendid packing and thoroughness with which you carried out my orders has been delayed, I trust it will be none the less gratifying. During fifteen years residence in the East I have had, I think, two orders come though as I ordered them; yours is one. You not only filled the order completely and correctly with the finest lot of yearling trees I have seen, but carried out shipping instructions so that the shipment arrived on time. I am still out a large shipment from a neighbor nurseryman of yours who failed to pay proper attention to instructions, and for all he seems to care, I am likely to always be out. You will understand how a number of experiences like this make me doubly grateful for your thorough business procedure. The trees came through in a little more than two months and every bud on every tree was alive and apparently as fresh as when dug.

I cannot close without giving you special thanks for your liberality. Instead of putting in as a premium a lot of old things you could not sell, you put in a liberal part of the body of my order, free. I believe in your western country they would call this "white."

Please accept my congratulations on your splendid victory in the "Black Ben-Gano" controversy.

I will be sending you, I hope, an order this autumn and would like some evergreens such as you do not handle. Can you buy them for me and ship with your order? I have had so much trouble, delay and expense getting trees that were dead from "Don't care firms," that I would feel much more comfortable sending to you.

M. C. FENWICK,
Wonsaw, Korea, Feb. 16th, 1905.

This letter reached us May 16th.—Stark Bros.

EVERLASTING FENCE POSTS.

The weak spot in the fence proposition is the post, and the most expensive one, too. The fence material has been developed to a point of great economy of cost, but posts have gone steadily higher in price. More than a hundred expedients have been tried with more or less indifferent success, but a post which appeals to us as a good proposition is the Samson offered for the first time to our readers by A. D. Mackay & Co. As will be seen by reference to the ad this is a post of concrete made permanent and durable by steel truss rods and core plates which make an absolutely indestructable fabric. The machinery for making these is very simple and it affords an opportunity for one to get into a nice profitable business with a merely nominal investment. We consider the Samson a thoroughly practical post and commend it to our readers. Write the makers today for full information. Address A. D. Mackay & Co., Dept. 15, 84 Washington St., Chicago, and mention this paper.

The Bruce Bargain Co. of Pleasant Hill, Mo., announce on our farms for sale page, some attractive bargains in Missouri farm lands, located close to Kansas City, and at prices that will not keep long on the market. These farms are money makers, and if you are going to buy, find out more about these farms by writing the above company.

Opportunities in Pacific Northwest

For Farmers, Fruit-Growers, Dairymen and Stockmen. Land cheap and virgin soil; no dronghts, blizzards or floods. Reliable information about this wonderful country in THE RANCH, SEATTLE, WASH. Send 50 cents for one year's subscription.

ROYALTY PAID on SONG POEMS

and Musical Compositions. We arrange and popularize. PIONEER MUSIC PUB. CO., (Inc.) B 379, Manhattan Building, Chicago, Illinois.

FruitFarms and Fruit Land for Sale

This department is for the benefit of Fruit-Grower readers who wish to buy, sell or lease farm lands. All advertisements of this nature will be inserted for a charge of 2 cents per word, each initial and number to count as a word. No display type will be used in ads which are accepted at this reduced rate, and all charges must be paid in advance. The rate of 2 cents per word is for each insertion. Count the words when sending your advertisement, and the cost can be easily ascertained. THE FRUIT-GROWER CO., St. Joseph, Mo.

FRUIT, FARM and Grazing Lands in Arkansas, from $3 to $25 per acre. Fertile soil, healthful location, mild climate. No better land for price. Address Charles H. Smythe, 506 American Bank Building, Kansas City, Mo.

Only $3,000 will buy residence and fruit farm, ¾ mile from court house, Knoxville, Iowa (population 3500), 35 miles southeast of Des Moines. House seven rooms, stable, etc.; cement cave, well, cistern; land 6.3 acres; 220 apples, 145 cherries, 40 plums, 50 peaches, 20 pears, raspberries, currants, strawberries, gooseberries, grapes, etc.; pasture for cow. Beautiful location, close to school and churches; city sidewalk to gate. Write or come; will bear closest investigation. G. W. Frazier, Knoxville, Iowa.

FOR SALE—I have three fine pieces of property which I must sell before August 1st, as the owner is compelled to give them up on account of business elsewhere which needs all of his attention. They are located within one mile of railroad, and one them on a beautiful lake. A house of eight rooms has wide verandas, good barn, 23 acres, 500 peach trees, 250 oranges, besides other fruits. This is a beautiful winter home. 2. A five-room house, 160 acres, 25 cleared, balance pine timber, 200 peach trees, and other fruits. 3. 160 acres of excellent land all pine timber near Lake Crescent and R. R. station. These places will be sold for $5,500.00 cash, if taken at once. This is a bargain; don't miss it. For particulars address C. Thos. Shinn & Co., Pomona, Florida.

FOR SALE—40-acre fruit farm, 2 miles from Olney, Ill.; 25 acres in good bearing apple trees, besides other fruit; near school and church; good 6-room house and cellar, new barn and out-buildings, all in first-class condition; plenty of good water. Price $2,800. W. A. WHEELER, Lock Box 299, Redlands, Cal.

LARGE FRUIT FARM VERY CHEAP—Only half mile from railroad station, 300 acres, all river bottom, every acre fine fruit land, (In fact I guarantee there is no better fruit land in Colorado) also potatoes, alfalfa or grain. Fine stock range adjacent to land, perpetual water right, all under fence. Now under cultivation 30 acres alfalfa, 20 acres potatoes, 1500 peach trees. Properly handled this farm can be made to pay 20 per cent on $40,000 within five years. Price $15,000, easy terms. Owner is engaged in other business and cannot give it the needed attention. Write or call on J. F. Moore, owner, Grand Junction, Colorado.

FOR SALE.—Apple orchard, 160 acres. 100 acres set in apple trees, 8 to 12 years old; located in Barton County, Mo. For particulars inquire of C. C. Clemons & Co., Kansas City, Mo.

FOR SALE.—Bargains in Delaware land. Catalogue free. Jester & Masten, real estate brokers, Felton, Del.

LANDS CHEAP.

Large bodies of land and ranches; timber land, fruit and truck farms in Kansas, Oklahoma, Texas, Old Mexico, Louisiana, Arkansas, Southern Missouri, Colorado, New Mexico and California. Tell me what you want and where you want it and how much money you will invest if suited and I will send you list of bargains of the kind you want in that locality. I also have small farms and ranches in all parts of said states. I am working above mentioned territory thoroughly. Write me and see how well and how promptly I will serve you. I have land at 35 cents to $35 per acre.

GEORGE W. MORRIS, LYNDON, KAN.

We are the largest dealers in real estate in Grand Valley, the famous peach, apple and pear growing section of Western Colorado. Orchards here 8 years old net the growers from $500 to $700 per acre. The climate is the best in the world and is a specific for lung and throat troubles and asthma. Write us for information. The Home Loan & Investment Co., 357 Main St., Grand Junction, Colo.

A GOOD PLACE TO LOCATE—On plateau of Cumberland Co., Tennessee, where fruit, corn and potatoes grow to perfection. No cyclones, no floods, no great storms of any kind; less wind than any place you ever lived in; no mosquitoes; perfect natural drainage; best freestone water; very healthy, delightful summers; can plow all winter; abundance of free range for stock. Land $3 to $10 per acre. Write A. E. Payne, Crossville, Tenn.

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REAL ESTATE AGENTS

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FARMING AND STOCK RAISING THE YEAR AROUND.
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QUICK TIME, BEST SERVICE, SPECIAL HOMESEEKERS' RATES, AND FREE RECLINING CHAIR CARS.

THINK THE MATTER OVER, AND WRITE US FOR LITERATURE AND DETAILED INFORMATION.

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ST. JOSEPH, MISSOURI

AN ILLUSTRATED MONTHLY MAGAZINE FOR PROGRESSIVE AMERICAN FARMERS

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Volume Sixteen JULY, 1905 *Number Seven*

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IRRIGON is one of the newer irrigated sections of the Northwest.

IRRIGON is 179 miles east of Portland, Oregon, 160 miles west of Baker City, Oregon, and 220 miles southwest of Spokane, Wash.

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Oregon Land & Water Co.

F. B. Holbrook, Superintendent

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This will keep them clean and sweet—absolutely free from impurities.

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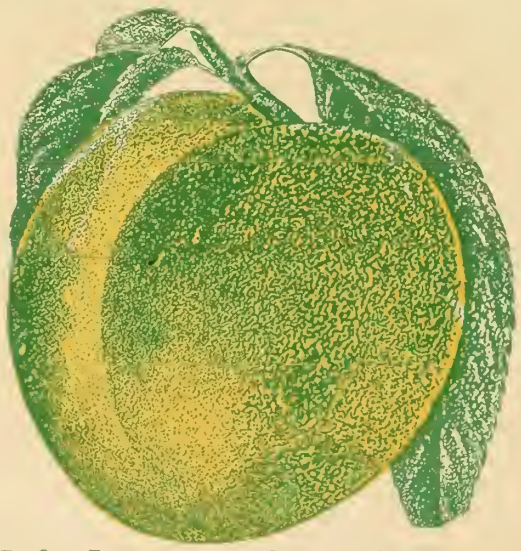

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ADDRESS PRINTING DEPARTMENT

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G. L. COBB,

Southwestern Passenger Agent,

907 Main Street, Kansas City, Mo.

The Western Fruit-Grower

An Illustrated Monthly Magazine For Progressive American Farmers.

Volume Sixteen ST. JOSEPH, MISSOURI, JULY, 1905. Number Seven

Missouri Horticulturists Meet

The summer meeting of the Missouri State Horticultural Society, which was held at Versailles, June 13-15, was a good one in every respect. Flags, bunting and flowers decorated the circuit court room, where the meeting was held, and the visitors were shown the surrounding country and everything was done to make their visit a pleasant and profitable one. Delegates were present from all parts of the state, and the program, as printed, was carried out. A sumptuous banquet was given, plates being laid for one hundred guests. After the feast, Dr. Woods, as toastmaster, called on a number, who responded in a most happy manner. Tuesday evening the meeting was called to order by the president, Dr. J. C. Whitten of Columbia. Welcome addresses were made by Mayor Samuel Danield, on behalf of the city, and by J. G. Briggs for the local society, and the response by the president. Rev. W. N. Briney, Warrensburg, gave a fine address on "The Aesthetic and Beautiful in Horticulture," which was one of the best ever given before the society. He said in part: Aesthetics is the science of beauty and taste in art and nature, the love and appreciation of the beautiful. The term moral is here used to indicate the practical ethical truth which anything is designed or fitted to teach. Horticulture is that branch of agriculture which deals with the raising of fruits, vegetables and ornamental trees and plants. Substituting these brief definitions for the terms used in the subject of this address, we find that we are to discuss the love and appreciation of the beautiful, and the practical ethical truth involved, in the cultivation of fruits, flowers and vegetables. It may be said, however, that horticulture is not so simple a thing as the definition here included of its scope would indicate. It is really a science of great complexity, embracing problems of plant physiology, of breeding and varieties of plants, under domestication, of the life histories of innumerable organisms, such as insects, mites, bacteria and microscopic fungi, of the manufacture of tools and implements, all manner of packages and the problems of storage and transportation. It is apparent that the realm of horticulture is exceedingly broad and not so free from the spirit of commercialism as is generally supposed.

The first man was a horticulturist. His home was a garden of delight, a paradise of loveliness and beauty. Within that sacred conservatory he could survey the most rare and beautiful production in the whole vegetable world. Surrounded with beauty and loaded with blessings, man was placed, with the injunction to "dress and keep it." Had the matter been left to him, he might have chosen to be placed in an automatic garden, which would dress and keep itself; where he might sit under the trees, listening to the mournful winds, to singing birds and murmuring brooks, saying sweet nothings to Eve and building castles in the air. But his Creator knew that under such conditions man would fail to develop the possibilities that were in him. The man who will not work is out of harmony with nature. The world is a vast laboratory—air, earth and water being busy in the work of decomposition and reconstruction. The indolent man is a loose pin in the machine, and the order of nature would be better off without him. The great sociological problem is how to deal with the non-producers, those who violate not but the primal law of industry. The army of tramps, and the still more difficult class of the idle aristocracy, to many of whom a patrimony has proven a curse by robbing them of any serious motive in life, are a standing menace to our civilization. Hence the Creator, in divine wisdom, ordained that man should work, and dignified and blessed the first of the race by making him a horticulturist.

Placed close to great nature's heart it was his privilege to feel the divine pulsations, and to hear the voice of the Lord God walking in the garden at the close of the day. Blind, deaf and insensate is he whose soul is not deeply moved in this close contact with nature. Society is largely kept sane and sweet by the men whose privilege it is to live in God's beautiful outdoors. It is an interesting fact to know that great numbers of the successful men in the bustling business life of the great cities are those who carried to these marts with them something of the freshness and beauty, the sound morality and high moral purposes of the farm. What an opportunity he who works amid tne fruits and flowers and gardens has to meditate upon the higher themes that constantly knock at his door and demand his attention. I have known men who would rather watch a green sprig peep above the soil and watch its growth and heed its lessons than to rule an empire. They are the sanest, sweetest souls I have ever known. Men who knew sun, and cloud, and sky, and the whole wilful, wonderful, beautiful ways of nature, lovers of the seasons and witnesses of daily miracles more strange than any human lore or printed page. I have seen heart and soul and mind ripen day by day and sweeten with an invisible essence that others felt not or saw not. A revelation vouchsafed only by him whose trysting place is in a garden, field or orchard. None can explain the refining influence of bud and blossom upon human hearts. When war is done, and politics, and commerce, and the thousand vitiating annoyances, by which we beat our little lives to death, in the final hour the garden teaches the great certitude that God is with us, about us, and fosters the sweet hope that we do but lie down to pleasant dreams of an endless day.

The orchard question was opened by W. T. Flournoy, with a paper on farm storages, which we submit in full.

Cold Storage on the Farm.

Every grower of apples in this southwestern Ozark region knows that pest about packing time we are apt to have days, sometimes several days in succession, during which the thermometer registers too high for his peace of mind and much too high for the material welfare of his apples.

The grower also knows that often after he has the apples packed they may have to wait a few days, or perhaps only a few hours, for a car on which to load them, and even after being loaded on the car there is often delay in getting them into the rooms of the cold storage houses which are situated at a distance from the orchard.

Only the packer and the storage men know how disastrous even a few hours of heat can sometimes be to apples headed up in a barrel, thus causing them to go into the storage house already well ripened and perhaps in really bad condition for storing. With storage facilities on the farm, all this trouble is obviated. It is then possible, and practical too, to leave the apples on the trees until they are well colored and in prime condition for gathering. Then gather them and place them in barrels or boxes, without pressing, put them into the cool room, there to remain until they are brought out in the cooler weather, packed fresh and turned over to the consumer or to the commission man, every barrel full and every apple good and firm, and in condition to hold up in good shape until used. The apples, because of having been left on the trees until well matured, have the best flavor and the best keeping qualities, as have been described by other government experts and other specialists in the line. Storage on the farm makes it possible to save the poorer grades of fruit until the weather is cooler, so that they may be marketed at a profit to the grower. It is possible to furnish this fruit to a class of nearby consumers who could not afford to buy a better grade that had been shipped a long distance.

We have seasons when the apple crop is light and perhaps the quality is not as good as it should be, when the buyer or commission dealer does not come to buy or apples at packing time, but goes somewhere else, where there is a better crop, perhaps it may be to New York or Michigan. When that happens, apples at packing time are too cheap to be profitable, and it is a question in my mind whether, in a year like this, it pays the grower to pack his fruit and ship it to a distance to store.

Then again, in years of great production, when there is fruit everywhere of good quality, there is a great glut in the market at packing time, with the facilities of the modern cold storage plant at hand, the fruit can be safely held until the warm weather and other causes have cleared the market of this excess. Even if the crop is sold to the commission dealer at packing time, the dealer can put his apples into this house cheaply and quickly, thus delaying the transportation until the weather is cooler, or until he has a market ready to receive them.

The fact that the apples can be packed when the rush is over and more efficient labor can be obtained, is no small item. Then it is of considerable moment that every barrel of these apples can be packed out under the personal supervision of an experienced and conscientious man.

There are many advantages that might be told, and while my experience is somewhat limited, all are according to a very conservative line of reasoning and not altogether theoretical.

In undertaking a thing of this kind, the disadvantages should be just as carefully, or perhaps more carefully, considered than the advantages. It is always the thing we are not looking for that trips us. In the first place, the cost of the building varies under different circumstances. The first cost of a small plant is greater in proportion than it is in a large plant, where the same processes and materials are used. This small plant is apt to be situated where it is not convenient to be used for other purposes than that of storing apples, thus leaving your building and machinery idle during the summer months. Then again, the cost of maintaining and running a small plant of that kind on the farm must be carefully considered, for there is where the profit or loss of the venture is apt to appear. Express must be kept down to the minimum for the stock of apples in the farm storage, which is run only during the apple season, cannot be handled profitably on as small a margin as can a very large stock of the dealer who has stored in a house of immense capacity, which is run all the year round, and which does not depend on storing apples alone. We handle our small storage plant with the same force of men that we use on the farm, but among the number we have some who are fairly exper tmechanics, as well as being experts in the packing and handling of apples. By doing this we do not need the services of a special expert in the cold storage business, but care must be taken that all apples must be closed out early in the spring, in order that the work of handling the old crop may not interfere with the work needed in the production of the new crop, and with the general care of the orchards in the spring.

Many fruit farms are situated where a large supply of good cool water can be obtained and a scarcity of cool water is a disadvantage to the economical running of a cold storage plant.

Our house, as it now stands, has about 33,000 feet insulated and piped ready for use, which holds about 3,300 barrels. When finished the whole capacity of the house will be 6,000 barrels or more. Ours is the ammonia process, direct expension, with forced ventilation. This forced ventilation will be found by all who use it to be very necessary in the preservation and handling of apples.

The machinery used in a plant of this kind is so constructed that a man of average intelligence, who can manage the ordinary machines in everyday use, can operate these after a few lessons from the manufacturers' experts. We find that we can maintain any desired temperature and our fruit has been preserved equal to the best that we have seen. The apples in many cases being too hard to be real good for present use, but all the better for the dealer who handled them, as there was little danger of loss to him. A storage house situated in an orchard section is a benefit in a general way to the growers of the community. They get a better idea of the right way to grow and handle or pack their fruit for storage purposes.

Discussion of paper: Mr. Flournoy permitted a good deal of variation in temperature. Run forced ventilation through the house every day, running temperature up to 45 degrees, then lowered it again. Getting the apples into storage direct from the trees seems to permit of higher temperature than when fruit has been delayed and began to heat and ripen.

Mr. Barnes of Kansas believes we need to keep some varieties colder than others. Thinks a self-registering thermometer would be a good thing, thus enabling the storage men to show the exact state of things.

Mr. Tippin: Mr. Flournoy has succeeded in keeping his apples best of any ever seen. Apples were green as when put in in the fall, and when taken out held up well. No use to grow fruit unless we will learn to market them right. Time coming when it will only pay to store when it can be done from the orchard, properly packed and handled. The storage capacity of the country now so great that fruit cannot be consumed in season at high price, when there is a good crop all over the country. Shrinkage a great loss, and if lose 10 to 15 per cent it brings the price down. Remember that it costs just as much to store poor fruit as good, and the poor will lose more in shrinkage.

Secretary: Get fruit to storage as soon as possible. Apples should be ripe and well colored. The individual character of the apple, the consistency of the flesh has much to do with keeping qualities. Keep air from the fruit as much as possible, if desired to keep a long time. If delay of ten days in getting to storage, apples will not keep well. Three days long enough and forty-eight hours still better. Apples should be fully grown and ready to separate from the twig when lifted gently. Some varieties color before matured otherwise.

Discussion: Barrels should be shaken well, two or three times while filling. Some prefer sacks to baskets for picking. Kansas growers using a sack with bottom that can be unfastened. This saves pouring the apples out, as sack is put in the barrel or on table, the bottom unfastened and the sack drawn out. Use every precaution to prevent bruising.

Col. J. C. Evans read a paper on "What is the Matter with Our Orchards?" and spoke of the many vacancies in orchards that have reached the age of twenty to twenty-five years. This was not the case in former years. Believes that much of the trouble comes from selecting the rough, scrubby seed from the cider press for use. From these weak seed comes trees that die young, and believes that this is the foundation of much of our trouble. Used to raise good seedling orchards, but the seed was selected by hand and the same was carefully cared for.

"Best Trees and Best Varieties" was answered by C. C. Bell, Booneville. Want healthy, well-bred trees, true to name, using the leading commercial varieties that are best suited to soil and location to market. Need good parent stock to get good trees, but this fact is too often lost sight of. Seeds should be from good stock and scions from healthy, bearing stock. Names Jonathan, Ben Davis, Gano, Winesap, Huntsman and Missouri Pippin among best commercial varieties.

Secretary said that term "well-

bred" was not a correct expression, but should say selected, and this is one of the most important points.

"Handling and Packing," by R. T. Kingsbury, New Franklin, prefers to pack in house, where clean and cool and can keep packages clean. Fruit can be hauled quite a distance without injury if carefully handled. Need good help, that the work may be done carefully at all points. Grade carefully for what is wanted. Prefers to sell direct from the orchard when possible.

"Some of Our Insects," by Dr. J. M. Stedman, Columbia. In handling insecticides in general necessary to know if the insect we are to deal with is a biting insect, which feeds on the leaves, or a sucking insect, which pierces the skin and feeds by sucking the juice. The latter cannot be killed by putting poison on the leaves, but must be handled by direct contact. Generally use kerosene emulsion. Tobacco tea also good. Rose leaf extract of tobacco is a patent insecticide which is very effective. Use one gallon in fifty gallons of water. For biting insects use any arsenical poison. It can be put on the plants and will do its work as long as it remains there. Paris green all right if can get it good. Scheele's green is a fine insecticide, used same as paris green, and will stay suspended in water much better. Water is simply a carrier for these insecticides, as they do not dissolve in the water. London purple varies greatly in strength from day to day, simply a refuse matter, not made for an insecticide; would not use at all. Arsenate of lead best we have. Made by taking 4 ounces arsenate of soda and 12 ounces of acetate of lead, dissolve separately in half a bucket of water, turn together and let stand over night. Put in 50 gallons of water, stir and spray. If you do not want to make it, can be purchased under the name of Disparene, and costs but little more. For general arsenical poison arsenate of lead is the best we have. Do not use Disparene in Bordeaux mixture; use Scheele's green instead. The 17-year-old brood of locusts due in the spring of 1907, and should use caution about setting trees that spring and the fall before. If do set, whitewash by spraying when the insects begin to lay their eggs. The lime, sulphur and salt wash best thing we have for San Jose scale. Spray in the spring before buds open. It does not kill the fruit buds. Use 15 pounds of each to 50 gallons of water and boil two hours.

"How We Grow Grapes in South Missouri," by G. W. Ferguson of Brandville. Proper soil for each variety is one of the most important questions. This can only be known through practical knowledge. The Norton Virginia and Cynthiana, the two leading red wine grapes, give better results on our poorest ridge land, if it has plenty of red clay subsoil. Being very vigorous growers, they make too much vine growth at the expense of fruit if given too rich soil. Use the two varieties for red wine—and for white wine use Noah, Elvira and Missouri Reisling. Have splendid results with the trellis system. Posts seven feet out of the ground, with overhead wires, permits of cultivation both ways, and fruit does not rot as badly as when nearer the ground. Begin cultivation early in the spring, using the double shovel, and follow with grape hoe, and keep this up till 20th of July or later.

"Methods with Grapes," by John Howe, Pacific, followed. Plant good one-year-old vines. Prune roots 4 to 6 inches, tops to two buds. First cut to two feet if strong, but if weak cut back to two buds again. Second year use two wire trellis, letting only two top buds grow, and use high renewal system Third year need three wires, and if good care has been given. should have a good crop. Fourth year full crop. Don't leave too much wood, two or three canes two or three feet long is plenty. Cut all wood off that comes from the ground. Bag when size of small peas. Bagging gives better fruit, finer quality, and will hang on the vines longer, not rot and no injury from the birds.

"News in the Cherry Line," by M. Butterfield, Farmington. Prefers one-year-old trees for planting. Well drained soil and do not prune much. But a short list to choose from. Tried forty varieties, and can only recommend four. Would plant Early Richmond, Large Montmorency, Wragg and Morello. Napoleon the best sweet cherry we have; a fine ornamental tree and bears fair.

Cherries generally a good paying crop. Wants high, dry soil. Secretary Goodman advises against Morello type on Mazzard stock. Get them on the Mahaleb stock or on Morello stock.

"Fruit Growing in Morgan County," by S. B. Bailey, Versailles, who thinks this industry has been badly neglected in that county. Has great faith in its possibilities, and urges that more attention will be paid to this branch of agriculture.

J. H. Marion, Fulton, gave a list of "Best Plums," naming Lombard as one of the best. In Japanese varieties plant Abundance and Burbanks, and in native kinds Wild Goose and Forest Rose.

President: Gold plum very fine when you get them true to name. Only serious objection they come at a time when the weather is hot, and not so much demand for them. Wayland good and ripens late, when market wants them. Makes quite a difference the kind of roots used for the plum. Shropshire on Marianna stock bears very heavy, but on slow growing stock does not amount to much. About one-third the varieties are not capable of perfect self-fertilization. Even the best may do better, under all conditions, if other pollen is near.

Secretary: Feel sure that peaches lose hardiness in propagation. Take seedlings that are perfectly hardy, and by budding for several years they lose some in hardiness and individuality. Many who trimmed back peach trees severely in the spring find they are making a big growth, and large tufts of leaves. When very thick it might pay to thin, but peach will generally thin itself. Some will be smothered out and some will lead out and grow several feet before fall, and set fruit buds. The secretary's report shows 25 to 30 per cent of an apple crop, which in Missouri means a good many thousand barrels of apples. Peach crop nearest a failure ever reported. The American Pomological Society, which will be held in Kansas City August 8 to 10, most important meeting ever in Missouri. The most prominent horticulturists in the United States will be there. We want them to know of our resources and advantages, and we in turn can secure a vast fund of knowledge. Best scientists in all lines of the work best students from Washington and experts in all lines will be there. Experience shows that a temperature of 30 to 32 degrees best for keeping apples.

"Cultivation and Care of Strawberries," by G. T. Tippin, Nichols. The foundation for proper cultivation begins with preparing the soil. Best to break land in the fall, rebraking and pulverizing fine before setting the plants. Begin cultivation soon after plants are set and keep it up for at least ten weeks, cultivating every week. If planted in rows one way the hoe must be used to keep soil loose and free from weeds around the plant. Must get a good plant row, and this is the object of intense cultivation. Force plants to make runners and set plants early. By this you get stronger plants for fruiting the coming season. A matted row can be formed two feet wide and in September after the plants are well set the plants should be dug out so as to leave the plants about six inches apart. This will give as good fruit in the middle of the row as on the edges. Mulching is necessary on all but stony soils. Wheat straw is most generally used and put on during the winter, but owing to the weed seed, cheat, wheat, etc., prefer to mulch in the spring. After crop is harvested, renew by mowing and burning off if weeds and grass enough to burn. Bar off with side plow, leaving row not over eight inches wide. Give ground time to mellow up, then cultivate the soil back to plants. Hoe out the row after bearing off, before cultivating the soil back. Keep up cultivation as long and as often as necessary to grow a good plant row.

A number of fine papers were presented, among them a particularly pleasing one my Miss Marie Goodman, and all worthy of extended notice, for which we have no room.

Fine vocal music was furnished throughout the meeting. The people of Versailles spared no effort to make the meeting a pleasant and profitable one, and all went home feeling that it was good to have been there.

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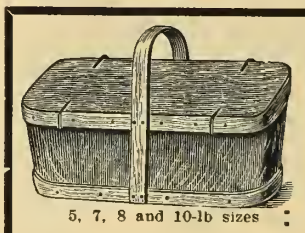
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Kansas State Horticultural Society.

The meeting of this society which was held in Wichita last month was the best summer meeting this organization has ever held. The attendance was not large, but the program was carried out without a hitch, and the meeting was in every way enjoyable. The people of Wichita took pains to see that the visitors enjoyed their stay in the city.

The reports from the various congressional districts were not encouraging, as the fruit crop generally is short. Peaches are not nearly so good a crop as last year, nor are pears. Apples promise perhaps one-fifth of a crop, taking the state as a whole, although the Arkansas Valley, which had a good crop last leason, reports one-third to half a crop of apples. The strawberry crop was good, in most places, but prices were unsatisfactory. The most encouraging feature of the reports was that trees and plants generally are in good condition—the best for years. Apple foliage is very healthy, except that blight has attacked trees in some places. Canker worms have not been present for several years, and there is no peach leaf curl this season.

In responding to the address of welcome President Holsinger told of the development of Kansas horticulture, and he referred especially to the development of the city of Wichita. The society had met in Wichita in 1886, when the "boom" was on, and from that time until now the city and surrounding country has been wonderfully developed.

George A. Blair of Mulvane read a paper on "Orcharding in the Arkansas Valley," in which he told of the development of the sub-irrigated lands in growing apples. In regard to this sdb-irrigated section, as found between Hutchinson and Arkansas City, Mr. Blair said:

"In locating an apple orchard in this section we simply select any good corn land and get good results. We sometimes take land too sandy for cor nand which blows, and grow as profitable apple orchards on as good or better soil. The only requisite is that the subsoil shall be pervious and not too near the water level—say 6 to 10 feet to sheet water. A peculiarity of our valley lands is their close proximity to the sheet water or river underflow from which the soil gets a sub-irrigation."

In a paper on the subject of tree planting about the home, George W. Tincher of Topeka recommended the elm and green ash as two of the best trees which can be grown. The former must be given more room than is generally accorded it, and unless this is done it will fail to reach its best development. The cottonwood and soft maple are not recommended, except where a quick growth is desired; the trees are generally too soft to be satisfactory.

The second day of the meeting the members had opportunity to pay their respects to the express companies. F. W. Dixon of Holton had shipped a crate of Gandy strawberries to the meeting, and when the package arrived six of the boxes were broken, and the whole presented a very dilapidated appearance, and the damage was undoubtedly caused by rough handling of the crate by express companies. The fruit could have decayed, or become soft, of course, but the packages could not be broken as they were except by careless handling.

The subject of forestry was interesting to persons dwelling in Western Kansas. Windbreaks were recommended for protecting feed lots and barns. For fence posts black locust, catalpa and Russian mulberry were recommended. The borers which attack black locust are becoming a very serious pest, and some way must be found to protect trees against them.

The black locust received the approval of the members for its beautiful appearance, as well as for its commercial purposes. The wood is very hard and is for that reason adapted to posts, ties or foundation purposes of all kinds.

It was found that the best manner to plant the black locust was to cut them off at the ground after the first year, allowing them to come up as they please, but selecting only such shoots as are straight and hardy. The borers do not seem to attack these new shoots, for some reason not explained. Wet soil is not adapted to the flourishing of the black locust, nor will the trees stand a flood condition for any great length of time, but taken as a whole these trees are very well suited to the state of Kansas. In some sections of the state an acre with black locust on it has been known to sell for $1,000. considered a good price.

E. H. Cooley of Wichita read a paper on "Berry Growing in the Arkansas Valley," in which he said that the local market is most profitable; indeed, he doubts if it will be found profitable to ship the berries, on account of the rough handling they receive en route. Mr. Cooley said the growers have not found an early berry which is entirely satisfactory. The Excelsior is a good cropper, but it is so sour that one who grows it is thought to be working in the interest of the sugar trust. The following varieties have been found most satisfactory: Splendid, Warfield, Senator Dunlap, Bubach, Aroma, Bissel and Sample. The Aroma is the best late berry they have; it is a better yielder than Gandy, its season of ripening is longer, and the fruit presents a better appearance in the box.

The various papers read at the meeting were interspersed with music, recitations, etc., and the visitors were given an automobile ride about the city and surrounding country. Altogether, the Wichita meeting was one of the most enjoyable the society has ever held.

Curculio Injury to Apples.

Prof. Lawrence Bruner, state entomologist of Nebraska, is collecting data in regard to the injury to apples in that state by the plum and apple curculios. He asks the orchardists of that state to answer the following questions, sending these answers to him at Lincoln, Neb.:

1. Are the short beetles, known as plum curculio and apple curculio, both of which infest apples, present in your locality?
2. If so, which is the commoner?
3. When do they first appear in your orchards?
4. How much damage have they done your apples?
5. Have you noted them so far this year?
6. Have you tried any remedies, and if so, what?
7. Is the wild crab or thorn apple present in your locality, or near your orchard?

The curculio is reported at work in many apple orchards this year, and it is undoubtedly a pest which will have to be reckoned with by apple growers.

The "3W" strawberry has beaten its record. All other kinds ruined by April frost. The "3W" came on unhurt. First shipment April 29th, followed in multiplying success until May 29th, and still there was an abundance to ship if there had been any market. W. A. MASON.

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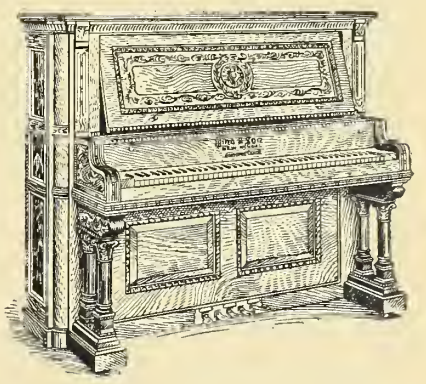

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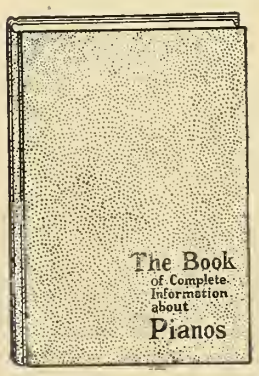

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Meeting of Nurserymen

The thirtieth annual meeting of the American Association of Nurserymen, which was held at West Baden Springs, Ind., June 14 to 16, was one of the best the organization has ever held, and the attendance was perhaps greater than at any previous meeting. Between 350 and 400 persons were in attendance, and as all could be accommodated at one hotel, the meeting was in every way enjoyable. More of the members were accompanied by their wives than ever before, and the social features were more prominent than usual.

The next convention will be held at Dallas, Texas, this place having been selected over Chicago and Atlantic City. Officers elected for the ensuing year are as follows:

President, E. Albertson, Bridgeport, Ind.; vice-president, Orlando Harrison, Berlin, Md.; secretary, Geo. C. Seager, Rochester, N. Y.; treasurer, C. L. Yates, Rochester, N. Y. Executive committee, T. B. Meehan, Germantown, Pa.; Theo. Smith, Geneva, N. Y.; J. H. Dayton, Painesville, Ohio.

The annual membership fee was increased from $2 to $3, to provide additional funds for some new work which will be undertaken by the association.

The reports of the various committees on the opening day were very interesting. The report of the committee on legislation led up to a discussion later which developed the fact that the members are becoming more of one accord in the matter of securing national legislation governing the inspection and transportation of nursery stock between different states. The report of the committee on transportation showed there is need of much work to be done, and later a resolution was adopted empowering the transportation committee to employ an experienced railroad man, who shall help to correct the abuses to which nurserymen have been subjected. It was announced that if one member of the association, Stark Bros. of Missouri, could find it profitable to employ an experienced railroad man to look after its freight business, the association as a whole should certainly find it profitable to have such a man act with the transportation committee.

Wednesday evening a paper by Dr. Geo. T. Moore on the subject of "Soil Inoculation for Leguminous Crops" was presented, illustrated by stereopticon, which followed very closely the article which was published in the May issue of The Fruit-Grower.

J. Horace McFarland of Pennsylvania delivered a very interesting address on "A Tree Garden to Last a Thousand Years." This was beautifully illustrated with stereopticon pictures taken in the Arnold Arboretum, Boston, and in other places.

H. M. Stringfellow of Texas delivered an address Thursday morning on the subject of "The New Horticulture." Mr. Stringfellow, as is well known, believes in root pruning of trees at planting time, and he said he calls his method "the new horticulture" for the reason that it differs from all other teaching. Mr. Stringfellow said he knew his method is a radical departure from the beaten path, but he could only urge his hearers to try it for themselves before condemning it. He said he had experimented for fifteen years, and is now firmly convinced that root-pruning of trees before planting is the proper method of planting. He had planted peach seeds in pots, in one experiment. One of these seedlings was planted with all its roots, in fine soil. The other was root-pruned and planted in hard soil. The first did not make five feet of growth in five years, although the other tree has grown nicely.

Another experiment was in planting a cottonwood windbreak. All the trees grew from cuttings except one, and to fill this vacancy a tree was transplanted. The cuttings have made much the best trees, and now, after twenty years, are great trees, but the transplanted tree is much smaller, not over six inches in diameter. Mr. Stringfellow said the truth of his position is shown by the fact that one can never get the root growth on a transplanted tree that he can on a root graft, planted with only a very small piece of root.

After root-pruning, Mr. Stringfellow believes other things are essential. The second point is to plant in firm soil; don't dig great holes, but plant the trees, with roots closely pruned, in firm soil.

The next essential is the non-cultivation of bearing trees. The speaker said he used to plow his orchards; no man ever gave better cultivation, but now he does not believe this is best. The trees of the forest grow without cultivation, and fruit trees will also do well. He does not believe in allowing weeds or grass to grow high, but he mows it often and allows the grass to lie where it falls, to serve as a mulch. Mr. Stringfellow claimed that fruit grown in non-cultivated orchards would be firmer, take on a better color, and would stand shipment much better than that grown on trees which had been cultivated. To illustrate his point he submitted specimens of plums which had been grown in sod, which were as fine as could be desired.

Another point he made was not to prune bearing trees. It is all right, according to his plan, to prune trees before coming into bearing, but thereafter he does not prune.

Still another important point is that all trees should be propagated from bearing trees which produce fruit of the best type of the variety desired. The speaker said that several years ago he bought two lots of pear trees of same variety; 200 of these trees were purchased of W. F. Heikes of Alabama, 1,300 others were purchased from another nursery. All were true to name, but the 200 trees bore at two years after planting, and at four years from planting bore full crop. The other trees had not done nearly so well. The difference was due to the fact that the trees from Mr. Heikes had been propagated from good types of bearing trees, while the others had been propagated from non-bearing trees.

For the benefit of the nurserymen Mr. Stringfellow said he believed they ought to be interested in his plan. To adopt it will make the planting of trees a much cheaper proposition, and then, if roots are pruned before being sent to customer the question of transportation will be greatly simplified.

In conclusion the speaker advanced the theory that it was not best for a tree to have some roots from the stock and some from the scion. Either one or the other must be removed. The roots from the stock will kill the roots from the scion, he thought, and vice versa. For this reason he believes that in grafting only a short piece of root should be used, and even this should be cut entirely away before trees are sent to customer.

"Quality vs. Quantity" was the subject of an interesting paper by Prof. John Craig of Cornell University. The speaker said that his subject was properly stated, because, as a rule, quality in fruits is not associated with quantity. In speaking of quality, Prof. Craig said he referred to texture of flesh, juiciness, flavor, etc. All this, as well as aroma, go to make up the item of quality. Among the quality leaders in apples he would place Spitzenberg, King, Spy, Jonathan, Grimes, McIntosh, Mother, and apples of that class. In the quantity class he would put Baldwin, Ben Davis, Gano, York Imperial, Wolf River, etc.

"In a year when we have large crops of apples," the speaker said, "the apples of good quality will be in demand, and it frequently happens that fruit of the first class will help sell the fruit of the second class. Last year, for instance, many growers made their small crop of Kings help sell their large crop of Baldwins. But we will finally reach our level in all things. Ben Davis and Baldwin are now sliding toward the bottom, and other sorts, costing more to grow, are more in demand. The danger is that the apples of poorer quality will cloy the public taste, so that the better fruits cannot be sold.

"In discussing the question of varieties we must consider the adaptability of a given section to the varieties sought to be grown there. Varieties differ greatly in various parts of the country. In condemning the Ben Davis we must consider that much of this is due to the section where the variety is grown. The Ben Davis apple which we condemn is likely grown in New York. I admit that the Ben Davis of Missouri and the Ozark country is a vastly different apple from Ben Davis grown in New York, and we cannot compete with the Westerners in producing this variety. Certain varieties reach their best development in given sections, and they should be largely planted there. The Gravenstein, for instance, reaches its best development in Nova Scotia, and the Fameuse is best in the upper St. Lawrence country. The York Imperial is a fine apple, as grown from New York to Washington, but is a failure in upper New York and in New England. Northern Spy originated near Lake Ontario, and reaches its best development there. All this must be taken into consideration by nurserymen, when they come to recommend different varieties to their customers."

Thursday evening George G. Hedgcock, of the United States Department of Agriculture, delivered a most interesting address on "Crown Gall." Mr. Hedgcock has charge of the experimental work which has been carried on for several years in connection with the Mississippi Valley Laboratory at St. Louis, and now has experimental plantings in many places throughout the country. His address was illustrated with lantern slides, showing the various forms of root galls, so that the members could know just which particular form of root gall he was discussing. This address appears elsewhere in this issue, the extract being furnished by Mr. Hedgcock.

Friday W. M. Hays, assistant secretary of the Department of Agriculture, delivered an illustrated address on the subject of "Plant Breeding." This was to have been delivered earlier in the meeting, but the speaker was delayed. The speaker told of the work which has been done in Minnesota in the way of breeding new varieties of wheats. He said that the fruit products of this country amount to about $15,000,000 per year. This yield can be increased 10 per cent at not to exceed a cost of 1 per cent, if the proper effort is made. He believes the different experiment stations can be helpful in producing new fruits, but he does not bleieve these stations should disseminate the trees and plants, leaving this to the established nurserymen and seedmen.

Owing to the length of the program, many of the papers were not read at the meeting, but will be published in the annual report of the association.

A new feature of the meeting was a banquet given on Friday evening. At this banquet were served, in addition to the regular menu, fruits of all kinds and native wines of various sorts. Cherries and raspberries from Indiana, apples from Colorado, Oregon, Ohio and other states, strawberries from Michigan, oranges from California, peaches and plums from Texas, and other fruits from various sections were on the table, so that all tasts could be gratified.

After the menu Captain C. L. Watrous acted as toastmaster, and addresses were made by the retiring president, E. W. Kirkpatrick of Texas, and by Prof. John Craig of New York, Watson of Texas, Chase of New Hampshire, Hale of Tennessee and others. After the speaking the members and their friends who desired to dance retired to the ball room.

Saturday morning a number of the nurserymen and their wives visited Mammoth Cave in Kentucky.

Altogether the meeting at West Baden was one of the most enjoyable the organization has ever held, and the nurserymen will likely return to that place for another meeting within the next few years.

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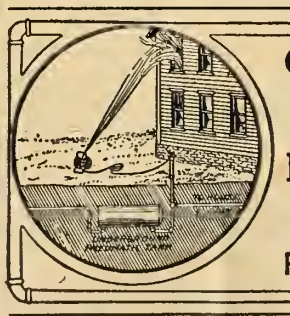

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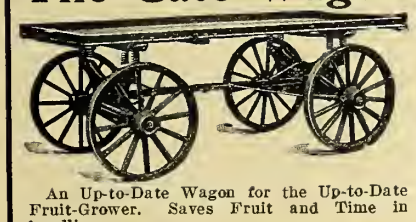

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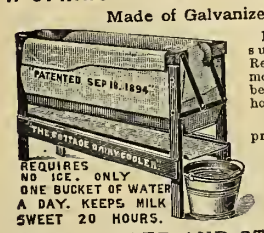

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Crown Gall on the Apple.

The following is a summary of the lecture given at the annual meeting of the American Association of Nurserymen at West Baden, Ind., by Geo. C. Hedgcock of the U. S. Department of Agriculture, giving some of the results of his three years' experimentation with crown gall:

The disease ordinarily called crown gall on the roots of the apple tree is most prevalent on grafted trees at the union of the root and scion, and is more often found on the lower end of the scion. Only a small per cent of budded trees are ordinarily diseased, but as high as 50 per cent of some varieties are diseased in grafted trees. The disease is more or less prevalent in all localities, wherever the apple trees are grown from root-grafts. In the course of the investigation no nursery investigated has been found free from this disease.

Apple crown gall has two forms, one of which is devoid of small roots in the region of the gall, the other has few to many small roots arising from the gall or its vicinity. A third form now under investigation is here presumed to be a distinct disease, and consists of numerous small roots arising from a slighly thickened taproot, in which there is no distinct gall formation. This is designated as the "hairy root" disease of the apple. The "hairy root" disease is not included in the data from which the following results were drawn. Care should be taken also not to confuse with crown gall in the nursery, two other gall diseases of the apple tree, one due to the woolly aphis, the other to the presence in the root cells of very tiny worms, known as nematodes. The galls produced by these two parasites are smaller and softer than true crown gall, and are more numerous and more apt to be found on side roots. There is also a soft gall often found on apple seedling roots, and occasionally on grafted trees, which differ slightly from the harder form common on grafted trees, and which may be due to a different cause.

Careful examination for two years conducted both in the greenhouse and in the nursery give the following results from inoculation made with the common hard type of apple crown gall, devoid of "hairy roots": Apple seedlings grown in the greenhouse from seeds sterilized with concentrated sulphuric acid, planted in a soil which had been sterilized in a soil autoclave at a steam pressure of 15 pounds to the square inch, watered with boiled river water, were used for experimentation. Such seedlings remained free from disease throughout the experiment, both in control and in inoculated plots. A portion of these were inoculated by inserting a piece of living gall in a wound upon the root, and wrapping it with a thread; others were inoculated by mixing minced galls with the soil. Carefully selected seedlings from the nursery were inoculated in the same manner in both field and greenhouse. The average result of all such inoculations for two years are ten per cent diseased in the inoculated and fourteen per cent diseased in the control portions of the plots. No raesons for the excess in the control can be given.

Extensive inoculations of root-grafts for two years gave in 1903 an average of 44 per cent of diseased trees in the inoculated portion, and 39 per cent in the control parts of the plots. In 1904, with an equally large number of trees, 9 per cent were diseased in the inoculated and 27 per cent diseased in both the inoculated and the control portions. About 10,000 apple trees were used in these experiments. No evidence can be deduced from the results that the disease is contagious since the inoculation was thoroughly made with a large quantity of minced galls at the time of planting.

It has been claimed that the disease kills the apple tree in three years in the case of young trees. An experiment with 300 trees to determine the effect on the growth of diseased trees at the end of one year showed no difference in the appearance of the diseased from healthy trees. Of 175 diseased trees, five were dead at the end of the year; of 125 healthy trees of the same age, seven were dead. Trees grown in the nursery under the same conditions of the same grade, with equally developed roots, were used, the only difference being that each of the diseased trees possessed a well developed gall on the root. Outside of experiments by the department considerable data has been collected, which indicate that the disease does not greatly shorten the life of the young tree, unless the galls completely encircle it above the root system, and in such cases that deeper planting of diseased trees will probably enable them to form a system of roots above the encircling gall and thus prolong their lives. An orchard of 50 crown gall trees near Brussels, Ill., at the end of eight years contained 40 healthy, vigorous trees, eight having died, and two were dying with root rot, which may or may not have gained entrance through the gall. No replants had been made at any time during the growth of the orchard. There are now under observation orchards containing 14,000 crown gall trees. Experiments on the nature of the disease in 1905 include 110,000 apple root grafts and 10,000 seedlings.

The crown gall of the peach, plum, cherry, raspberry, almond and apricot have been proven by careful inoculation to be one and the same disease on each of these plants. It is very contagious when inoculated into wounds upon the roots of the plants. Peach and raspberry are most susceptible to inoculation from galls taken from any of these plants. On the other hand, inoculations upon the apple and pear from galls of the above plants failed, and those from galls of the apple and pear upon the raspberry and stone fruits were equally unsuccessful. The pear gall is similar to that of the apple and does not appear to be contagious, results obtained.

The crown gall of the hop is evidently caused by the presence of a slime-mould resembling Plasmodiophora brassicae in the tissues of the galls. The crown gall and root galls of the rose and grape are not certainly contagious. It is not advisable to use cuttings or offshoots from diseased plants of the rose, raspberry or grape, owing to the presence of the disease in the tissues of those plants above the ground. A study of all these galls is in progress.

There is a great diversity of reports as to the tendency of different varieties of apple to form crown galls when grafted. The department is anxious to secure in the next few months as much data as possible from all parts of the United States as to the per cent of crown gall upon common varieties of apple on both grafted and budded trees, and it is requested that leading nurserymen and fruit-growers send a confidential report of such percentages to the Mississippi Valley laboratory at St. Louis. All data which may be furnished in connection with this inquiry will be considered confidential; that is, when publications or announcements pertaining to crown gall are made the names of the nurserymen furnishing information will in no case be given, but each will receive a full report of the investigation when issued. Blanks for data and full directions will be furnished upon application to Mr. Hedgcock at the Mississippi Valley laboratory, St. Louis, Mo.

Prospects for Fruit.

No report cards were sent out this month, but in the August issue the reports will be published, as usual. Since the report in June issue there has been little change, except that apples have fallen in some portions of the East to a greater extent than had been anticipated. In the Middle West the crop has also deteriorated somewhat. The crop in this section will be short—perhaps 25 per cent of a crop, but the fruit on the trees is reported to be in good condition, sound and free from worms. Curculio injury has lessened the crop in some sections.

The berry crops have been about as anticipated, perhaps the raspberry crop being somewhat smaller than had been expected. Blackberries promise a fair yield. Grapes will not be a full crop by any means, in the Middle West, as there has been much complaint that the bunches are not well filled out.

Condition of fruit trees generally continues very good. Blight has injured some apple orchards, but on the whole the apple trees seem in better condition than they have been for many years.

In connection with reports of fruit prospects it may be said that the wheat crop has turned out well, throughout the Middle West, and harvest has been satisfactory. Corn generally looks fine, except in Texas and some of the Southern states, where there has been too much rain. Throughout the corn belt proper, however, the growing crop is in splendid condition, and prospects indicate an unusually heavy crop. Hay crop has been good, and garden vegetables are plentiful.

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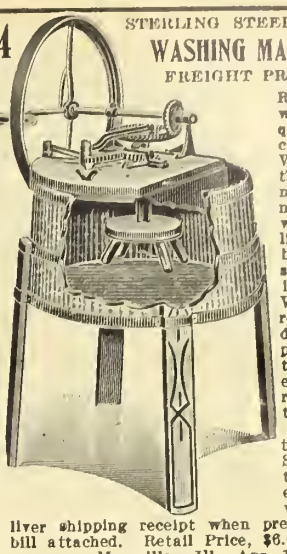

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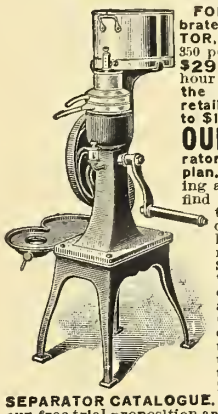

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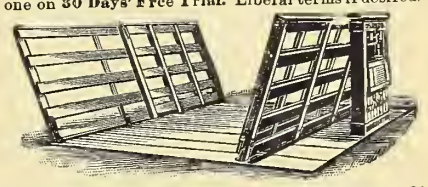

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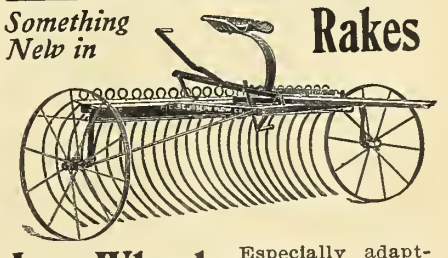

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Vol. 16 JULY, 1905 No. 7

Elaborate preparations are being made at Kansas City for the meeting of the American Pomological Society at that place August 8-10. Secretary Goodman of the Missouri Horticultural Society has asked the societies of sister states to appoint members of the committees which shall look after the visitors, so that the meeting at Kansas City shall be the best the organization has ever held. It is probable that the railroads which traverse the fruit sections of Southern Missouri and Northern Arkansas will tender a special trip to the visitors, so that those who come from the East may have an opportunity to see what is being done in the Ozark country. It is to be regretted, of course, that the fruit crop in that section is very short this year, but the visitors can see how horticulture is being developed and may learn something of the possibilities of commercial fruit culture. Everyone who can possibly do so should arrange to attend the meeting at Kansas City.

The last legislature of Indiana passed a law providing a fine of from $50 to $500 for the substitution of nursery stock by nurserymen, and allows prosecution to be made under the law at any time within five years from delivery of trees. Section 1 of the law reads: "Be it enacted by the general assembly of the State of Indiana, that it shall be unlawful for any person, persons, firm or corporation, acting either as principal or agent, to sell any person, persons, firm or corporation, any fruit tree or fruit trees, representing the same to be of a certain kind, variety and description, and thereafter to deliver to such person in filling such order and in completing such sale a fruit tree or fruit trees of different kind, variety or description of such fruit tree or fruit trees so ordered and sold." Nurserymen claim that the law is unconstitutional, as it provides that they shall be held criminally liable, whether the substitution were accidentally or intentionally made. The law will hardly apply to interstate shipments, either, as nurserymen in other states will so arrange their affairs that the actual sale of trees will take place at the nursery, rather than at point of delivery. The passage of this law, at any rate, shows the strong sentiment against substitution. Nurserymen are often given authority to substitute another variety of same season, provided the variety ordered is not to be had, and this substitution is all right. But the firm which knowingly sells trees which it cannot deliver should be condemned in the strongest terms. But it is very questionable if the Indiana law will stand the test of courts, for there are unquestionably many mistakes honestly made in filling orders for nursery stock.

Of late years fruit-growers have begun to discuss plans to increase the consumption of fruit, as well as to discuss methods of producing larger crops. Two plans of advertising have lately come to our notice, each having for its purpose the securing of increased consumption of fruit. One is a booklet issued by the Southern Pacific Railway, entitled "Eat California Fruit." Of course, the railway company does not grow fruit, but it hauls across the continent the product of the growers, so of course it is interested in the consumption of California fruit. This booklet is reinforced by some advertising done in Eastern papers by the growers themselves. These advertisements, as well as the booklet, tell of the value of fruit in one's diet, and give the months during which the various fruits will be on sale. This is good advertising, and when one buys California fruit, it will be found that the oranges, prunes, etc., are in every way satisfactory. The other plan was the use of space in local papers by an apple buyer, who had a large stock of apples in storage. These advertisements, too, told of the benefits to be derived from eating apples, and yet it was not good advertising, for when one tried to buy the choice, rosy fruit which was described, it was not to be had. The dealer's fruit was not so good as his advertisement had claimed. The plan was all right, but the man did not "deliver the goods." It pays to advertise good stuff, but no fraud can be advertised persistently and successfully over a long period of time, as a rule.

Ex-Governor Robert W. Furnas of Nebraska, one of the pioneers in horticulture in that state, is dead. In his death the state has lost one of the men who worked hardest for its advancement, and the horticulture of the state lost one of its best friends. Governor Furnas was identified with the political history of the state, and yet we shall remember him as the horticulturist rather than as a public official, for he was intimately connected with the development of the fruit and forest interests of Nebraska, and did much to develop fruit culture. The Fruit-Grower especially feels indebted to Mr. Furnas, for he was one of our early friends, and was one of our best friends. Few of the old-timers in the horticulture of that part of the country remain, Governor Furnas having been one of the most active.

Likes the Bokara Peach.

E. M. Frye, Sheffield, Mo., sends some twigs of Bokara No. 3 peach, containing sufficient peaches for a crop, and says the same trees bore a good crop last year. Mr. Frye likes this variety very well, and says that with him the fruit ripens about a week later than Elberta. He adds: "I cannot understand why people continue to set Elberta, to fail almost every year, when there are hardy varieties of the same season, and as good or better in quality. The Bokara came through a temperature of 26 degrees below zero, with a temperature of 28 degrees just before the buds opened."

I shall discard all other horticultural papers but The Fruit-Grower, as I find it by far the best. You can count on me as a subscriber as long as the paper is published.—George L. Smith, Birmingham, Iowa.

Gardening Notes

Good Catch Crops.

From now on to the end of July it will be a good plan to sow fodder crops of various kinds in all the spare corners, to make horse feed for winter. There will be all sorts of odd patches that can be used, and as soon as the early peas and beans and potatoes are off that land can be used. I use mostly cane (sorghum), either broadcast or drilled in. Among the early peas and beans and sweet corn as soon as I cultivate them the last time, I drill cane seed between the rows, at the rate of one to two bushels to the acre. It grows slowly at first, but about the time the other crop is off the cane will shoot up, and by September will make three or four tons to the acre of the very best horse feed, equal to timothy hay. In the early potatoes, all that are dug up to the middle of July, I immediately sow the land to cane, and very often the crop is worth as much as the potato crop. After it is too late to sow cane seed I sow turnips on all the ground that comes into use again. I generally have more turnips than I can sell, but I am out nothing but a few cents for the seed, and what I do sell of them is almost clear profit. Besides they are good to plow under. The cowhorn variety of turnips are fine to sow on hardpan land, as they grow often nearly two feet into the ground and break up the hard subsoil equal to a subsoil plow.

Sow Rape Now for Feed.

If you want some kind of forage crop to feed green or to pasture in the fall, try Essex dwarf rape. It can be sown any time up to August and will make a world of feed. Some that I have that was sown the middle of April, broadcast, is now knee high and growing faster than a drove of hogs could eat it down. It will make feed all summer.

I expect to pasture it, but if you do not have it where it can be pastured, you can mow it and feed it green to the stock. I estimated last year that some I cut was making forty tons to the acre of green feed. A patch of it will come in mighty handy in dry fall weather when pastures are played out.

Varieties of Radishes.

The radishes in the trial grounds showed up nicely and were an interesting sight. Of the early ones the Icicle is easily the leader in the whites. It is always tender and sweet and is very early. It gets pithy rather soon, but we generally get them all used before they have a chance to spoil. Of the early reds the old Scarlet Turnip or Round Red is still a leader. The new Crimson Giant is fully as good for a first early and has the advantage of standing a long time without getting pithy. It will keep on growing for two or three weeks after the other earlies are gone, and getting bigger and better all the time. Some of mine are nearly as large as a teacup and solid and sweet yet. It is certainly the best new radish that I have seen in the last ten years, and it has come to stay. By making successive plantings of it a person hardly need sow any other variety of radish.

How to Kill the Melon Bugs.

The melon bugs are causing lots of grief about now and they are certainly a great drawback to melon growing. The best cure for them that I have ever found is tobacco dust. It is cheap, harmless and effective. I do not think it kills the bugs, but they sure leave, and that is all I care for. The tobacco dust can be bought of any seedsman for about 5c per pound or by mail for about 15c per pound.

Dust it liberally, as it will not hurt the plants. In fact it acts as a fertilizer on the plants and helps to keep them growing. Some bugs will leave as soon as they get a smell of it.

Some Satisfactory Flowers.

The most attractive spot on the place just now is the pansy bed. It is right out in the open in the trial grounds where the seed was drilled in a year ago now. The plants bloomed all last summer, lived through the winter with only slight protection, and for over a month now have been a mass of blooms. All around the old plants are self-sown seedlings, a perfect carpet of them, that are now also blooming, and it makes a sight worth going a long ways to see. The seed for a pansy bed can be sown any time for a month yet, and with a little protection you can have a successful bed for next spring.

I like poppies, too; they are so bright and gorgeous and so easily grown. Where I had the poppies last year the self-sown seedlings came up in the fall and lived over winter and are now in bloom and a sight to behold.

A Hard Spring on Sweet Corn.

This has been the worst season for a long time on sweet corn, and most gardeners have a rather poor prospect of it so far. The cool weather and excess of moisture in most places have caused the seed to rot in the ground and what did get up has made very slow growth. If it had not been that seed sweet corn was much better quality than usual, the loss would have been much worse.

Melons, too, have fared very badly and reports from most places tell of poor stands and slow growth of the plants. Melons will be late at the best and I look for a short crop. The only thing we can do now is to take good care of what we do save, and keep them growing lively.

A Good Potato Year.

A cool, moist spring has been just the thing for the potatoes, and the prospect is good everywhere. I have a twenty-five-acre piece of White Ohios on new sod land that are the finest looking potatoes I ever saw. If they don't make 400 bushels to the acre I will be disappointed. I think that generally the acreage of potatoes is less than common this year, and that in spite of good yields the crop will not be large the country over. If that is the case, the men who have large lots of potatoes this year will be in luck.

HENRY FIELD.
Shenandoah, Iowa.

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VIEW OF TWO-YEAR-OLD PEACH ORCHARD. OWNED BY MORRILL ORCHARD CO., MORRILL, TEXAS.

Trip Through East Texas Fruit Country

On the evening of Tuesday, June 20, a special train left the St. Louis Union Station, bearing fruit-growers, agricultural editors and homeseekers, for a trip through the East Texas country. The trip was planned by the Cotton Belt railway, and the train was in charge of Mr. W. C. Dunlap and L. E. Saupe of the general passenger agent's office. This was the trip which had been advertised in The Fruit-Grower for several months, and the prime object was to visit the East Texas country during the time of shipping peaches and tomatoes.

The train was delayed en route by a minor accident to a freight train, so that it did not arrive at Tyler until about midnight of Wednesday. But before the train reached Tyler it was boarded by a delegation from that place and from Athens and Jacksonville. These delegations were to extend a welcome to the state and to urge the visitors to visit each of the cities, so that they could be shown the country. Before reaching Tyler it was announced that the Cotton Belt would have another special train ready early Tuesday morning for a trip down the Lufkin branch. On this branch are located the towns of Mt. Selman, Jacksonville, Rusk and Morrill—all extensive shipping points. The train went as far as Morrill, and as most of the visitors wanted to see the orchards planted by the Morrill Orchard Co., few persons left the train until it arrived at that place.

When the train arrived at Morrill rain was falling, and had been nearly all night. Wagons had been provided, however, for showing the visitors over the country, and before noon some of the younger orchards of the Morrill Company were inspected.

The lands of the Morrill Orchard Co. embrace about 12,000 acres. The company began work in the spring of 1902, and now has over 1,000 acres in a high state of cultivation, with over 700 acres of peaches, besides plums, apples, strawberries, figs, eac. Mr. Morrill explained to the visitors that he had noticed for several years that early in the season the best peaches, with best color and best flavor, came from two counties in Texas—Smith and Cherokee. Desiring a Southern farm, to occupy his attention until his Michigan peaches were ready, he visited East Texas and the result was that more than 12,000 acres of land were purchased, and he says he has never for a moment regretted his purchase, but on the other hand has been well satisfied with results. The company operates a store and hotel, and has built tenant houses for its employes, with schools and churches for white and black residents.

The soil in this section is generally accepted as good peach soil; surface a sandy loam, underlaid with red clay subsoil. The soil is somewhat "spotted"—that is, in every tract there will be spots on which trees will not thrive. These spots seem to hold the water, and trees planted there do not show a thrifty condition. It was noted that in a number of the orchards these spots occur, and Mr. Morrill said that in planting a large tract it will be well not to plant these spots, as trees will do no good if planted there.

The morning trip took in part of the Morrill orchards near the station, everything being found in the best of condition. Mr. Morrill certainly practices what he preaches. Fruit-growers who have heard him at horticultural meetings will recall that he urges thorough cultivation. He has shown that this is the way he farms, as well as talks. The orchards had been cultivated with disk harrows and weeders until scarce a blade of the weeders until scarcely a blade of cultivated in two different ways, and it was remarkable how close to the trunks of the trees the cultivation had been extended. The accompanying illustration shows how the soil is kept stirred, and gives one an idea of the condition in which the field is left by the cultivators.

On this trip the visitors inspected the packing sheds. At one of them tomatoes were being packed for Northern markets. No peaches were being packed, on account of the excessive rains. The packing houses are very complete and are strongly built. Besides the sheds on Mr. Morrill's farm, another good house has been built for use by all the shippers who are conveniently located. This house was erected by the railroad company, with some additional subscriptions from the members themselves. This shed was used early in the season for packing potatoes, and at the time of our visit was not in use at all. It is well built and is convenient in every way.

CLEAN CULTIVATED ORCHARD OF MORRILL ORCHARD CO.

Just before noon the visitors were taken to the farm of Mr. W. C. Hall, which is one of the prettiest orchards in the country. Forty acres of peaches on this place which were planted two years ago last February have made a wonderful growth, and at the time of our visit had considerable fruit on them. Every tree was like its neighbor, and the visitors were impressed with the thrift and vigor of the trees. Mr. Hall was formerly a banker of Three Oaks, Mich., and came to Texas after his health began to fail. In his new home he has found health and is well satisfied with the outlook for financial gain. Mr. Hall welcomed the visitors to his place and distributed among them Carman peaches.

When the party returned to the hotel operated by the Morrill Company rain was falling steadily, and it was feared the afternoon trip would have to be abandoned. Dinner awaited the hungry crowd, and the visitors enjoyed the best meal they had in the state. After dinner the rain ceased, and the trip to the "Farris farm" began. This is a farm about four and a half miles from the railroad station, and part of this farm has been under cultivation for more than fifty pears. Notwthstanding this continuous cropping to corn and cotton, the soil is still in good condition, and has produced what many persons regard as the handsomest peach orchard in this country. Trees were planted two years ago last spring, and certainly they presented a handsome sight. The spotted places noted in some of the other orchards seemed to be lacking here, and every tree looked just like its neighbors. Not a tree was missing, all were pruned just alike, and the tree-rows presented a handsome appearance. In addition to growing peaches on this farm, tobacco, sweet potatoes and other crops are cultivated, and Mr. Morrill reports the yields as being in every way satisfactory. On this place were seen a number of convicts from the state penitentiary, who are working under the contract system. The former owner of the farm had houses built for the keeping of the prisoners, so that this class of labor could be utilized very nicely by the present owners.

This farm is four and a half miles from the railroad station, and many of the visitors were anxious to know how Mr. Morrill will handle the crop when once the trees come into full bearing. A good road has been constructed by the company connecting this farm with the railroad station, but the distance is a long one to haul peaches in hot weather. However, no one who knows Mr. Morrill will doubt his ability to overcome all obstacles when the time comes. The illustration shown herewith will give one an idea of the beauty of the orchard. The photograph was not as clear as it might have been, due to the condition of the atmosphere at the time it was taken. The farm was doubtless occupied by mound-builders at one time, and three of the largest mounds in the country are found here, from the summits of which one can obtain a magnificent view of the surrounding country.

The start on the return trip was made at about 7 o'clock, and the train had to proceed slowly, on account of the soft condition of the track. Tyler was reached at about 10 o'clock, and a delegation of citizens met the visitors at the train and escorted them to the Baptist Tabernacle, where a display of fruits and vegetables had been arranged, and where, in a formal way, the visitors were welcomed to the state. Addresses were made by a number of local persons, and a response was made by General Howard of Chicago. After the speaking and music the ladies of Tyler served light refreshments to the visitors. Next day a meeting was held at the same place with addresses by Texas horticulturists and others, an account of which appears elsewhere in this issue.

On Saturday many of the visitors returned home, but others visited Jacksonville, Athens, Waco, Galveston and other places, and at every point were given a hearty welcome.

Much credit is due to the Cotton Belt railway and Messrs. Dunlap, Saupe, Flanagan and other representatives of the company, who were untiring in their efforts to see that the visitors not only had a good time, but that they had opportunity to see as much of he country as possible. On behalf of the visiting holticulturists and editors Prof. Craig offered a resolution of thanks to the Cotton Belt railway and its officials, to the people of Tyler and the other cities for their hospitality and to the Morrill Orchard Co. for the very pleasant and instructive day spent in their orchards. These resoluions were adoped unanimously. J. M. I.

Meeting of Texas Fruit and Truck Growers.

In honor of the visitors from the North, the fruit and truck growers of East Texas arranged a meeting at Tyler for June 23. At this meeting the possibilities of fruit growing in Texas were discussed, and an exhibit was made of the products of the soil. In this exhibit were several fruits worthy of special mention. One was the Governor Hogg peach, which is a chance seedling, originating in Tyler. It is a very large semi-cling peach, with beautiful red cheek on white flesh; the skin is very tender, and the peach is not recommended for shipment on that account. Quality is good, and the very attractive appearance should make the peach a favorite for home market.

Another peach which was shown was the Wheeler. This is a very early peach, ripening with Alexander, or a little before it; clingstone; white, with red cheek; this peach is said to be of better quality than Alexander, and ripens all over at the same time; it is firm, and is a good shipper. The Wheeler peach will be introduced by the Texas Nursery Co., Sherman, Texas.

Still another new peach shown was the Guinn. This peach attracted much attention. It is ten to twelve days earlier than Elberta, and is thought to be a seedling of Late Crawford, as it has some of the characteristics of this variety. The Guinn is a yellow peach, with the surface almost entirely covered with red; quality is better than Elberta; a perfect freestone, with rather large pit. The peach is very firm, and has made a splendid record as a shipper. Roland Morrill planted 100 acres of this variety this spring. The Guinn will be introduced by the Guinn Peach Co., Rusk, Texas, or Sherman, Texas.

The Gonzales plum was much in evidence among the exhibits. It is certainly a beautiful plum, of very large size, yet its quality is not all that could be desired.

The meeting of growers was called to order by President Sam H. Dixon of the state association, who introduced Judge J. W. Fitzgerald, to de-

(Continued on Page 12.)

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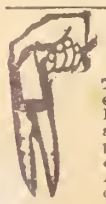

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Questions and Answers

H. H., Poplar Bluff, Mo.—What is the earliest and best strawberry for local market? Size is an important consideration in our markets. What is the earliest black raspberry?

The Excelsior is one of the earliest strawberries, but is tart, and for that reason many who grow fruit for local market have discarded it. The question of varieties will have to be settled after testing them. Warfield is a good berry to add to the list, and if large berries are wanted the Bubach will fill the bill, although the latter is soft and will not hold up for shipment. Try a few plants of a number of varieties and find which is best adapted to your soil. The Kansas for several years has been the favorite raspberry in this section, ripening ahead of Cumberland and Gregg, both of which are popular sorts.

W. W. R., Murfreesboro, Tenn.—Give directions for spraying raspberry plants for anthracnose.

It is claimed that anthracnose can be prevented by spraying the new growth in spring with Bordeaux mixture, but when once the disease gets a foothold in a plantation it is hard to eradicate it, except by digging up and burning the plants. If the new growth is sprayed early in spring, however, with Bordeaux mixture, it may be prevented.

H. A. D., Rhinbeck, N. Y.—Last year I put out about 400 apple trees and lost about one-third of them, through girdling by mice. What is the best method of preventing damage.

It is claimed that trees painted with Warnock's Tree Paint or Otwell's Tree Paint will not be attacked by mice. The former is sold by R. Warnock & Co., Independence, Mo., and the latter by W. B. Otwell, Carlinville, Ill. Keeping grass and trash removed from the base of the tree, and the soil in a loose condition will in most cases prevent the mice attacking the tree.

Cherry Trees on Plum Stock.—Some one wanted to know about cherry trees on plum stocks. I have several such trees eighteen years old, grafted on wild plum sprouts. Trees are mostly Early Richmond, rather dwarf in growth. I set the trees deep, so that they are now on cherry roots, I think. The trees will grow quite readily, if the work is done early in spring.—Henry Wilson, Clinton, Ill.

C. C. B., Martinsville, Mo.—Please give name of firm which buys cider and evaporated fruits.

Any of the larger grocery houses should be interested in this matter. Try some of the wholesale firms, such as Nave & McCord, St. Joseph, Mo., Ridenour-Baker Grocery Co., Kansas City, Mo.

C. G. M., Thayer, Kan.—Can some of The Fruit-Grower readers tell me if I can use commercial fertilizers for seed onions, and if so, how much to apply to the acre, and how same should be applied.

Who has had experience in using commercial fertilizers for this purpose?

W. H. H., Cotapaxi, Colo.—I note where The Fruit-Grower says the only way to keep cider sweet is to heat it and bottle it air-tight. Now, a merchant in Salida showed me a barrel of cider last fall which was treated in some way to keep it sweet. How about this?

Cider can be kept from fermenting by using salicylic acid or some other preservative, but anything which prevents fermentation will also interfere with the digestive organs of the person who drinks the cider, and the use of preservatives of this kind is not advisable. Who can give some satisfactory way, aside from heating and bottling air-tight, to keep cider, and at the same time not injure the cider in any way? Let us have a plan if a satisfactory one has been found.

J. B., Mt. Pleasant, Iowa.—What is the best method of handling cherries, either for home or foreign markets? What size package? What price should be paid for picking? We are just beginning to realize from our young orchard, and have a good demand locally but think our present methods of picking and measuring rather wasteful. Ought cherries to be sold by weight? And how much handling will they stand?

Sour cherries, such as are doubtless grown by the correspondent, are usually marketed in quart boxes, such as are used for berries, in this section. California cherries are sold by weight, but the sour cherries by measure. Of course, it is understood the cherries are picked with the stems attached. Growers in this section pay 25 and 30 cents per 24-quart crate for picking. The cherries are picked directly in the boxes, so that the fruit is handled as little as possible. Some growers face the tops of boxes, giving the fruit a better appearance. Packed in this way the boxes hold more fruit and a longer time is required to pack the boxes, and it is doubtful if the increased price paid for the faced fruit justifies the extra work and the increased quantity of fruit the boxes contain.

J. S. M., Martin, Tenn.—What is the best time of year to set blackberries? Should they be set on high or on low ground, and what is the best variety to grow in Tennessee?

Blackberries are generally planted here in the spring, although fall-planting may be all right in Tennessee. Blackberries want good soil, and low lands are all right, if well drained. Good, well-drained soil on hillsides is not objectionable. Varieties differ. Snyder is one of the most popular varieties, on account of its hardiness. Kittatinny is good, but inclined to rust. Taylor and Mercereau are planted, and the Blowers is a comparatively new claimant for favor. Early varieties are Early Harvest and Kenoyer. But it will be best to see what varieties succeed best in your neighborhood.

A. J. B., Virden, Ill.—I have ten acres of high ground, set two years ago in Champion and Ben Davis apple trees. I am thinking of sowing this orchard to alfalfa. Will it injure the young trees?

We have never seen alfalfa sown in but one orchard, and that was one near Hutchinson, Kan., and even there, where the soil is sub-irrigated, the practice is not recommended. One of the best orchardists in that section told us the alfalfa was not good for the orchard, and it would certainly seem that the crop in a young orchard would be injurious. A cultivated crop would be much better.

O. T. H., Keene, Texas.—I have a young orchard, part of the trees having been planted three years and part one year. The trees seem to grow all right in early spring, but towards summer the leaves on some of the trees turn yellow and fall off. What is the cause?

What kind of trees are they? For several years apple and cherry trees have suffered from falling leaves, in both cases the trouble being due to a fungous disease. In the apple the damage was caused by apple scab, and the cherry foliage was attacked by leaf spot. Both diseases were aggravated by the unusually wet weather. Last month we saw many peach trees in Texas which had yellow leaves, caused by too much rainfall. Perhaps this is what has caused the trouble to your trees.

P. J., Wellsburg, W. Va.—Formerly the Newtown Pippin apple, or the Albemarle Pippin, as some persons know it, was largely grown in this section and in Maryland, but of late years its culture has been abandoned. The fruit is a large, solid, greenish yellow apple, which has a fine flavor, and which keeps until late in spring. What are some of its advantages, as well as its disadvantages? Is it still a good market apple? What soil is best for it?

The Newtown Pippin is one of the best apples grown, but it does not succeed in all sections. If it grew well in your section at one time, it will doubtless succeed there now, and there is unquestionably a good market for all the fruit of this variety that can be grown. At present the variety is grown in Virginia and in Oregon, and the apples bring good prices, this variety being a favorite in English markets. The Albemarle Pippin, so-called, is simply the Newtown, as grown in Albemarle County, Va., where it reaches its highest development. If it does well with you, no better apple can be planted.

F. H. K., Galesburg, Ill.—We have five plum trees, which for several years bore good, heavy crops of plums. To our great surprise, one of the trees this season is full of red cherries. I have spoken to the florist here and he says he never heard of such a thing. This seems to me to be a pretty rich yarn to tell, but it is the truth, nevertheless. Please let me know if such a thing is possible. There are cherry trees across the driveway, on my neighbor's property, about 25 feet away from this tree which has acted so strangely.

Here is a nice howdydo, surely. A prominent grower who was shown the above statement says he can account for the condition only on the theory that the fruit which resembles cherries is not cherries at all, but only deformed plums. He suggests that the tree is diseased or dying, from some cause, and that instead of bearing a normal crop of plums it has deformed fruit, with a plum pit, and only a very little flesh about it, but that it is a plum, although resembling a cherry. Examine the fruit carefully, and see if this is the case.

Subscriber, Illinois.—I have a young orchard which has blighted badly. I have sprayed it with blue vitriol, paris green and lime mixtures, and wish to know if this will do any good.

It will not. The control of blight is a very hard proposition, and spraying is ineffectual. The only remedy which can be advised is to cut out the blighted portions, well below the place where the blight seems to extend. The parts removed should be burned. The disease is a bacterial one, which works in the sap of the tree in some way not generally understood, and as yet no remedy can be recommended, except to remove the blighted parts, to prevent a spread of the disease.

W. R. H., Forest Grove, Ore.—How can I kill the weevils in dry peas, before they eat their way out? Our peas have been badly infested with the weevil the last few years, and if we can kill them while in the pea we can soon stamp out the pest.

Answer by C. R. Crosby, Missouri Exp. Station: The weevils in peas can be destroyed by fumigating with bisulphide of carbon, using one pound of the liquid to 150 pounds of peas. This fumigating must be done in a tight room; the vapor is poisonous and very explosive, so that care must be exercised in its use.

A. M. B., Wichita, Kan.—Please. inform me of some remedy that will positively kill the web worm. I mean the web worm that attacks sweet potato vines, peppers, beets, etc. I have tried paris green and Bordeaux mixture, with not very good success. They seem to thrive on paris green, and Bordeaux mixture seems to check them

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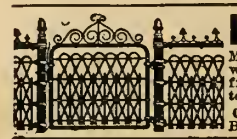

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The Newton Remedy Co., Toledo, Ohio.

but little, even when applied very strong, at the ratio of four pounds of lime to six pounds of copper sulphate. What shall I do now?

Answer by C. R. Crosby: It is probable that the worm attacking the sweet potato vines, peppers, beets, etc., is not the web worm but a stalk borer which has been reported as doing considerable injury at numerous localities this year. As the larvae live inside of the stalk, it is useless to apply insecticides to the outside. In small garden plots it might be well to kill the larvae by crushing the stems. The young larvae in the spring are to be found in the stalks of bluegrass, causing some of the heads to turn white while the others remain green. By cutting the grass and feeding it before the larvae have migrated to garden plants, corn, etc., many of them can be destroyed.

H. J. W., Pearisburg, Va.—I wish to purchase a disk harrow, and want to know which is better, a solid disk or the cutaway. If a cutaway, which is better, the double action or the single? I wish to use the harrow principally in the cultivation of a young orchard, but also in preparing land for wheat, peas, etc. I want it to take the place of a plow in the orchard. There are some rocks, both tight and loose, on my land: can disk harrows be used in rocks?

Answer by Dr. Whitten: It is impossible to state except in a general way what will be the best tool for a given man, because soils and experiences of men differ. In my personal judgment, however, the cutaway harrow, which is reversible and extensible, would be the best tool for the purpose mentioned. It is also a most excellent tool for preparing land for wheat, peas, etc. It will come nearer taking the place of the turning plow than any other harrow which I have used. If rocks are numerous they are a disadvantage. If not too abundant, however, the harrow ought to do good work. I do not think I would advise the use of the disk or cutaway harrow for a very rocky farm.

C. E. S., Wolf Creek, Ark.—How should Irish potatoes be prepared for a fall crop. I cannot get them to come up. (2) Also advise me what blackberry will grow here.

Answer by Dr. Whitten: I shall have to refer this query back with the suggestion that it be sent to Professor Walker, or someone else in Arkansas, provided you want accurate information. Unfortunately I have had no experience with the second crop potato growing that far south. (2) I know in a general way that the Early Harvest and the Snyder blackberries are grown largely throughout Arkansas and believe that the former for early and the latter for late would be the two best commercial sorts there.

Acetylene Light as a Help in Forcing Plant Growth.

The Cornell Experiment Station, Ithaca, N. Y., has conducted some experiments in using acetylene light in houses devoted to the forcing of plants, with very interesting results. It has been established that other kinds of light helped in forcing growth of plants, but acetylene light more nearly approaches the results of the sunlight. The National Nurseryman, in commenting upon these experiments, says:

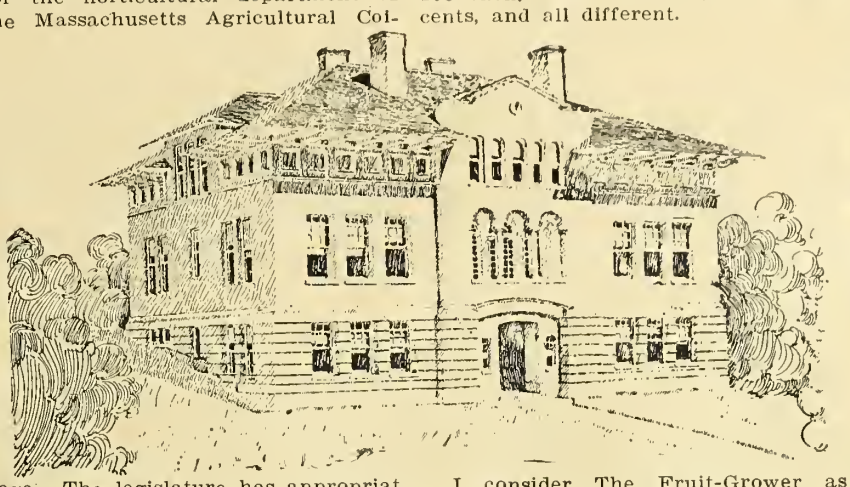
"Plants grown under acetylene light vegetated much more rapidly than others not under its influence and those grown for cut flowers reached the blooming stage considerably in advance of their competitors grown under ordinary sunlight only. Easter lilies grew twice as high and bloomed ten days to two weeks in advance of those outside of the acetylene lighted area. The growth of radish and lettuce was greatly hastened, and the yield in a given time much increased. The branches of flowering shrubs responded in a marked degree to the influence of the light. Those under acetylene light bloomed several days in advance of those in the same temperature and influenced by day light only. It was also proved that the plants under the influence of acetylene light only, would form chlorophyl as if grown in sun light."

Blueberries in Arkansas.

W. H. Meek, Hawes, Ark., sends some notes concerning blueberries, to add to what was offered by H. O. Lane, Mena, Ark. Mr. Meek says he has a lot of blueberries on his place, which bear large crops of fine fruit. They bring the highest price of any of the wild berries, readily selling for 60c per gallon in the Hot Springs market, which is at the rate of $4.80 per bushel.

New Horticultural Building for Massachusetts.

We present herewith an illustration showing the proposed new building for the horticultural department of the Massachusetts Agricultural College. The legislature has appropriated about $40,000 for erecting and equipping this building, and Prof. F. A. Waugh, professor of horticulture, is naturally much pleased. Prof. Waugh writes The Fruit-Grower that it will be the best horticultural building in connection with any agricultural college in America, and its erection is but an indication of the increased interest which is being taken in this branch of agriculture.



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Not alone for the comfort of animals, but from a business standpoint as well, farmers and dairymen should protect their cattle from flies and insects during the summer time.

When it is taken into consideration that statistics show the loss to dairymen and farmers during the one hundred and fifty days of fly-time amounts to the enormous sum of $500,000,000 in the United States alone, it becomes of vital importance that a stock protector should be used.

Almost a quarter of a century ago there was first offered for sale a complete remedy for keeping flies off cattle, called "Shoo-Fly." Year after year this protector has done what has been claimed for it, and today it is recognized as the most effective made, because it protects cows longer in pasture than any imitation. When patent sprayers are used many flies are killed with the "Shoo-Fly" spray.

"Shoo-Fly" is known as the animals' friend. It has earned for itself a great reputation, not only at home but in foreign countries. It is harmless to man or beast. Besides being the greatest stock protector known, "Shoo-Fly" cures all sores, scratches, skin diseases, hoof ailments, etc.

"Shoo-Fly" is for sale by mostly all dealers, but if for any reason it cannot be obtained, send $1.00 to the Shoo-Fly Manufacturing Company, 1025 Fairmount Avenue, Philadelphia, Pa., and get in return the latest improved three-tube sprayer and enough "Shoo-Fly" to protect 200 cows. If it does not do what is claimed for it, money will be cheerfully returned.

Real Estate Business by Mail.

Within the past few years, since people have been educated to buy goods of all kinds by mail, other lines of business have been using the mails to advantage. Among the firms which have been successful in this work is A. P. Tone Wilson, Jr., Topeka, Kan., who has built up a wonderful business selling real estate by mail. Mr. Wilson writes that he sells real estate and business propositions in all parts of the country. He advertises in more than 2,500 different publications, and has over 2,000 branch representatives in different parts of the country. Mr. Wilson will be glad to explain his plan to anyone interested, and will answer all correspondence fully.

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The Southern Pacific will make very low rates to California and the West from Sept. 15 to Oct. 31, 1905. Write today for advance information to Chas. S. Fee, P. T. M., Dept. G, Southern Pacific, San Francisco, and ask for iddustrated California books, 10c each, 3 for 25 cents, 4 for 30 cents, and all different.

I consider The Fruit-Grower as necessary to the fruit farmers as the binder is to the wheat-grower. It has been worth many times its cost to me.—S. McMillen, Gentry, Ark.

PERSONAL—If the descendants of David Moore, who lived in St. Joseph, Mo., about 25 years ago, will write me, I have information which may benefit them. Mrs. Bross, Miles City, Montana.

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is fast becoming popular with leading orchardists and nurserymen as a protection for fruit trees from all insects and animals that infest the trunks of trees. It is reliable for what we claim for it. Its use means less money expended and less labor performed than is unavoidable if any other devise is used. Think of only one application for three long years. Write for new circular, which gives the strongest kind of testimonials, also all necessary information concerning its use, price, etc. Agents wanted.

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Are the best and cheapest because first cost is the only cost. Repairs are unknown. Only a coat of paint now and then is required. No danger of being without water at any time if you use a CALDWELL OUTFIT. Send for catalogue and price list which will convince you.

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a two-cylinder gasoline engine superior to all one-cylinder engines; revolutionizing gas power. Costs Less to Buy and Less to Run. Quickly, easily started. No vibration. Can be mounted on any wagon at small cost—portable, stationary or traction. Mention this paper. Send for Catalogue. THE TEMPLE PUMP CO., Mfrs., Meagher & 15th Sts., Chicago.. THIS IS OUR 61ST YEAR.

Hammond's Slug Slot for Potato Bugs, Cabbage Worms, Etc.

TO THE EDITOR OF AMERICAN GARDENING:

In your issue of June 18, on page 399, I notice a good article on the Colorado Beetle, or Potato Bug. For the benefit of your numerous readers I would advise them to try **Hammond's Slug Shot.** I have used it here this season with excellent results, on Potatoes, Egg Plants, Cucumbers and Squash—for Potato Bugs, and also for Striped Beetles, and it is the best remedy I know of, simple and effective. I purchased two of the **Dusters** which he advertised in your paper, and they are very useful articles. The best time to dust the plants is early morning, as the substance adheres much better when the dew is on. A light dusting is sufficient, and woe betide the bugs or the larvae. Once they get a taste of it they shrivel up right away.

GEORGE STANDEN, Gardener to Col. D. S. Lamont, Millbrook, N. Y., 1904.

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If interested, write us for prices. CALIFORNIA PINE BOX & LUMBER CO., Rialto Bldg., San Francisco, Cal.

(Continued from Page 9.)

liver the address of welcome. The address was responded to by James M. Irvine of The Fruit-Grower, on behalf of the visitors.

Before introducing the speakers, President Dixon said he wanted to ask President Gilbert Onderdonk of the Texas Holticultural Society to talk awhile on the subject of peaches. Mr. Onderdonk has given the peach a great deal of study and compiled the classifications of varieties into families which has been adopted by the United States Department of Agriculture. He had visited Mexico for the department, and had there secured some valuable facts which will be made public by the department. In his locality, Mr. Onderdonk said, only the Spanish class of peaches can be grown. None of this class are early, so that commercial peach growing in his section will not be a success, for the growers could not compete with the growers in the northern part of Texas, where earlier varieties can be grown. The Spanish class are richer than the Chinese class, the speaker said. Mr. Onderdonk told of a large apricot tree which he found in Mexico, which bore perhaps two wagon loads of fruit. This variety was not of good quality, but Mr. Onderdonk believes that it is likely to produce seedlings of value. While looking for apricots he found a number of good ones—one was found which bore fruit six inches in circumference, of excellent quality; this he believes is worthy of being introduced into Texas.

L. A. Goodman of Missouri delivered an interesting address on "The Influence of Environment in Growing Fruits." He said the adaptability of a given variety is the first essential; without this, failure is certain. In no section can one grow everything, and it is best to study the behavior of fruits and plant those which are adapted to the environment, climate, etc. Mr. Goodman told of the variation in apples as they go westward, becoming more elongated; also in peaches as they come from the South to the North, becoming more inclined to clings. The character of soil, subsoil and the elevation are important factors in growing fruits. No better fruit lands can be found than we saw on our trip in East Texas, but not all the soil is good, and a mistake is made in planting large solid blocks. Study the soil, elevation, etc., and then plant the varieties which are adapted to conditions.

F. W. Malley, Garrison, Texas, who came from Iowa to Texas, talked along the same line, and said that the fruit-grower who hopes to succeed must avail himself of all the scientific instruction he can get, in addition to his practical experience.

George McManus, who came from Minnesota, told of his experience in Texas, where he had found health and where he had prospered.

Roland Morrill was called upon for a talk, and said the future of fruit-growing in Texas is going to be a question of the individual himself. The country is all right; success rests with the man. Mr. Morrill said he had seen most of the fruit sections, and after having seen them all, he is satisfied with Texas. He has no sympathy with some of the extravagant statements which have been made, but said he had found Eastern Texas a good, satisfactory country to live in, and that he believes it has a future in fruit growing is demonstrated by the fact that he has spent all the money he has in trying to develop his orchards. The country is new, and while it has many troubles, it at the same time escapes many to which the North is subject. He said he believed that much of the land now selling for $5 to $25 per acre has the same possibilities as the land in Michigan, which sells for $200 to $500 per acre.

"Texas offers the same advantages that other sections do," said Mr. Morrill, "and it has the added advantage of a good climate and cheap soil. But we must not become over-sanguine. I should hesitate to advise any one with a good business to sell out and come to Texas to engage in fruit growing. The man who comes here with plenty of money and with no previous experience in the fruit business is in grave danger; the man who comes with some knowledge of the business and with some money stands a good show to succeed, and the one who comes with some knowledge of the business and with no money can get a start."

Colonel Dick Bonner made an excellent talk, in the course of which he located the Garden of Eden in Eastern Texas. H. M. Stringfellow gave an interesting talk, along the same lines as his talk at the nurserymen's meeting, which is reported elsewhere in this issue.

Remarks were also made by Prof. John Craig, Louis J. Wortham, William H. Barnes of Kansas, E. W. Kirkpatrick of Texas, W. B. Flick of Indiana, Prof. E. C. Green and others.

During the meeting a telegram was received from C. D. Jarrett of Jacksonville, who was to have addressed the meeting. He stated that he was too busy to leave home. Up to that time Jacksonville had packed 165 cars of tomatoes, 120 of which had been sold on track at prices ranging from $375 to $1,350 per car.

Talks with growers present at the meeting developed the fact that the rainy season had seriously interfered with the development of crops. The rainfall had been unprecedented. Since January 1, 1905, the rainfall had amounted to 54 inches, whereas ordinarily the average rainfall for the entire year is only 51 inches. The excessive rainfall also seriously interfered with the trips which the visitors had intended making throughout the surrounding country.

One Way to Raise Peaches in New England.

I have yet to find the person who can remember a more severe winter in Massachusetts than that of 1903-4. Eleven times in the winter the thermometer reached from 6 to 18 degrees below zero during the night, and in many places nearby reached 22 degrees below. In spite of this I raised the largest crop of peaches the following season that I have ever grown, and as I have practiced some things in my orchard contrary to the advice of good authorities on the subject, possibly others may like to test some of my methods for themselves, and the more so since there were so few peaches raised here last year, many of the trees themselves being injured.

No better thing can one obtain, if he intends to raise fruit, than a thorough love for the art (I will not disgrace so noble a calling by naming it work), and an ideal no lower than success for the goal. Fifteen years ago, acting on the advice of Mr. J. H. Hale in an article published in the New England Farmer, I set three or four varieties of the very hardiest peaches on a hill that was both the highest and had the poorest soil in all the farm; where the only crop was wood violets and lamb-kill. We plowed the ground, spread thoroughly with barnyard manure and set the trees immediately without previous cultivation. We cultivated the land, raising such crops as beans, potatoes or fodder corn, and I will add that such has been our method of setting trees and then cultivating ever since.

Why, you ask, did I not use ashes, commercial fertilizer and the like? Simply because I thought I could not afford the expense, since peach raising in this locality had been a complete failure for many years, and this was only an experiment. The trees lived, however, and thirty of them are alive today, and bore 100 baskets of peaches last season.

The soil was mainly gravel or yellow sand, very little of the orchard being on what is worthy to be called loam. I will add just here that as I enlarged the orchard from time to time I reached two markedly different conditions of soil; one a dark rich loam washed from the top of the hill, the other an outcropping gravel where nearly all the soil had been washed away. On the former situation the trees, only two years set, look the poorest of any in the orchard; on the latter stand many of the most thrifty trees of all, none seeming to suffer for lack of plant food.

One mistake was made at the start in not heading in the young trees in August. One winter when the first set trees were small the thermometer reached 20 degrees below zero, and the trees nearly died from the effect of the cold; but notice that last winter was even more severe than that, probably, and still hardly a tree was injured. I will tell you a little farther on why, in my opinion, this happened.

Another experiment I tried, contrary to the usual custom. I set trees way over on the southern slope of the hill because the soil was less rocky and easier to cultivate there. The trees came through last winter as well on that side as on the north; moreover, I have seen in other orchards the same thing, where the trees were entirely protected from the north, and exposed to the hot sun on the south, yet hardy and bearing enormous loads of fruit.

In March we prune carefully, removing all dead or superfluous wood. The first trees were allowed to grow up, until it now needs a balloon to get the peaches.

Every spring I spray thoroughly with a Bordeaux of about 3-6-50 strength. This effectively squelches the leaf curl, except in the Carman variety. Spraying should never be done, certainly with a mixture of this strength, after the leaves open; I find it worse than the leaf curl.

A part of the orchard not cultivated but mulched thoroughly last year, showed the effect of the lack of cultivation by the yellow leaves and small fruit. Two rows that were set to strawberries about ten years ago, and not cultivated for two years, never reached the size of adjacent trees, nor did they bear for a long time.

I believe in thorough thinning when needed, but seldom do we get heavy enough crops here to need much thinning, except after very favorable winters.

Near the orchard, and perhaps fifty feet lower, is a valley-like depression, and I imagine that the cold air settles there so that very few trees showed severe winter killing from last winter's cold. There is a difference, however, and that very marked, between certain varieties.

One thing I rely on to help out greatly in preparing the trees for winter, a sort of warm flannel arrangement, viz: a thorough clipping of all the new grown twigs of from one-half to one-third their length, about the last of August. Last season I chanced to do this at just the right time, the sap not having entirely stopped flowing, nor yet flowing so fast as to force weak late shoots near the tops of the clipped branches. As a result the trees threw their energy into strengthening the clipped branches, even to the very tips. This, I think, helped to save my trees last winter, and its neglect to injure them at the time when my first trees so nearly died.

The varieties showing least resistance to the cold were Globe (the trunks being partly decayed and evidently the tree very tender) and Niagara. The latter always dies back so much that the trees make very little progress. Crawford, too, is tender in bud. Crosby always looks as if the wood were injured after a hard winter, but its buds are hardiest of all. Early Canada, Alexander, Triumph, Greensboro and Carman are very hardy, but the latter rots too badly and the leaves curl so persistenely as to make it of no use to me. Fitzgerald seems now to be far better than Crosby, which has been too largely planted here, on account of its lack of size. Champion, Mountain Rose, Old Mixon and Stump are fine in all ways.

After variety, cultivation, etc., have been considered, one thing of the greatest importance remains, viz: handling the finished product. In New England the fruit should be allowed to remain on the trees until that fine yellow color begins to spread over the skin and the peaches begin to mellow just the least bit, and not until that time can they be picked and be at their best. I never clean up a tree very thoroughly until most of the peaches show that they are mellowing a bit. It is surprising how long such fruit will keep if placed in an ordinary cellar. One of my customers showed me fresh peaches bought of me early in October and the day I saw them was November 7. But we live near the markets. Grading carefully sells the fruit better than hiring an agent for the purpose could do. I always make two grades and sort very carefully and sell to local dealers or customers as much as possible.

Have a passion for the work; never be discouraged, and you may enjoy growing one of the finest fruits that the Creator ever gave to man.

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MEN OR WOMEN CAN MAKE MONEY
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promptly kills all insect vermin and makes sitting hens comfortable. Sample 10c; 100 oz., $1.00 by express.

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401 Detroit St., Cleveland, Ohio

From Furnace to Field

The greatest care is exercised in the manufacture of Page Fences. Every furnace charge is tested, every wire carefully drawn, annealed and galvanized, every loom operated by skilled labor and every piece of fence properly erected.

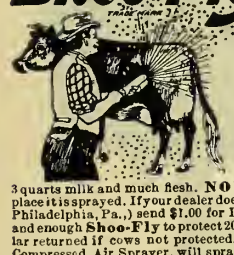
PAGE WOVEN WIRE FENCE CO.
Box 3254 Adrian, Mich.

FENCE *Strongest Made*

See how closely it is woven. Sold direct to the farmer at factory prices, on **30 Days Free Trial.** Your money back if not satisfied. Write today for free Catalogue.

COILED SPRING FENCE COMPANY
Box 125 Winchester, Indiana.

Shoo-Fly THE ANIMALS' FRIEND



Kills every fly it strikes, when either of our patent sprayers are used; keeps off the rest. **Shoo-Fly** is the original stock protector, absolutely harmless to man or beast. Cures all sores, Prevents contagious diseases, used by same dairymen since 1885, because it protects cows in pasture from all insect pests longer than any imitation. Half cent's worth saves 3 quarts milk and much flesh. **NO LICE** in poultry house or any place it is sprayed. If your dealer does not keep **Shoo-Fly** (made in Philadelphia, Pa.,) send $1.00 for Improved Three Tube Sprayer and enough **Shoo-Fly** to protect 200 cows. Name exp. office. Dollar returned if cows not protected. **Free Booklet** describes Compressed Air Sprayer, will spray 50 cows in few minutes.

SHOO-FLY MF'G. CO., 1025 Fairmount, Phila., Pa.
EDITOR knows from experience **Shoo-Fly** is O. K.

St. Joseph Business University

WE TEACH

CHARLIERS Shorthand in from seven to ten weeks, a marvelous system. Also teach **Bookkeeping, Penmanship, Telegraphy and English.**

Graduates secure positions. Fine equipment. Superior faculty. Fall term begins Sept. 1, 1904. Catalog free.

E. E. GARD, St. Joseph, Mo.

Seven Great Colleges

Chillicothe Normal College
Chillicothe Commercial College
Chillicothe Shorthand College
Chillicothe Telegraphy College
Chillicothe Pen Art College
Chillicothe Musical College
Chillicothe Typewriting College

For Free Catalog address

Allen Moore, Pres., Chillicothe, Mo.

Car fare paid as per schedule.

Gem City Business College

Quincy, Ill.

20 experienced teachers; 1400 students; $100,000 school building. Shorthand, Bookkeeping. 64-page illustrated catalog *free*

D. L. Musselman, Pres.

Make your own Fertilizer at small cost with

Wilson's Phosphate Mills

From 1 to 40 H.P. Send for Catalogue.
Wilson Bros., Sole Mfrs., Easton, Pa.

LOADED WITH **SAVE MONEY** by buying the "MEND-A RIP" and do your own repairing. Will sew anything from a buckskin glove to the heaviest tug. Will rivet tin or leather. Made of forged steel. Agents make from $8 to $15 a day. Write now for special sample price. **J. E. STROYER & CO., Englert Street, Rochester, N. Y.**

Poultry Department

Scientific Poultry Raising.

The Cyphers Incubator Company has bought a fifty-acre farm near Buffalo, N. Y., and will establish a complete poultry plant. This will be in charge of Prof. James Dryden, who had charge of the extensive poultry experiments conducted by the Utah Experiment Station. We mention this fact, not to advertise the incubator company, or even to advertise its farm, but to show that Prof. Dryden is to be given an opportunity to make good certain facts which were developed by his experiments. He is one of the very earnest men in advocating the breeding of poultry for egg-production, and it is to be hoped that from his efforts the poultry-keepers of the country will derive great benefit. His work will be watched with interest.

The farmer who combines poultry with general farming soon learns by experience that he can profitably modify his farming to suit the poultry annex; and also that the management of the poultry will require some change to correspond with conditions different from the town lot poultry yard. He has to study how to save labor, without materially impairing efficiency in results. His hen houses will be of the plainest kind with movable fixtures as requiring the least labor to keep disinfected and free from insect pests, and the bothersome dropping board is done away with.

When I began to give some special attention to poultry on the farm, I thought that the dropping board was one of the first things to adopt in improving on the customary farm practice. Since I have discarded them, I become daily more convinced that they are useless for the farmer's hen house, or, in any case, unless floor room is much restricted. Scraping off the boards every day and dumping the contents into a barrel, there to heat and lose their most valuable fertilizing properties, seems to be the orthodox method, but the farmer can do better.

The space beneath the roosts is separated by a board and is reserved for the droppings, and the balance of the floor space is for scratching purposes. Soiled litter is thrown under the roosts occasionally as a diluent of the concentrated hen manure, and, about once a week, plaster or acid phosphate may be scattered over it in small quantities to keep down odors and to prevent the loss of ammonia. About once a month the accumulation is thrown in a wagon and spread where wanted in the garden or as a dressing for grass land or wheat. I usually spread it on the poor spots and find frequently that the places so treated bear the best grass and wheat, its effect showing also in the subsequent crop. It is a very valuable manure if not allowed to ferment. Although the dry manure contains more nitrogen than most of the complete fertilizers, it does not pay to pulverize and apply to grain in the drill. It requires too much labor, and, as a certain amount of artificial fertilizers should be used on the farm, their appropriate place is for drilling with the grain drill. Neither is it as economical to make a "muck pile," as is sometimes done, using the hen manure as the principal ingredient and carrying the mixture over the corn field at planting time and dropping it in the hill at the expenditure of a prodigious amount of labor. By hauling direct from the poultry houses where it is mixed with litter, and spreading on the surface, its entire fertilizing value is made available as cannot be done in any other way.—G. Davis in Ohio Farmer.

The Useful Egg.

No article of food is better known then the product of the hen. Aside from the mere matter of its use as an article of diet, a writer in the New York Weekly has pointed out some of the many uses to which it adapts itself readily. He says:

"A raw egg swallowed at once when a fishbone is caught in the throat beyond the reach of the finger will dislodge the bone and carry it down. The white of a raw egg turned over a burn or scald is most soothing and cooling. It can be applied quickly and will prevent inflammation, beside relieving the stinging pain. A mustard plasted made with the white of an egg will not leave a blister. The white skin that lines the shell of an egg is a useful application for a boil. The white of an egg beaten with loaf sugar and lemon relieves hoarseness—a teaspoonful taken once every hour. An egg added to the morning cup of coffee makes a good tonic. A raw egg with the yolk unbroken, taken in a glass of the best sherry wine, is beneficial for convalescents. An excellent remedy for bowel troubles is partly beaten raw egg taken at one swallow. It is healing to the inflamed stomach and intestines and will relieve the feeling of distress. Four eggs taken in this manner in twenty-four hours will form the best kind of nourishment as well as medicine. The white of a raw egg is the most satisfactory of pastes. Papers intended to be put over tumblers of jelly and jam will hold very securely and be air tight if dipped in the white of an egg. A raw egg is one of the most nutritious of foods and may be taken very easily if the yolk is not broken. A little nutmeg grated upon the egg, a few drops of lemon juice added, some chopped parsley sprinkled over it, or some salt and a dash of cayenne pepper, vary the flavor and tend to make it more palatable."

Remedy for Diarrhoea.

Here is a remedy recommended for fowls and small chicks afflicted with diarrhoea:

"Take an old burnt kitchen vessel and place on a hot stove empty. Let it get very hot and pour in sweet milk and let both remain on the stove long enough for the milk to thoroughly scorch. Feed this to the fowls, young or old, in clean vessels. You need not remove all water from the chickens when giving this remedy, but do not allow them much, as they may refuse to drink enough of the scorched milk—if given plenty of water—to cure the bowel disease."

Horse Owners! Use

GOMBAULT'S **Caustic Balsam**

A Safe, Speedy, and Positive Cure

The safest, Best **BLISTER** ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from **Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING.** *Impossible to produce scar or blemish*

Every bottle sold is warranted to give satisfaction Price $1.50 per bottle. Sold by druggists, or sent by express, **charges paid,** with full directions for its use. Send for descriptive circulars.

THE LAWRENCE-WILLIAMS CO., Cleveland, O.

GOOD AGENTS WANTED **GRIND** SMALL GRAIN AT HOME

Don't pay out grinding charges having a large amount of grain ground at the mill, which grows stale before being used. The

Black Hawk Grist Mill

grinds wheat, rye, rice, coffee, spices, and in fact all small grains, fine or coarse as desired, either for table or farm use. You can grind as much as you need for your immediate wants, thus insuring fresh ground grain at any time. The **Black Hawk** not only pays for itself by saving grinding charges, but is a constant money-maker for you. Poultry raisers find the **Black Hawk** invaluable for cracking corn. The mill is simple in construction, easily taken apart, cleaned and set up. The grinding-plates are of hardest metal, all the bearings are chilled, and the long malleable iron crank makes grinding easy. All parts are interchangeable and can be replaced at any time. **Sent prepaid on receipt of $3.00.**

A. H. PATCH, Sole Manufacturer, CLARKSVILLE, TENN.

BARBERS

MAKE EASY MONEY

We teach the business thoroughly in 6 weeks. You can make expenses while learning. Barbers make $15 to $25 weekly. Our FREE Catalog tells about it. Write today.

Kansas City Barber College,
F. C. Bridgford, Prop.,
108 Delaware, Kansas City, Mo.

STUMP PULLERS SEVEN SIZES **$17.50 UP**

WE PAY THE FREIGHT **CATALOG FREE**

DEPT **W. SMITH GRUBBER CO** LACROSSE WIS

Alfred H. Hayes, an extensive vineyardist of Chautauqu aCounty, N. Y., writes: "I am subscribing for more agricultural papers than I really have time to read, and I intended stopping The Fruit-Grower this year. However, when I received your handsome and elaborately gotten up paper, I feel I can always get my money's worth out of it, if I read only one tenth part of it, therefore I inclose $1 to renew for three years."

DO THIS NOW

SPECTACLE WEARERS.

Just send me your name and address and I will do this: First I will mail you my Perfect Home Eye Tester, free. Then (after you have sent me your test) I will mail you a Perfect Fitting Five Dollar Family Set of Spectacles for only $1, which will include a pair of my Handsome Rolled Gold Spectacles, absolutely free of charge. I am just doing this to prove to every spectacle wearer in the world that my Spectacles are the most perfect-fitting, clearest and best in the world today, and I will return your dollar as cheerfully as you send it, if you yourself don't find them to be the finest, clearest and best you have ever bought at any price, anywhere. Address:—

I WANT AGENTS ALSO.

And any man or woman (also storekeepers), without any previous experience whatever can fit the weakest eyes with my Improved Metal Eye Tester, which is so simple that anyone can test with it with absolute correctness. If you are not earning at least $25.00 weekly don't delay another minute as my agents are making from $25.00 to $100.00 every week, selling my famous Spectacles, either in their homes, traveling, or in stores. My Agent's Outfit includes my Latest Improved Metal Eye Tester, a Handsome Traveling Spectacle Case and everything else necessary to start you right, also the necessary documents showing that Agents need no license anywhere.

Write me at once as this is the best time to begin. Address:—

DR. HAUX SPECTACLE CO., Haux Bldg., St. Louis, Mo.

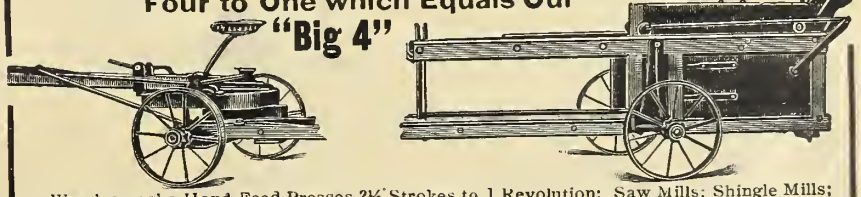
NOTE.—The above is the largest Mail Spectacle House in the United States, and perfectly reliable.

2 Tons in 1 Hour with 1 Good Horse

4 Strokes to 1 Revolution Automatic Feed and Hopper

Horse Power and Belt Power Combined, at Price of One. Twice the Capacity of other Balers at half the price, is

Four to One which Equals Our "Big 4"



We also make Hand Feed Presses 2¼ Strokes to 1 Revolution; Saw Mills; Shingle Mills; Planers; Edgers; Lath Mills; Corn Mills; Water Wheels, etc. Write for Catalogue.

DeLoach Mill Manufacturing Co., Box 1007 Atlanta, Ga.

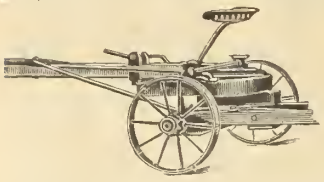
STARK FRUIT BOOK

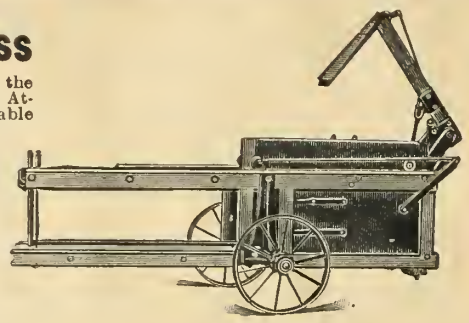
44 pages 9 x 12 inches; 22 colored plates showing in natural colors 216 varieties of Fruit, with concise description, including season of ripening of each; 64 half-tone views of Nurseries, Orchards, Packing Houses, etc. **Send 50 cts.** and we will send the book post-paid, and **Rebate Ticket** permitting return of book **by mail** within 60 days and we refund 50 cts. Or, mail within 1 year, Rebate Ticket with $12 order for nursery stock and we credit $1.00 in part payment on order and you KEEP THE BOOK **free. WE PAY THE FREIGHT.**

WE PAY CASH weekly and want **more** home and traveling salesmen. OUTFIT FREE.—**STARK BRO'S, Louisiana, Mo., Atlantic, Iowa, Fayetteville, Ark.**

A Reliable Hay Press

The "Big 4" Hay Press, manufactured by the DeLoach Mill Manufacturing Company of Atlanta, Ga., Box is meeting with a remarkable sale, due to its undoubted merit.





With one good horse it will bale two tons of hay per hour, and keep it up just as long as you wish to run it.

Still another desirable feature of the Hay press is its great ease of runuing. An ordinary hay press would soon tire a horse and then there would be lost time while the horse was allowed to rest. One horse can easily do the packing on the "Big 4" Press, and walking at a speed of 2¾ miles per hour, the press makes four revolutions per minute and four 16-inch strokes to the revolution. This gives in the smaller size machine an easy capacity of sixty 70-pound bales per hour, each bale being 14x18x36 inches.

The machine has automatic feed, also automatic hopper. It is horse power and belt power combined. A four-horse power press can be converted into a belt power press at an extra cost of only $20. For rapid and perfect work it stands far in the lead, and when you figure that it sells at only half the price of other balers it will not take you long to decide that the "Big 4" is the Press for you. The DeLoach people will be glad to send their catalogue free to any of our readers. Better write for it today.

NEW CATALOGUE OF DE LAVAL CREAM SEPARATORS

One of the most complete, interesting and up-to-date catalogues ever published on the subject of Cream Separators has recently been issued by the De Laval Separator Company, of New York.

To both the experienced and inexperienced buyer of Cream Separators the new De Laval catalogue offers a source of much valuable information. Not only is the importance of the Cream Separator as a profit making machine for the cow owner discussed therein in a clear and easily understood manner, but the book is illustrated throughout with cuts of the different styles of De Laval machines and their interior parts, which illustrations give the reader an excellent idea of the De Laval separator and its operation. The superiority of the "Alpha" or "Disc" system of separation over the old "hollow-bowl" system is illustrated and set forth in an interesting manner. In fact almost any question one might ask concerning separator construction is fully answered in the De Laval catalogue.

Attention is also called to the improvements made in the 1905 De Laval machines, and the fact that the De Laval separator today offers even greater advantages to the user than ever before. Over twenty-five years of experience in manufacturing separators, on the part of the De Laval Company, have made the 1905 De Laval machines ideally perfect in skimming efficiency, durability, ease of operation, etc. A better understanding is had of De Laval "value" and of the important part it has played in developing the modern dairy industry of the world when attention is called to the fact that over 600,000 De Laval machines are in actual use today, and that one big western creamery concern alone has sold over 15,000 De Laval separators and is paying out on an average of $3,000,000.00 each year for De Laval produced cream.

The high standard of separator value which has been maintained in the De Laval machines, and for which they have been renowned for a quarter of a century, is well worthy the consideration of every prospective buyer, and any one seeking separator facts or information upon the centrifugal separation of cream can do no better than write to The De Laval Separator Company, at their General Offices, 74 Cortlandt st., New York, or one of their various branches, for a free copy of their most interesting catalogue.

BLACK BEN IN PENNSYLVANIA.

One of my neighbors set out an orchard, mostly Black Ben Davis, four years ago and fruited some nice apples when all others failed. This year the trees are bearing heavily where other sorts do not alongside. The Black Bens are the nicest apples I ever saw; tree a vigorous grower, apples long keeper and better flavor than the old Ben Davis or Gano. The apple is dark red, smooth and larger. Nearly everybody has planted them in this section and in a few years, they will make their appearance on the market.—J. L., Rohrbaugh, York County, Pa., in National Stockman and Farmer.

Casselman & Co., largest dealers in Old Virginia lands, with headquarters at Richmond, in that state, and whose new advertisement appears elsewhere in this paper, desire to send to every farmer reader who wants to investigate the subject, their new illustrated catalogue. It will show you why Virginia today offers the greatest opportunity in America for the homeseeker, with its healthful salt sea breezes, its cheap lands, and its adaptation to crops wanted in the large eastern cities so near at hand. Look this matter up. It will be a revelation to you.

Numerous inquiries as to where competent veterinarians can be secured to locate in communities needing services of men of that profession are coming in daily to the Kansas City Veterinary College, of Kansas City, Mo. Persons who think they would like that line of life work would do wisely to enter a veterinary college and prepare themselves to meet this continual growing demand for competent veterinarians. The advertisement of the above school is found elsewhere in this issue.

A new firm whose first advertisement appeared in last month's Fruit-Grower, is that of Beecher and Beecher of Belleville, Kans., who come to us with first-class endorsements. They write that one of the firm is now in Idaho taking photographs and examining their lands with a view to issuing an illustrated booklet describing them. This should be interesting to our readers and may be had on request.

The persistence of the Jul. Andrae & Sons, 869 W. Water st., Milwaukee, Wis., in advertising their farm telephone systems during the past four years has met with such remarkable success that the Andrae people are now advertising in over 150 agricultural publications, whereas, four years ago they started advertising their farm systems in only nine agricultural papers. The Andrae people advertise throughout the entire year and make a very liberal proposition to farmers. They send a large catalogue which explains fully how farm telephones are put in, what they cost and how they are operated, absolutely free to any one who will write for it.

I have taken The Fruit-Grower but a short time, and find it not only interesting, but the most complete of the fruit journals.—Alfred P. Mead, Croton Falls, N. Y.

Mme. Benoit's
RUSSIAN DEPILATORY
Instantaneously
Removes
SUPERFLUOUS HAIR
without torturing, blistering, discoloring or leaving any blotch, signs or other ill effect on the skin. It is an effective, instantaneous, harmless remedy.
Send for Booklet giving full information.
MME. BENOIT, 2 E. 42d St., New York City.

TRUCK AND FRUIT LANDS
ALONG THE
IRON MOUNTAIN ROUTE

IN ARKANSAS AND LOUISIANA HAVE PASSED THE EXPERIMENTAL STAGE, AND IT IS POSSIBLE FOR ONE TO PAY FOR HIS FARM IN ONE YEAR'S CROP AND STILL HAVE A RESERVE FUND TO CARRY HIM TO THE SUCCEEDING YEAR. $5 TO $10 PER ACRE IS THE PURCHASE PRICE. THE MAN OF SMALL MEANS SHOULD BUY NOW AND SECURE THE BENEFIT OF AN EXCELLENT INVESTMENT.

THIS IS THE RAILROAD WHICH CARRIES YOU TO INEXPENSIVE AND COMFORTABLE HOMES—

CLIMATE IDEAL.
FARMING AND STOCK RAISING THE YEAR AROUND.
4—TRAINS DAILY FROM ST. LOUIS—4

QUICK TIME, BEST SERVICE, SPECIAL HOMESEEKERS' RATES, AND FREE RECLINING CHAIR CARS.

THINK THE MATTER OVER, AND WRITE US FOR LITERATURE AND DETAILED INFORMATION.

H. C. TOWNSEND,
GENERAL PASSENGER AND TICKET AGENT.
ST. LOUIS, MISSOURI.

PILES NO MONEY TILL CURED. 27 YEARS ESTABLISHED
We send FREE and postpaid a 232-page treatise on Piles, Fistula and Diseases of the Rectum; also 108-page illus. treatise on Diseases of Women. Of the thousands cured by our mild method, none paid a cent till cured—we furnish their names on application.
DRS. THORNTON & MINOR, 1003 Oak St., Kansas City, Mo. and 3969 Olive Street, St. Louis, Mo.

FRUIT GROWING
In the Great Southwest.

The opportunities for successful fruit growing in Missouri, Kansas, Indian Territory, Oklahoma and Texas are just beginning to be recognized.

In Missouri, fruit growing is profitable in all parts of the state. From a commercial standpoint, there is no section better than the Missouri River Valley. The grand Loess hills of Missouri, along the M. K. & T. Ry., produce apples not equaled by any other locality.

Kansas fruit has a national reputation and southeastern Kansas annually produces thousands of dollars in all sorts of fruit and small berries. Indian Territory and Eastern Oklahoma received special recognition at the World's Fair at St. Louis in 1904, the Winesaps and Jonathans receiving awards in competition with the best fruit sections of the world.

Texas contains a vast area of land, especially adapted to fruit and vegetable culture, an industry which is being rapidly developed. The small fruit and truck farming industry of Eastern Texas especially has developed very rapidly in the last few years, and with the organization of Truck Growers' Associations returns have been something phenomenal.

It will pay you to investigate conditions for fruit growing and truck farming along the line of the M. K. & T. Ry. We shall be pleased to place in your hands copies of our booklets, "Missouri as an Apple State," "Truck Farming," and "The Coming Country," all of which you will find a fund of information of particular value.

Write for the books, they are free.

Address, GEORGE MORTON,
Gen. Pass. and Ticket Agent,
Box 909N ST. LOUIS, MO.

THE MK AND T MISSOURI, KANSAS & TEXAS RY.

Good Fruit in Calhoun County, Ill.

F. I. Bizaillion, Hardin, Ill., president of the Calhoun Fruit-Growers' Association, writes that while Calhoun County as a whole will have only about 35 per cent of a full crop of apples, in the immediate vicinity of Hardin the crop will amount to about 70 per cent of full crop. Within about four miles of Hardin there will be perhaps 20,000 to 25,000 barrels of apples for shipment. Quality is fair to very good, especially where orchards were sprayed. Varieties are Jonathan, Grimes, Rome Beauty, Willow Twig, Ben Davis, Minkler, Mammoth Black Twig, Janet, etc. Mr. Bizaillion writes that buyers will be be welcomed, and good fruit will be furnished.

Great Value of Pecan Trees.

In the new industry of planting pecan groves there is no tree planting their equal for permanent income on so small an outlay that is of such value. A grove of the choicest varieties of the thin shell pecans planted by the equilateral triangle method, with the trees 20x20 and 125 to the acre will, under cultivation, easily eary 20 per cent on an intrinsic valuation of one thousand dollars per acre. Not only that, but such a grove advances the value of every other acre of a farm on which such a grove is planted.

A favorite nut wherever known, a long keeper, there never will be an overplus, as consumption increases faster than the supply. Soon we will have one hundred millions of people in the United States, all consumers, besides which we have the world for our market, as the nuts are grown only upon this continent, and we now import $30,000,000 worth of other nuts.

Close planting, heading in of the trees when two or three years old, which opens up the center, the outer limbs turn inward and grow vertically instead of laterally, as is usual. This also dwarfs the trees, which do not grow very tall, and the fruit can be gathered with a long cane pole.

Many advantages come from close planting. Because of the nearness of the trees the pollen is profusely distributed by the air currents, resulting in heavier crops than can be obtained where trees are more widely separated. No other trees, unless it be the olive, lives to so great an age as the pecan. The rings upon the stump of a tree cut down (because it had been struck by lightning) in this state were in number over six hundred. The stump of another has been found here measuring nine feet in diameter, probably over 1,000 years old. No better patrimony can parents leave their children and children's children than a large pecan grove, the cultivation of crops upon the same ground cultivating the trees also.

While the planting of the nuts is the cheapest way of starting a grove, the trees coming into bearing when six years old, there is much gain in time by planting the grafted trees, as those which are grown upon three to five year old roots will begin to bear when they are three years old. As the demand for the nuts is so great, the difference in cost will soon be made up.

A grove of ten acres will contain 1,250 trees. If planted with the nuts the cost will be $30.00; if trees are planted, the cost will be much more. When the trees earn only one dollar a tree it pays handsomely if the cost had been ten times greater.

The abundance of the wild growth of pecan trees in Missouri, Illinois, Oklahoma, Indian Territory and Arkansas is sufficient evidence that the choicest varieties can be grown at great profit, by which every landonwer can add materially to his income at small cost.

HERBERT POST.

Fort Worth, Texas.

We supply everything in the nursery line. Our prices are way down. Price List Free.

Augustine & Co., Nursery

Normal, Illinois.

Asthma

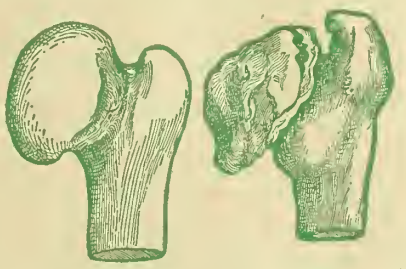
CURED TO STAY CURED.

Attacks stopped permanently. Cause removed. Breathing organs and nervous systems restored. Symptoms never return. No medicine needed afterwards. 21 years of success treating Asthma and Hay Fever. 58,000 patients. Book 35F Free. Very interesting.
Write **P. Harold Hayes, Buffalo, N. Y.**

I Cure Rheumatism

50,000 Boxes Given FREE to Prove It.

I am curing thousands who had given up all hope. I am bringing joy and happiness into hundreds of homes. If you suffer from rheumatism, sciatica, lame back or gout, don't fail to send me your address today and I will send you a free box by return mail.



Thigh bone in a perfectly healthy condition. Thigh bone from advanced stage of Rheumatoid arthritis, showing Rheumatic Poison accumulations.

It matters not how hopeless and helpless you may be; it matters not what doctors have said or what remedies have failed to cure you; it matters not whether you have faith, my marvelous discovery cures. I will send to every sufferer a box of my marvelous discovery absolutely free. I have no C. O. D. or deposit scheme, nothing but a genuine free offer made in good faith. Write me today. My address is John A. Smith, 1212 Gloria Bldg., Milwaukee, Wis., and I personally assure everyone who writes me, be they rich or poor, a prompt and courteous answer and a box of my marvelous discovery to convince you that I have truly discovered Nature's secret of curing rheumatism in all its forms.

Ginseng is the greatest money making plant on earth. Any painstaking person can grow it. A few square rods will yield a handsome income. We have in our gardens only the best selected stock of pure American Ginseng. If interested, send 4c in stamps to cover postage for our 25c booklet, "All About Ginseng." Seeds and roots for sale. **NATIONAL GINSENG GARDENS, D. B. Warren, Mgr., Osceola, Mo.**

CASH

For your farm, ranch, home, or business, no matter what it is worth, or in what town, state or territory it is located. Our facilities are such that we can sell it, and sell it quickly.

Many years of experience in the real estate business, together with our extensive advertising in all parts of the country, enables us to quickly furnish cash buyers. Besides, we have special representatives throughout the country and in many of the larger cities who are at all times working in connection with us. Through our special facilities, combined with our thorough system of advertising, we get quick results, and in order to meet the heavy demand upon us by people who want to buy we must have more property listed with us at this time.

DO YOU WANT A QUICK SALE FOR CASH?

Then list your property with us at once. It matters not what kind of property you have, whether large or small, what it is worth or where located—if you want it sold quickly, write us, giving a brief description of what you have for sale, with your lowest cash price. Upon receipt of your letter we will immediately write you, telling you how and why we can quickly sell your property, together with our terms for selling it. Do not wait but write today.

TO YOU WHO WANT TO BUY

If you want to buy a farm, ranch, home, business, or property of any kind, anywhere, tell us what you want and where you want it. We can satisfactorily fill your requirements, do it promptly, and save you time and money. Furthermore, should you buy a property through us, and at any time within one year you find that it is not just what you want, we will re-sell it for you and not charge you one cent for our services. Write us your wants today.

N. B. JOHNSON & CO. 520 BANK OF COMMERCE BLDG. KANSAS CITY, MO.

FRUIT FARMS AND FRUIT LAND FOR SALE

This department is for the benefit of Fruit-Grower readers who wish to buy, sell or lease farm lands. All advertisements of this nature will be inserted for a charge of 2 cents per word, each initial and number to count as a word. No display type will be used in ads which are accepted at this reduced rate, and all charges must be paid in advance. The rate of 2 cents per word is for each insertion. Count the words when sending your advertisement, and the cost can be easily ascertained.

THE FRUIT GROWER CO., St. Joseph, Mo.

FOR SALE CHEAP—A Colorado orchard containing 35 acres, quarter of a mile from station. Twenty acres now in bearing—700 apple trees, 700 peach trees, few pears, fine varieties—in good condition, seven years old. Fifteen acres raw land. Good water right for the entire place; all for $4,000, easy terms. Write or call on H. G. Fletcher, Grand Junction, Colo.

HOMESEEKERS, I have traveled over Missouri, Kansas, Oklahoma, Indian Territory, Texas and located in N. W. Arkansas, adjoining Indian Territory; this beats them all for health, water, fruit, grain; for prices and particulars, inclose stamp. J. T. OSWALT, Gravette, Arkansas.

CUMBERLAND PLATEAU—Finest pear region. For Sale: 40 Kieffer trees, heavily loaded; young trees, 38; Sudduth, Le Conte, Garber. Ten-room house; near church, school, store. T. S. GILLIS, Nat, Alabama.

FOR SALE—One of the finest sites for a large orchard in Northwest Arkansas. North slope; same soil and latitude as the famous Benton County, Ark., apple belt; 190 acres in tract; 120 fine for orchard; 140 fenced; 110 in cultivation; balance timber; timber enough to pay for place. Some alfalfa land; finely watered by springs and river. Beautiful building site. Good small house and other buildings. Would make a good stock ranch. One mile from R. R. station; 10 miles from Eureka Springs. Very healthy; $20.00 per acre. J. A. WALKER, owner, Grandview, Arkansas.

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THE UNDERSIGNED WISHES TO SELL Two hundred and seventy-four acres of slightly rolling, well drained land, first class fruit and truck farm, one mile from station; a nice village of three hundred inhabitants, with three churches, Baptist, Methodist and Christian; one good school, with three teachers—a graded school. The plantation has four rent houses and main building, with six rooms in good order and good out-buildings; four wells of good, clear water and three tanks, one covering one acre, well stocked with fish; fifteen acres in orchard, mostly young, all in bearing—apples, pears, ever-bearing mulberries, figs and the best varieties of peaches, all in cultivation, but twelve acres in Bermuda pasture and fifteen acres in timber, all well fenced and cross fenced; every thing completed ready to raise truck, fruit, cotton and corn. We have a truck growers' association of one hundred members in flourishing condition. Will ship twenty-five car loads this season, our second year. This is in the noted fruit and truck growing section of East Texas. Will sell at bed rock prices, $7,000; $4,000 down and one or two years on balance. Can borrow money as cheap here as any place. Good tract to cut up in small farms. Must sell all together. Owner has too much other business to attend to same.

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Still leads; every claim sustained. Write for its history. Agents wanted.
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Salt Rheum, Tetter, Piles, or any skin disease. This cure is permanent. We will send you a 25c box free. Send 10c to pay postage and packing. **Empire Remedy Co., 419 Kansas ave., Topeka, Kas.**

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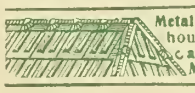

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We can fill your wants in Strawberry, Raspberry and Blackberry Plants; Grapes, Currants, Gooseberries, Trees, etc., for Fall or Spring delivery. Write us your wants and we will endeavor to please you.

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If you want to visit Oklahoma, New Mexico, Arizona, Texas or any of the other sections of the Southwest in which fruit-growing is becoming such an important industry, investigate the low rate made by the

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ST. JOSEPH, MICHIGAN

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SACRAMENTO VALLEY, CALIFORNIA

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At Denver, Colorado.

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LOUISVILLE, KY.

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If you care to get up a club for The Fruit-Grower among your neighbors, write at once for our terms to agents. After January, 1906, the subscription rate of The Fruit-Grower will be a dollar a year, and clubs may be more easily secured while the present low rate exists. If you are interested, write at once to

SUBSCRIPTION DEPARTMENT, Fruit-Grower Company
ST. JOSEPH, MISSOURI.

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An early yellow freestone, ripening a week before Crawford's Early. Trees from the originator have seal attached. Prices free.

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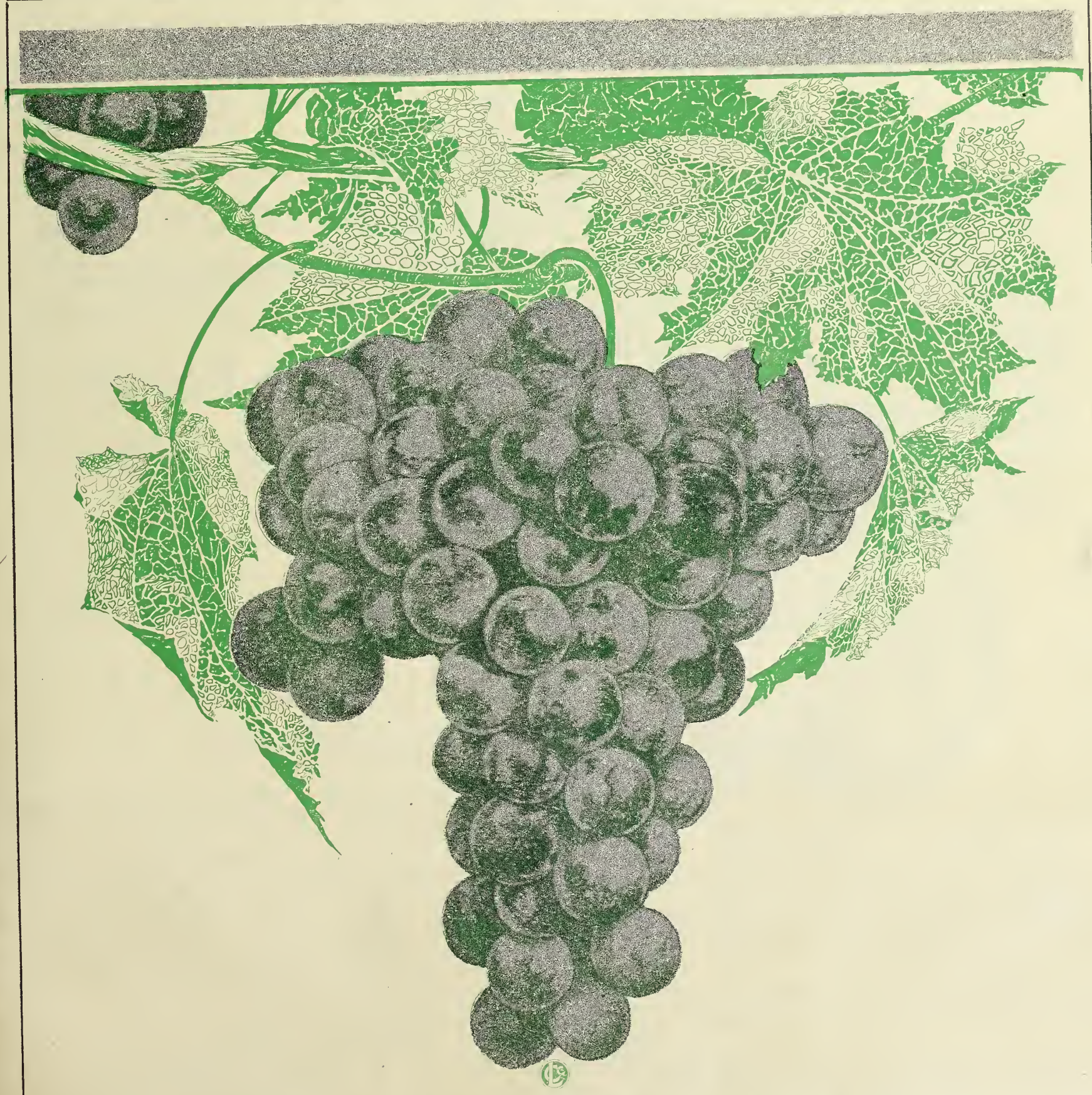
Volume Sixteen AUGUST, 1905 *Number Eight*



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IRRIGON is 179 miles east of Portland, Oregon, 160 miles west of Baker City, Oregon, and 220 miles southwest of Spokane, Wash.

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IRRIGON has more days of sunshine than any other point in the Northwest.

IRRIGON'S soil is ideal for fruit, vine and vegetable.

IRRIGON has the best market and shipping facilities of any town in Oregon, Washington or Idaho.

IRRIGON is able to ship strawberries, potatoes, melons, peaches and cherries fully two weeks ahead of any other section in the Northwest.

IRRIGON is the center of the irrigated lands of the Oregon Land & Water Company, embracing about 40,000 acres, and has one of the best irrigating systems in the West.

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"THE IRRIGON IRRIGATOR," the best Weekly Irrigation Journal published in the U. S.; $1.50 per year; 10 weeks' trial, 25 cents. The Irrigator tells from week to week all about the wonderful progress being made at Irrigon. Address THE IRRIGATOR, Irrigon, Oregon. Sample copy free if you mention Western Fruit-Grower.

Oregon Land & Water Co.

F. B. Holbrook, Superintendent

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With very little labor and at trifling expense, you can make a wonderful improvement in their appearance.

The feathers will fairly glisten, while the combs, legs and toes will look clean enough to eat.

All you need is a tub of lukewarm water, a fairly stiff brush and a cake of Ivory Soap

At the principal poultry shows, special prizes are given to the owners of fowls which have been washed with Ivory Soap.

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NURSERYMEN
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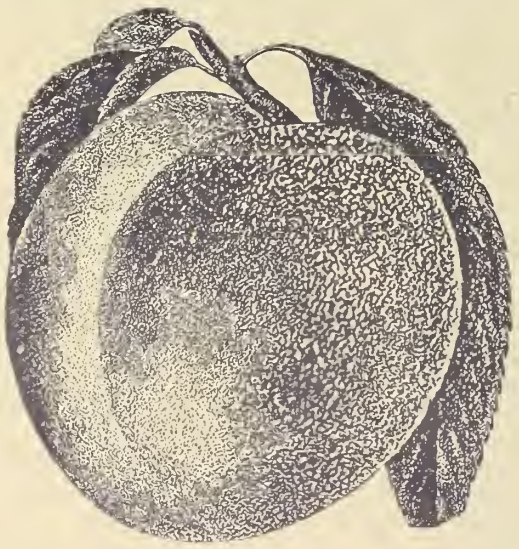

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IS A GOOD old adage. By preparing your copy early and having the printing done before the rush comes you will save a great deal of annoyance to yourself and have your catalogs ready for mailing on time. We want your business and are fully equipped with all the latest machinery to do first-class work. Also have a large line of fruit cuts to illustrate your catalogs. These will cost you nothing for the use if we print your catalog. Write us for estimate and information. DO IT NOW.

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Books descriptive of these resorts, with rates for railroad tickets and board, mailed free to those interested.

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G. L. COBB,

Southwestern Passenger Agent,

907 Main St., Kansas City, Mo.

The Western Fruit-Grower

An Illustrated Monthly Magazine For Progressive American Farmers.

Volume Sixteen | ST. JOSEPH, MO., AUGUST, 1905. | Number Eight

RESIDENCES AND LAWN OF H. M. SIMPSON AND SON, HARRY SIMPSON, VINCENNES, IND.

A Visit to Vincennes, Indiana

A representative of The Fruit-Grower recently spent a day with the nurserymen at Vincennes, Ind. Here are located the Knox Nurseries, H. M. Simpson & Sons, proprietors, and the Vincennes Nurseries, W. C. Reed, proprietor. Vincennes is a quaint old town, rich in historic surroundings. Here is still standing the old government house, used in the early days, and once occupied by William Henry Harrison; this had an underground passage down to the river, so that in days of siege by Indians, the supply of water could not be cut off. The soil of the surrounding country is rich and productive, and the people are progressive.

Mr. Reed took our representative in charge for the morning and showed us over his grounds. The Vincennes Nurseries grow a full line of nursery stock of all kinds, and have built up a very extensive business. The accompanying illustration shows the packing shed of this nursery, a sidetrack from the main line of the B. & O. Southwestern railway giving splendid shipping facilities. The season at Vincennes had been very rainy, and Mr. Reed explained that it had been a hard matter to keep the cultivators going, but everything was found in good condition. Mr. Reed, it may be said here, had devoted much time to arranging for the meeting of nurserymen at West Baden Springs, and the success of the meeting was due partly to his efforts in that direction.

Mr. Reed has carried an advertisement in The Fruit-Grower for many years, and has a great many customers among our readers. In addition to growing a full line of nursery stock of all kinds, he has a small acreage of strawberries for fruit, and reports having had a fairly good season for this crop.

After visiting part of the planting of the Vincennes Nurseries, we visited Knox Nurseries, which were established at Vincennes in 1851, and has a good reputation which has been built up through the years. The active management of the business now is in the hands of the younger members of the family, Messrs. Harry and Robert A. Simpson. While this firm grows a full line of stock, for years a specialty has been made of cherry trees, and the one-year cherry trees grown by this firm have been admired by all who have ever seen them. In one season trees are brought up to a good size, with trunks which appear to have been varnished, and with foliage healthy and vigorous. Among nurserymen the one-year cherry trees of this firm are recognized as of extra fine quality, and a large business in this line has been built up.

In addition to the nursery business, Messrs. Simpson have large orchards, the largest being located just across the line in Illinois. At this orchard is located one of the finest spraying outfits in the country, which has been used as a model by many other growers. The firm is devoting considerable attention to top-working trees, using scions and buds from trees of known character, and will have some interesting developments on this subject to report later.

The accompanying illustration shows a portion of the lawn and the homes of the elder Simpson and Harry Simpson. R. A. Simpson is now completing a home on the grounds, but it is not shown in the picture. The members of the firm report a good business with Fruit-Grower readers, for the advertisement of Knox Nurseries has appeared in these columns almost from the first issue of the paper.

The Fruit-Grower representative regrets that lack of time prevented a closer inspection of these two nurseries and the orchards belonging to the proprietors. We regret, too, that some photographs of the growing nursery stock were spoiled, so that we are unable to present the illustrations in connection with this article.

State Horticultural Meetings

Nebraska's Summer Meeting.

The summer meeting of the Nebraska State Horticultural Society was held at York, July 19th and 20th. The attendance was not as large as had been hoped for but the meeting was enjoyed very much by those who did come and a good many ideas of interest were brought out by those having papers on various subjects pertaining to horticulture.

The meeting was called to order by Prof. G. S. Christy, of Johnson, and after an invocation was offered for the prosperity of the meeting, Mayor Sovereign, of York, extended a welcome and the keys of the city to the visitors. Prof. Christy responded to the kindly welcome. Geo. F. Corcoran, President of the Commercial Club, spoke in behalf of the business men of the city.

The first paper "The Need of Horticultural Education in Agricultural Schools," was read by Mr. Val Keyser of Lincoln. Mr. Keyser made a strong plea for united effort in bringing about the extension of horticultural education. The morning session was taken up by an informal discussion of the paper.

The afternoon session was fully occupied by the reading of papers on "The Flower Garden," by C. H. Green of Fremont; "Present Outlook for Horticulture," by C. H. Harrison of York, dean of Nebraska horticulturists, and "Small Fruits," by President Christy. Each of the subjects were ably handled and many ideas of interest and worth were presented.

At the evening session the members were entertained by a musical program under the direction of Prof. Parks of York, which was greatly enjoyed, the entertainers having to respond to several encores. Hon. E. von Forell of Aurora made a strong plea for horticulaural education in the public schools, giving some striking illustrations of answers to examination questions asked of applicants for teachers' ctrtificates by the state school board.

J. H. Hadkinson of Omaha presented a very interesting paper on "Ornamental Decoration of Home Grounds," illustrated by sketches of plans for laying out walks and drives and planting of ornamental shrubs.

Thursday morning's session was taken up by C. H. Scott, superintendent of the government forest reservation at Halsey, Neb., detailing some of the work the government is doing in planting trees on the sandhills of Western Nebraska; Prof. Emerson of the State University gave a talk on "Ornamental Planting of School Grounds," illustrating his talk by designs.

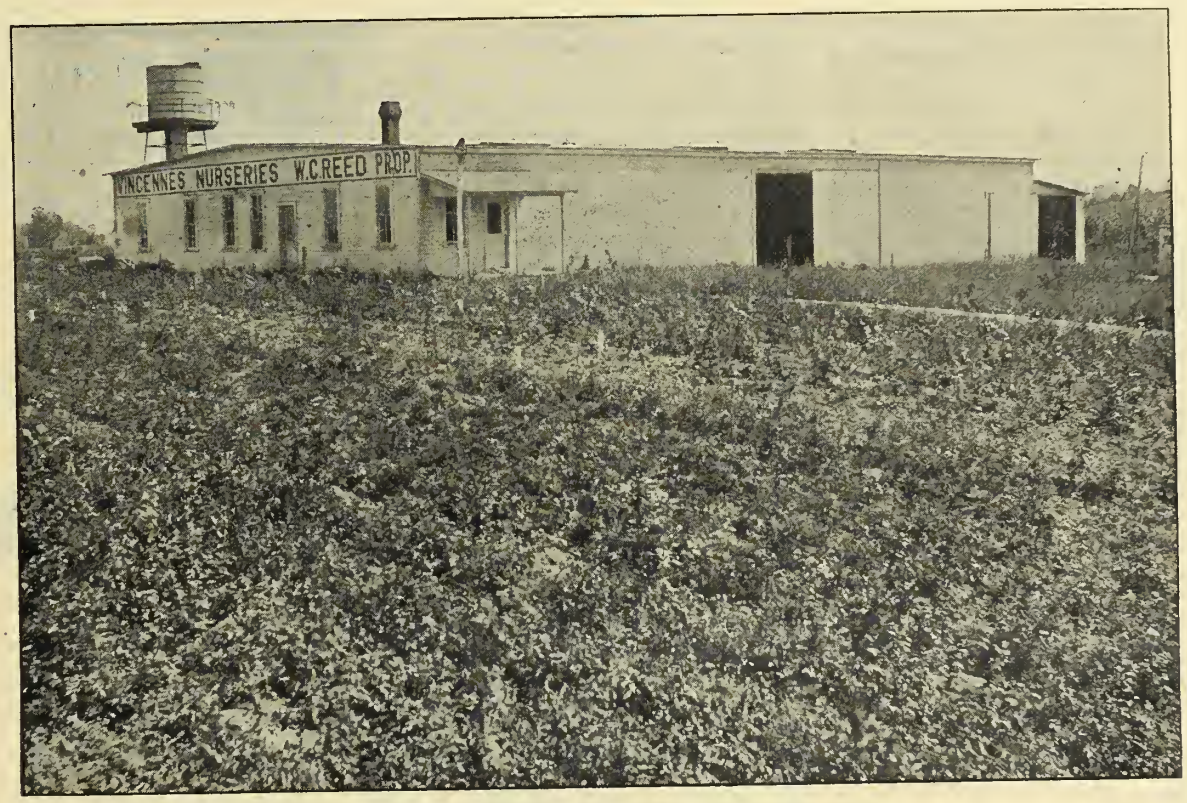
The balance of the morning session was taken up by routine work of the society.

After dinner the visitors were treated to a drive about the city, after which the most of them departed for home.

Much credit for the success of the meeting is due to Mr. H. S. Harrison of York, who devoted his whole time to looking after the welfare and entertainment of the visitors.

A movement was started at this meeting to make arrangements for the establishment of a permanent office for a secretary of the society, to be located at some central point, so that the secretary could devote his whole time to the business of advancing the interests of the society. Pres. Christy appointed a committee to arrange the details of the movement and report at the regular winter meeting.

One of the most interesting places visited by the members of the society was the experimental grounds of Mr. C. H. Harrison. Mr. Harrison devotes a large part of his time to the propagation of new varieties of flowers and ornamental shrubs and trees. The state society set apart a portion of its funds to assist Mr. Harrison in the work, which is of great benefit to those interested in the growing of nursery trees. Mr. Harrison has over 200 varieties of paeonies on the grounds, besides a large number of other plants of interest. A visit to these grounds is well worth the time and cost of any one who is interested in this work. C. W.



PACKING HOUSE OF VINCENNES NURSERIES—ROSE GARDEN IN FOREGROUND.

To Subscribers—

We desire to impress upon all subscribers the fact that after January 1st, 1906, the subscription price of The Fruit-Grower will be advanced to one dollar a year. Quite a number of readers are now in arrears, and it will be a good investment to pay back subscription and several years in advance at the present rate of 50c a year. You may pay ahead from **one to four years** at this rate, but not more. May we not hear from you during August?

THE FRUIT-GROWER CO., ST. JOSEPH, MO.

To Advertisers—

The September number of The Fruit-Grower will be the "Northwest Edition," and a circulation of fifty thousand copies is guaranteed. There will be no advance in advertising rate. At $2.80 per inch space in The Fruit-Grower is the cheapest possible method of reaching over forty thousand of the best farm homes in America. The editor of The Fruit-Grower is now on a tour of the Northwest and in the September issue will have a series of illustrated articles on the irrigation interests of that section. Advertising copy should reach us by August 15th.

THE FRUIT-GROWER CO., ST. JOSEPH, MO.

Semi-Centennial Meeting of Illinois Horticultural Society.

Secretary Bryant of the above named society sends us the following

announcement concerning the next meeting of that organization:

"The next meeting of the Illinois State Horticultural Society, to be held at Champaign, Dec. 12 to 15, 1905, will be the fiftieth or semi-centennial and preparations are in progress to make this a notable event in its history. It was early decided to make history and biography and the development and progress of different lines of horticultural work important in the program, and at a recent meeting of the executive board the several topics were finally decided on, and the history of the society, from its formation up to the present time, and the biography of its pioneer members, the history and development of fruit growing, of ornamental horticulture, vegetable gardening, marketing, transportation and utilization of fruits and the combatting of insects and fungus pests will all be treated by persons who are especially fitted for the subjects assigned them.

"Efforts will be made to secure the attendance of as many of the older members of the society as possible, and it is proposed to have a special 'pioneer' badge for them, and to devote some period during the meeting to reminiscences. An enjoyable feature will be the banquet, to which one evening will be devoted.

"The secretary will be pleased to hear from such of the older members as may be living in other states or who have not recently been connected with the society. The co-opertion of all persons who have at any time been interested in the horticultural work of the state is invited, and kindred societies in other states are requested to send delegates, and it is hoped that neighboring states especially will send large delegations."

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Southern Nurserymen's Meeting.

The Fruit-Grower has just received a copy of the program of the seventh annual meeting of the Southern Nurserymen's Association which will be held at Norfolk, Va., August 16th and 17th. The meeting will be called to order at the Monticello Hotel. Every nurserymen who is a member of this organization should make it a point to be in attendance and those nurserymen who are not members at this time and who are eligible for membership should make it a point to affiliate at once. The annual dues amount to only $2.00 per year. Remittance should be sent direct to Chas. T. Smith, Concord, Ga.

An excellant program has been arranged, and a very enjoyable meeting is assured. Mr. Orlando Harrison, of Berlin, Maryland, has arranged for a side trip which will include the Harrison Nurseries, a visit to Ocean City, and other points of interest in Maryland.

The following is a summary of the programme:

"Legislation," by N. W. Hale, Knoxville, Tenn.

"Co-operation," by Orlando Harrison, Berlin, Md.

"Relation between Nurserymen and Fruit Grower," by Prof. W. M. Scott, Washington, D. C.

"Stop-Back," by W. T. Hood, Richmond, Va.

"June Bugs," by J. C. Hale, Winchester, Tenn.

"Transportation," by J. C. Miller, Rome, Ga.

"San Jose Ssale," by R. I. Smith, State Entomologist of Georgia.

"Fumigation," by J. P. Phillips, State Entomologist of Virginia.

Other subjects will be discussed by J. Van Lindley, Pomona, N. C.; W. F. Heikes of Huntsville, Ala., and other leading Southern Nurserymen.

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Providing a Water Supply.

An experience in apple growing for the past eighteen years in Central Missouri teaches me that a supply of good water is one of the most serious problems I have had to deal with. As the hill land is most suitable for apple trees, the orchard is necessarily far distant from the lower level of living springs.

Ponds and cisterns are the common supply, and they are very poorly adapted for long spells of hot and dry weather. They serve fairly well until about mid-summer. Perhaps pond water as a supply for stock has done more to keep the homeseeker away from certain sections of country than all other reasons combined.

Necessity has prompted me to seek a remedy, and thinking that my experiment may be of use to the large number of readers of The Fruit-Grower in the Ozark hills, I will give you an outline of my work. For want of a better name, I will call the work a "horizontal well" or a "tunnel well."

The dimensions are 8 feet wide and 8 feet high and 50 feet long. Two of them side by side—walled and arched over with concrete. Iron frames just one-fourth of a circle, that is 8 feet in diameter, support heavy sheet iron 3 feet by 6½ feet and curved to fit the frames for the support of the concrete arch work. The perpendicular walls are 8 inches thick and the arches 4 inches. By making two horizontal walls side by side permits the excavation to be done by team work.

I find no difficulty in selecting sites that will furnish water-tight ground for a depth of ten feet.

While I have a galvanized corrugated iron barn roof 48x52 as a fair supply, I plan to add the water shed off adjacent ground during the cold spring rains to insure filling the well. We shall still use the ordinary pond for all except late summer.

A surface of two feet of earth over the highest part of the arches is necessary to exclude heat and frost, and gardening is the use I shall put the ground to and so grade it as to add to the water supply. In a word, my purpose is to store good cold rain water for late summer use. J. G.

Jefferson County, Iowa.

⚜ ⚜ ⚜

$15 to St. Paul and Minneapolis and Return via

Chicago Great Western Railway.

Tickets on sale daily to September 30th. Final return limit October 31st. Also equally low rates to Minnesota, North Dakota, Colorado, Utah and Wyoming points. For further information apply to M. F. Montgomery, C. P. T. A., 414 Felix st., St. Joseph, Mo.

Fruit Lands

The finest orange and citrus fruit lands in the world at $20.00 per acre. Terms reasonable. No frost; no irrigation; good market. Address for printed matter—

A. C. CHESEBRO

Sec'y and Treas. FOND DU LAC, WIS.

Fruit-Growers, Gardeners, Canners

We are in position to assist you in marketing your fruits, vegetables, dressed poultry, and canned goods.

We do not deal in canning machinery of any kind, but *sell* the products of canning factories now in operation, or will assist in establishing canneries in new localities, and will market the product to our large trade throughout the country.

If you are interested in securing better prices for your produce, write us for full particulars.

Sherman-Heath Canners Co.

414-417 Commercial Building, St. Louis, Missouri

Western Selling Agents for The R. I. Sherman Mfg. Company, and E. T. Cowdrey Company, Growers, Canners, Manufacturers and Importers, Boston, Massachusetts.

Sixty Thousand Apple Trees

Fifty varieties one-year buds, two and three-year grafts, Peach, Cherry, Pear and Plum Trees; a good assortment of varieties. Shade Trees, Ornamental Shrubs, Roses and Small Fruit Plants, Gladoli Bulbs, Cowee's World's Fair strain. Write for special prices.

L. F. DINTELMANN, BELLEVILLE, ILLINOIS.

MAKES FARMING 100% PROFITABLE

WHY waste 25% of your time fighting weeds? That 25% comes off all your year s farming profit at the end of the season. If you sow unclean seed you get just about 25% weed harvest. All of the leading Agricultural Colleges are preaching "Clean Seed," and all of the leading up-to-date farmers are practicing what these colleges preach. It is because clean, graded grain and seed means better crops, better prices for products and a higher standard of farming. The first cost of a Chatham Fanning Mill is not high, yet it pays for itself over and over again every year.

The CHATHAM FANNING MILL

On Exhibition at Union Stock Yards Chicago

combines the usefulness of many machines in one. The man who buys one gets more for his money than he can get in any other machine for farm use. Space in an advertisement does not permit us to give the different things that you can do with a Chatham Fanning Mill. It cleans easily and perfectly all kinds of grain and seed.

No other machine on the market will come anywhere near touching the work of the Chatham. For instance, we guarantee that it will clean oats out of wheat, barley out of wheat, buckhorn plantain out of clover, and all wild and weed seeds out of all kinds of grain. Each machine is regularly equipped with 17 screens and riddles, which with our instructions enables you to use them in a great many combinations.

DON'T TAKE A 33⅓ PER CENT LOSS ON YOUR CORN CROP

It is an actual fact, shown up by statistics, that planting uneven or ungraded corn reduces the yield per acre 33⅓ per cent. Yet, it is surprising to know that many farmers continue to plant ungraded seed. We have a new **Corn Grader** that was tested by the Iowa State Agricultural College in a most rigid manner, and under this test graded corn 98 per cent perfect. This Corn Grader attachment can be fitted to all of our new machines, or is sold as a separate machine complete in itself. Don't fool away 33⅓ per cent on your corn crop. It is high-priced carelessness. Our new **Oats-from-Wheat Riddle** is composed of 4500 different parts, and makes an absolutely perfect separation, solving the long-vexed question of growing succotash. You can now sow oats with wheat with a dead certainty of being able to make a perfect separation with one of these riddles on the Chatham Fanning Mill. We guarantee every Chatham for five years, and they are such good machines and do such splendid work that we have no hesitancy in selling them on time if time is desired.

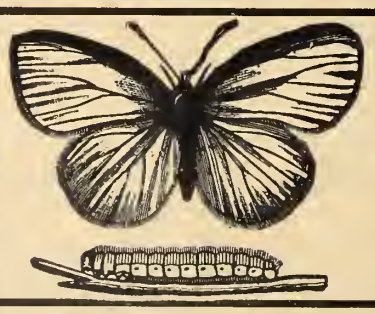
A FREE INFORMATION BUREAU—We have a special department in charge of experts for furnishing reliable and practical information on the handling of grain and seed. This bureau is for the benefit of our customers. You can consult it freely without a penny's cost. Any question asked will be promptly and thoroughly answered by our experts.

We issue a valuable book, "How to Make Dollars Out of Wind," which gives full information regarding the Chatham Fanning Mill and its uses. Get a free copy.

SPECIAL SHIPPING FACILITIES—We have 24 warehouses located in 24 of the leading shipping point cities throughout the grain and corn states, where we carry constantly a complete stock of mills, and can give immediate shipment.

THE MANSON CAMPBELL CO. Ltd. Mfrs. CHATHAM FANNING MILLS, INCUBATORS and BROODERS 334 **Wesson Ave., DETROIT, MICH.**

This paper knows the Manson Campbell Co. to be a reliable concern, and that they will do exactly as they represent.



Hammond's Slug Shot for Cabbage Worms

DRAKE'S GARDEN. East Brookfield, Mass., Jan. 14, 1905.

We have used SLUG SHOT and always found it very useful. Our potato crop yielded 200 bushels to the acre. SLUG SHOT for Cabbage Worms is the best defense in the world.

Very truly, F. A. DRAKE.

CABBAGE WORMS—The Cabbage Worm has spread wherever cabbage is grown. Whether early cabbage or late cabbage, in garden or field, it perforates the plant, and is of all worms one of the most disgusting, to find hidden away in the folds of the leaf.

If you want Cabbage Free from Worms, Use Hammond's Slug Shot.

HOW TO DESTROY CABBAGE WORMS—Slug Shot can be used lightly or heavily and the cabbage suffers no harm. The cabbage forms its head by the interior growth; it throws off its earlier and outside leaves, and no dust can enfold within its head. Apply Slug Shot with a duster, sieve it over the plants or full grown cabbages. The powder is very fine and goes a long way in field or garden. Sold by seed dealers and merchants. Send for pamphlet to

B. HAMMOND, FISHKILL ON HUDSON, N. Y.

DON'T BUY A GASOLINE ENGINE FOR SPRAYING

or any other purpose, until you investigate **"The Master Workman"** a two-cylinder gasoline engine superior to all one-cylinder engines; revolutionizing gas power. Costs Less to Buy and Less to Run. Quickly, easily started. No vibration. Can be mounted on any wagon at small cost—portable, stationary or traction. Mention this paper. Send for Catalogue. THE TEMPLE PUMP CO., Mfrs., Meagher & 15th Sts., Chicago. THIS IS OUR 61ST YEAR.

Iowa Nurserymen and Seedsmen.

A representative of The Fruit-Grower had the pleasure of making a trip through Iowa and meeting a number of the prominent seedsmen and nurserymen of that state.

The first point visited was Hamburg, Iowa. There we had a pleasant chat with Mr. J. S. Miller, a seedsman. Mr. Miller has worked up a very lucrative business in farm seeds and reports a very successful season. Prospects for next seoson's business are very good, although it is a trifle early to say much about it yet. He has a large elevator with a capacity of 15,000 bushels of corn and various other seeds, besides enormous other buildings devoted to his business. He can handle 1,500 bushels of seed corn every day in his shipping department and he says that the Iowa seed business is becoming known all over the country.

The next place visited for a short time was the town of Shenandoah. Shenandoah is the headquarters for a large number of seedsmen and nurserymen, and the shipments from that point of seeds and nursery stock to all parts of the United States is an item that enters largely into the business report from that city.

Henry Field, a seedsman, was found in his busy office, surrounded by a number of clerks. Mr. Field has made his name famous to farmers all over the country as a seedsman. It is a liberal education to see the systematic manner in which Mr. Field handles his immense business. He has a large number of warehouses and buildings devoted to the handling of his seeds, and he is contemplating enlarging his already extensive plant. Mr. Field issues a catalog every year, which is a very neat and handsome publication, and in it he talks to the prospective customer in a heart-to-heart manner that brings business.

Ratekin Seed House is another one of the progressive firms of Shenandoah. Their business is growing at all times and extends to nearly every state in the Union. J. W. Ratekin, the manager of the firm, is a gentleman who makes every caller and customer feel that he is a friend. He has the affairs of the house thoroughly in hand and gave the representative a good deal of interesting information relative to the seed corn business.

J. B. Armstrong & Sons were also handling a large business in farm seeds and are among the oldest seedsmen in this section. They have established a reputation for their seeds and are building a business that is phenomenal.

Among the nurserymen located at Shenandoah is the Shenandoah Nursery Co., D. S. Lake, proprietor. They handle stock in wholesale quantities only, and their business is widespread. They not only have large propagating grounds near Shenandoah, but also in Nebraska and Kansas, shipping from all these points to their numerous customers. A tour through their large packing houses gives some idea of the extent of their business. The business management of the firm is in the hands of Mr. Lake's sons, who are enterprising and progressive, keenly alive to everything that makes for the enlarging of their already immense business. They issue a wholesale price list twice a year and a special winter price list that is especially gotten up for neatness and attractiveness.

Mr. E. S. Welch, proprietor of the Mount Arbor Nurseries, is another one of the up-to-date nurserymen. By persistent attention to business and a thorough knowledge of the growing and marketing of nursery stock, he has built up in a few years a business that is second to none. Mr. Welch conducted the representative on an inspection of the numerous packing sheds and buildings and a portion of the propagating grounds. The systematic manner in which everything is arranged for the rapid handling of orders during the busy season testifies to the business ability of this successful nursery firm. Mr. Welch will issue a new price list and catalog this fall that will be better and more complete than anything he has issued before. It will be illustrated with various cuts of scenes in and around their buildings and propagating grounds.

The next stopping place was Clarinda, Iowa. There we had the pleasure of a visit with the Berry Seed Co. We were unfortunate in not being able to meet Mr. Berry personally, as he was out of the city at the time of our visit, but had a very pleasant time with Mr. Affeld, secretary of the company. He conducted the representative through their large warehouses and packing department. This firm handles an immense business every year, and the neat arrangement of the various departments shows that they are capable of handling a large amount of business in a very rapid manner during the busy season. They run quite an extensive printing plant of their own for the publication of circulars, printing of seed packets and various office supplies. The Berry Seed Co. is one of the largest firms of this kind in this section of the country.

The next place visited was Lorimor, where we found Mr. Geo. R. Locherie in his office, looking after the very successful business which he has in hand. With regard to his nursery, Mr. Locherie has been in the nursery business for several years and is preparing to go more extensively into the growing and handling of nursery stocks. We spent a very pleasant afternoon with him, and we feel assured that his business will grow to large proportions in the near future. Mr. Licherie will issue a catalog this year for the first time.

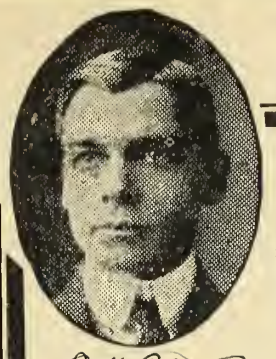
At Des Moines we found a large number of nursery firms doing a splendid business. The first firm we called on was the Des Moines Nursery Co., Mr. James W. Hill, manager. They have a large packing business and their goods go to all parts of the country. Mr. Hill is an enterprising business man, up-to-date in all his ideas, and impresses one with the fact that the business is bound to succeed, if his efforts can make it so. They are preparing to handle a larger amount of business than ever this fall.

Mr. B. F. Bonnewell has been in business for himself only a short time, but says that his business is growing rapidly, and that he expects to enlarge his packing plant very soon to handle an increased business. Mr. Bonnewell will issue a new catalog, the first one that has been sent out by him since engaging in business for himself.

W. E. Chapin, proprietor of the Midland Nursery Co., is one of the pioneer nurserymen of Iowa. He has quite extensive grounds in the suburbs of Des Moines, and makes it a point to produce only pure strains of nursery stock. He showed us a photograph of a pear tree that is still bearing and is over thirty years old, producing good crops every year, and he has nursery stock originating from this tree which has proved very successful through this section of the country. Mr. Chapin entertained the representative very nicely for some time with reminiscences of the nursery business in the early days.

One of the largest seed houses in the United States is the Iowa Seed Co., Mr. C. N. Page, manager. Their office is located in the central por-

I Am the Paint Man



O. L. Chase
St. Louis, Mo.

2 Full Gallons Free to Try—6 Months Time to Pay

I AM the paint man.

I have a new way of manufacturing and selling paints. It's unique—it's better.

Before my plan was invented paint was sold in two ways—either ready-mixed or the ingredients were bought and mixed by the painter.

Ready-mixed paint settles on the shelves, forming a sediment at the bottom of the can.

The mineral in ready-mixed paint, when standing in oil, eats the life out of the oil. The oil is the very life of all paints.

Paint made by the painter cannot be properly made on account of lack of the heavy mixing machine.

My paint is unlike any other paint in the world.

It is ready to use, but not ready-mixed.

My paint is made to order after each order is received, packed in hermetically sealed cans with the very day it is made stamped on each can by my factory inspector.

I ship my pigment—which is white lead, zinc, drier and coloring matter freshly ground, after order is received—in separate cans, and in another can I ship my Oilo, which is pure old process linseed oil, the kind that you used to buy years ago before the paint manufacturers, to cheapen the cost of paint, worked in adulterations.

I sell my paint direct from my factory to user at my very low factory price; you pay no dealer or middleman profits.

I pay the freight on six gallons or over.

My paint is so good that I make this wonderfully fair test offer:

When you receive your shipment of paint, you can use two full gallons—that will cover 600 square feet of wall—two coats.

If, after you have used that much of my paint, you are not perfectly satisfied with it in every detail, you can return the remainder of your order and the two gallons will not cost you one penny.

No other paint manufacturer ever made such a liberal offer.

It is because I manufacture the finest paint, put up in the best way, that I can make this offer.

I go even further.

I sell all of my paint on six months' time, if desired.

This gives you an opportunity to paint your buildings when they need it, and pay for the paint at your convenience.

Back of my paint stands my Eight Year, officially signed, iron-clad Guarantee.

8 YEARS GUARANTEE

This is the longest and most liberal guarantee ever put on a paint.

For further particulars regarding my plan of selling, and complete color card of all colors, send a postal to O. L. Chase, St. Louis, Mo.

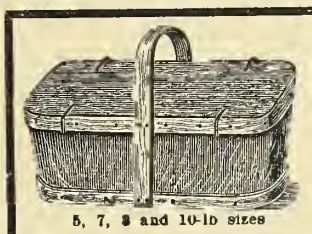
I will send my paint book—the most complete book of its kind ever published—absolutely free. Also my instruction book entitled "This Little Book Tells How To Paint" and copy of my 8 year guarantee.

O. L. Chase *The Paint Man*
403 A Sixth Street
St. Louis, Mo.

APPLE BOXES

The best package for boxing and shipping apples. Manufactured from northern white pine. Much superior to the barrel as an apple package. Car load lots knocked down. Melon crates. Write for prices.

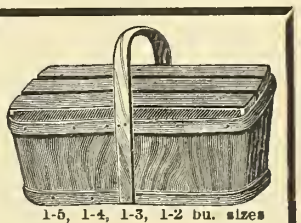
NORTHERN BOX MANUFACTURERS' AGENCY,
Dept. A, 412 Dwight Bldg. Kansas City, Mo.



5, 7, 8 and 10-lb sizes

CLIMAX BASKETS

FOR SHIPPING



1-5, 1-4, 1-3, 1-2 bu. sizes

Grapes, Peaches and Cantelopes

Also Oak Briggs and Elm Stave Baskets
Veneer Tree Protectors

Awarded Gold Medal at Louisiana Purchase Exposition, 1904.
Best and Cheapest in the World—Millions in Use.

WRITE TO

St. Louis Basket and Box Company
Second and Arsenal Streets ST. LOUIS, MO.

Sprague Canning Machinery Company

Sales Office
42 River Street
CHICAGO, ILL.

STARK FRUIT BOOK

44 pages 9 x 12 inches; 22 colored plates showing in natural colors 216 varieties of Fruit, with concise description, including season of ripening of each; 64 half-tone views of Nurseries, Orchards, Packing Houses, etc. **Send 50 cts.** and we will send the book post-paid, and **Rebate Ticket** permitting return of book **by mail** within 60 days and we refund 50 cts. Or, mail within 1 year, Rebate Ticket with $12 order for nursery stock and we credit **$1.00** in part payment on order and you KEEP THE BOOK **free. WE PAY THE FREIGHT.**

WE PAY CASH weekly and want **more** home and traveling salesmen. OUTFIT FREE.—STARK BRO'S, Louisiana, Mo., Atlantic, Iowa, Fayetteville, Ark.

100% on Your Money

The satisfaction, ease, comfort and safety of shaving are increased 100% by an investment in

WILLIAMS' SHAVING SOAP

Sold everywhere. Free trial sample for 2-cent stamp. Write for "The Shavers Guide and How to Dress Correctly."

The J. B. Williams Co., Glastonbury, Conn.

Stop—Think

Do **you know** how much you **lost** last year by not owning a correct stock and wagon scale? You **admit** you **need** one. Why don't you write for **our** catalogue.

"New Idea" Steel Pitless Scale

just out. All **complete**, ready to weigh on except platform plank. No pit. No wall. All steel. New construction. You will like it. **We make all kinds of scales.** Do you know a good agent for us? Do us and him a favor, show him this ad. We want him **Now.**

OSGOOD SCALE COMPANY
Box 140, Binghamton, N. Y.

Fruit Driers,

Evaporators. Prices from **$8.50** up.

You can save all your fruit, berries, sweet corn, etc., and are a first-class kitchen safe for keeping pies, cakes, etc. Address **D. STUTZMAN, Ligonier, Ind.**

Windmills

8 to 20 foot
For prices and descriptions address:
The Leach Windmill Co., Joliet, Ill., U. S. A.

A PLANT OF OVER
3½ TON
OF
Apple Seed
GIVES US THE LARGEST PLANT OF
Apple Seedlings
IN THE WORLD.

Glad to correspond with any wanting healthy, well-grown apple seedlings.

L. R. TAYLOR & SONS
TOPEKA, KAS.

Crops are Sure
Under Irrigation

Land in Snake River Valley, Idaho, with perpetual water right, $10.50 per acre up, on easy terms. Finest fruit land. Government statistics show that Idaho's yield per acre and crop value per acre are twice the average.

North Dakota Wheat Farms and Ranches

$7.00 per acre up, on easy terms.

Railroad fare returned to all land buyers.

Excursion Rates on all Railroads.

Beecher & Beecher
P. O. Box G., Belleville, Kas.

SALESMEN WANTED

For a complete line of high grade nursery stock. Men capable of earning from

$75 to $100 Per Month

and expenses preferred. Also local salesmen in every town where not represented. Permanent Position, Good Inducements, Square Dealing.

THE NATIONAL NURSERIES,
Lawrence, Kan.

NURSERYMEN'S
Fruit and Ornamental **PLATES**

An experience of over 30 years and our unequaled facilities have made our plates leaders. They are used by the leading nurserymen and agents in the United States and Canada. A trial order will convince you of their superiority. Send for catalogue and prices.

M. Brunswick & Co.
ROCHESTER, NEW YORK

LAWN FENCE
Many designs. Cheap as wood. 32 page Catalogue free. Special Prices to Cemeteries and Churches. Address
COILED SPRING FENCE CO.
Box 125 Winchester, Ind.

Let Us Send You
Our Book.
about good wheels and good wagons that will save you a lot of work and make you a lot of money—the
ELECTRIC STEEL WHEELS
—and the—
ELECTRIC HANDY WAGON.
By every test, they are the best. More than one and a quarter millions sold. Spokes mitted to the hub. Can't work loose. A set of our wheels will make your old wagon new. Catalogue free.
ELECTRIC WHEEL CO., Box 217, Quincy, Ills.

ELECTRIC

tion of the city and from this point they handle their large business in several warehouses scattered over the city. One building is devoted entirely to the handling of their advertising matter. They have a large corps of clerks who are engaged in the mailing of circulars, price lists, catalogs, etc., and they reach every section of the country with their advertising matter. Mr. Page is a gentleman thoroughly posted and talks very entertainingly on the seed business. The firm is a large advertiser, not only through the medium of the mails, but also in newspapers and periodicals. It has special departments devoted to birds, fish, etc. The walk through the large retail stores in the city was not only a pleasure but very instructive.

One of the largest nursery firms at Des Moines is the Watrous Nursery Co., of which Mr. C. L. Watrous is proprietor. They have extensive propagating grounds just outside the city, which cover about one hundred acres, in which they grow almost everything that is handled by nursery firms. They take special care to have all nursery stock true to name, and are also interested in propagating special varieties. Mr. Watrous is one of the most prominent nurserymen in the United States and is one of the most energetic and progressive members of the National Association. His son, Mr. E. L. Watrous, has active charge of the office business, and the systematic manner in which they handle their business shows that they are taking care of their immense trade in a manner that is very satisfactory. This firm issues a very neat and attractive catalog of all the varieties which they handle. Their grounds are situated in such a way that they have the benefit of the experience of low and high grounds for the growing of all kinds of nursery stock, and therefore have a thorough knowledge of the best methods of propagating trees and small fruits. The grounds are laid out in walks and drives that are very pleasing to the eye.

J. W. Callison, proprietor of the Grand View Nursery Co., is a very pleasant gentleman to talk with, and the representative spent a very instructive time with him in his office. Mr. Callison has quite extensive propagating grounds, and has built up a large business by careful attetnion to business and a thorough knowledge of the growing of the various varieties, in which he takes special interest.

At Waukee, twenty miles out of Des Moines, we had the pleasure of spending the forenoon with Mr. N. C. Wragg of the J. Wragg & Sons Nursery Co. It is needless to say anything regarding this firm, as they are too well known all over the country to need any introduction from The Fruit-Grower. Mr. John Wragg established this firm a good many years ago, and has made it one of the most substantial and prosperous firms in the western country. He has been instrumental in introducing some special varieties, among which is the Wragg cherry, which is known all over the country for its sturdy growth, great bearing qualities and capabilities for its standing severe winter weather. Mr. N. C. Wragg, a son of the founder of the firm, entertained the representative in a manner that will not be forgotten for some time. He showed us over the large office which they have in Waukee, and also pointed out a location where they expect to build a large office and warehouse next spring. This will be located on a triangular piece of ground between the Rock Island and Chicago & Milwaukee tracks, where they will have the best of facilities for loading cars and handling the immense business of this firm. Their extensive propagating grounds are located just outside of the city, in which they grow everything that pertains to the nursery business. N. C. Wragg is a very genial gentleman, and made the visit of the representative one to be long remembered.

Our next stopping place was at Waterloo. There are no nursery firms located at this point, but we had the pleasure of calling on a large number of manufacturing firms who have headquarters here. Waterloo is a bustling town of 17,000 people, and is filled to overflowing with enterprise and push.

Among the number of firms visited by the representative were Bovee Grinder & Furnace Works, Waterloo Motor Works, William Galloway & Co., farm machines and automobiles, Iowa Separator Co., Kelley & Tanneyhill, Litchfield Mfg. Co., Swift Mfg. Co., Western Harness & Supply Co., Hawkeye Mfg. Co., Tallerday Steel Pipe & Tank Works, Waterloo Threshing Machine Co., J. S. Kemp Co., Waterloo Gas Engine Co. All of these firms have large plants and are doing a splendid business. Most of them are manufacturing articles that are in every day use by the farmers and fruit-growers.

The J. S. Kemp Co., of which Mr. C. O. Lamson is manager, manufactures a manure spreader that has proved a success wherever used. Mr. Lamson informs us that output of their plant is growing every year, and that the demand for improved and labor saving machinery is on the increase.

The Waterloo Gas Engine Co., Mr. Geo. B. Miller manager, presented for our inspection a twelve horse power automobile, two cylinders, which, for neatness of outline and durability cannot be excelled by any other automobile. This machine was built entirely by him and compares favorably with any of the other machines on the market. We witnessed an automobile parade at the time of our visit, in which forty automobiles were in line, and Mr. Miller's machine was among them.

All these firms advertise largely, and are pushing their goods before the public with true American energy.

Our next place to call was on Elmer Reeves of Waverly, Iowa. Mr. Reeves is proprietor of the Waverly Nurseries. He has about one hundred acres of nursery stock, and reports his business as growing every year. It is a great pleasure to visit this nursery. The neatness with which the grounds are kept, and the clean looking blocks of orchard stock are very pleasing to the eye. Mr. Reeves is an advocate of dry mixture spraying. Has used this process for several years, and thinks that there is no way that spraying can be done to better advantage. He had one block of about twenty thousand Northwestern Greenings that he is getting ready for the fall business. The apple trees in this section of the country have to be three or four years old before they are ready for transplanting. He also showed us some fine specimens of top grafting, the point of union being almost imperceptible.

Leaving Waverly, the next point visited was Charles City, where the Sherman Nursery is located. This firm has about four hundred and fifty acres devoted to the growing of nursery stock. A visit to their main office, which is located on the grounds, disclosed a large number of stenographers and clerks employed in handling the immense business of this firm. We drove through a portion of the grounds, and as is usual with all first-class nurserymen, everything was in apple-pie order. They deal largely in greenhouse stock, having a large amount of space under glass, and growing almost exclusively for the St. Paul market. On our visit to the greenhouses we saw an employe coming from one of the houses with an armful of American Beauty buds. They cut on an average of forty-five hundred to five thousand roses a year, for which they have a ready sale at all times, and could supply more if possible to grow them under their present glass surface. They are erecting at the greenhouse a new office, built of stone, which is quarried on their own grounds. Both Mr. Case and Mr. Sherman greeted the representative in a very cordial manner, and said some very nice things about The Western Fruit-Grower.

Mr. C. G. Patten, president of the Charles City Nursery, also has about two hundred acres in nursery stock at this point. Mr. Patten is one of the pioneer nurserymen of Iowa, having been engaged in business for over twenty-five years at this point. Our time being limited, we did not have the pleasure of a visit to his grounds, but had a very pleasant chat with him in the city. Mr. Patten is thinking of changing their business from retail to wholesale entirely. They have worked the wholesale business more or less for the last few years, but are very strongly in favor of dropping the retail end in the near future.

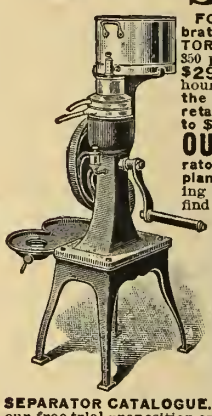
Next we arrived at Osage City, at which place is located the

ALFALFA is now attracting much attention everywhere. Do not forget that Alfalfa needs heavy doses of POTASH to insure successful growth.

We have a book which is full of valuable information to all farmers who are experimenting with Alfalfa, and will gladly mail it free of all cost to any one who will be good enough to write for it.

Address, GERMAN KALI WORKS
New York—93 Nassau Street, or
Chicago—Monadnock Building

$25.00 Cream Separator



FOR $25.00 we sell the celebrated DUNDEE CREAM SEPARATOR, capacity 200 pounds per hour; 350 pounds capacity per hour for $29.00; 500 pounds capacity per hour for $34.00. Guaranteed the equal of Separators that retail everywhere at from $75.00 to $125.00.

OUR OFFER. We will ship you a Separator on our 30 days' free trial plan, with the binding understanding and agreement if you do not find by comparison, test and use that it will skim closer, skim colder milk, skim easier, run lighter and skim one-half more milk than any other Cream Separator made, you can return the Separator to us at our expense and we will immediately return any money you may have paid for freight charges or otherwise. Cut this ad out at once and mail to us, and you will receive by return mail, free, postpaid, our LATEST SPECIAL CREAM SEPARATOR CATALOGUE. You will get our big offer and our free trial proposition and you will receive the most astonishingly liberal Cream Separator offer ever heard of. Address,
SEARS, ROEBUCK & CO., CHICAGO.

The Cate Wagon

An Up-to-Date Wagon for the Up-to-Date Fruit-Grower. Saves Fruit and Time in handling.

BOTTOMLESS FRUIT BAG
as used in California

Saves labor, hard work, can pick twice as much in same time. Write for circulars, etc.

Clark's Cutaway Orchard Harrows.

Repairs for Clark's Tools.

Farmers' Favorite Cider Presses, 4 gal. to 8 bbl.

Allen's Fruit Pickers. Fruit-Growers' Supplies.

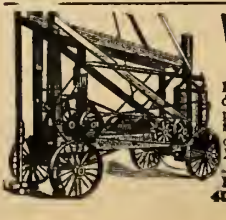
E. G. MENDENHALL
Genl. Agt. for Central and Western States.
P. O. BOX 300, KINMUNDY, ILL.
Refer to The Fruit-Grower by permission.

Great Suit Offer

Cut this notice out and mail to us and if we have no agent in your town we will send you FREE, by return mail, postpaid, a big assortment of cloth samples, fashion figures, cloth tape measure, order blanks, etc., and we will name you prices on men's fine clothing that will be so much lower than you ever heard of that it will surprise you; terms, conditions and privileges that will astonish you; a free trial offer on a suit for your own use that will make you wonder.

WE WANT A GOOD AGENT IN YOUR TOWN.

He can make $1,200.00 to $1,800.00 per year. If you write us before we get an agent there you will get a wonderful offer. As soon as we get an agent in your town he will get a profit on every dollar we sell in his territory. We then turn all our business over to him. That's why our agents make so much money. If you want a suit for yourself, answer quick, before we get an agent there, and you will then get all our great inducements, or if you would like to be our agent tell us all about yourself. Address:
AMERICAN WOOLEN MILLS CO., Chicago.

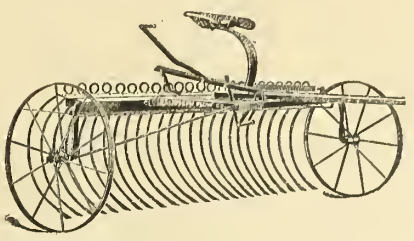


Well Drilling Machinery

Portable and drill any depth by steam or horse power. 48 Different Styles. We challenge competition. Send for Free Illustrated Catalog

KELLY & TANEYHILL CO.
49 Chestnut St., Waterloo, Ia.

Gardner Nursery Co. Upon arriving at the grounds, which are about a mile and a half outside of the city, we were very cordially greeted by Mr. C. E. Gardner, treasurer and manager of this company. He first showed us through their packing shed and the general office building. They employ a number of stenographers and clerks, and these were engaged in sending out the different advertising matter that this firm issues in great quantities. Mr. Gardner told us that he was going to increase their advertising patronage to a large extent this fall. Had a very good word to say for the returns received from advertising in The Fruit-Grower. He also said that he believed The Fruit-Grower was the best paper of its class in the United States. After visiting the packing sheds, a walk was taken to the propagating department. Under a covered space we were shown the various stages of the growth of Colorado spruce, from the time the seed was placed in the ground until it was removed for shipment. They are preparing a fern growing department, a portion of the grounds being set aside in which they have planted several varieties of ferns which are well on the way and show good growth. They have about one hundred acres devoted to nursery stock, and the same can be said of their grounds as has been said of every nurseryman whom we visited, well kept, free from weeds, stock in splendid condition and everything that tends to make the very best quality is done. The grounds immediately around the office are laid out in walks and drives, bordered with the different varieties of ornamental shrubs and trees grown by them, and much care has been given to the landscape effect. This department of the work is handled entirely by Charles F. Gardner, president of the company, and father of Mr. C. E. Gardner. We cannot say too much of the courtesy and cordial manner in which these gentlemen received the representative and the way in which they endeavored to make the time pass pleasantly. C. W.



The cut shown herewith is something new in the way of a low wheel hay rake made by the St. Joseph Plow Co., St. Joseph, Mo., who advertise in another column. A great many advantages are claimed for this machine, and the company will be pleased to send circular and catalogue with description of this and other high grade farm machinery. Write them for particulars.

The Fruit-Grower is the best of ten similiar publications which I receive. —James E. Thompson, Marshfield, Mo.

Ginseng is the greatest money making plant on earth. Any painstaking person can grow it. A few square rods will yield a handsome income. We have in our gardens only the best selected stock of pure American Ginseng. If interested, send 4c in stamps to cover postage for our 25c booklet, "All About Ginseng." Seeds and roots for sale. **NATIONAL GINSENG GARDENS, D. B. Warren, Mgr., Osceola, Mo.**

Uncle Sam Refinery Still Growing

Stock Will be Advanced Again on or Before Sept. 1st

Will Make Net Profits of Over $750 Per Day.

Few people realize what a great enterprise the Uncle Sam refinery really is. Come down to Cherryvale and see for yourself as the hundreds of barrels of crude is manufactured daily into the finest grades of refined oil, at profits that will in time pay handsome dividends to every stockholder. Figuring on a most conservative basis The Uncle Sam Cherryvale plant will make net profits of over **seven hundred and fifty dollars ($750) per day.** When you buy Uncle Sam refinery stock you secure property that is really increasing in value every day, because the rapid development and the erection of machinery goes forward with vim and energy. The refinery is now turning gold into the treasury every day.

Buys Lots of Barrels.

The Uncle Sam company is now selling oil and big money is already being realized on the Cherryvale plant, just completed. The Uncle Sam company received the first shipment of barrels July 18 in which to ship oil to patrons until the tank stations are completed. A train load will be received during the next few days. Orders for Uncle Sam refined oil are coming in from all over Kansas and all will be filled just as fast as the refinery can turn out the oil, and the plant is now running night and day.

Write at once for prices on refined and fuel oil.

Stock Will Be Advanced Again On or Before Sept. 1.

The Uncle Sam company has met with such great success in raising the necessary capital to crowd the work, both on refinery and pipe line and in its oil field development, that stock advertised at the present prices will either all be sold or advanced on or before Sept. 1. The company has sufficient funds to crowd the work and you should not delay an hour in sending in your remittances for this company is now in communication with over **six thousand** investors, scattered all over the United States. These investors are fast finding out that our refinery stock is good property and hundreds are buying it every day, **net sales** on this stock running as high as **SIXTEEN THOUSAND DOLLARS IN A SINGLE DAY.**

The stock is bound to advance in solid values to 50 cents per share within the next nine months and possibly in ninety days. It's now or never with you if you secure stock at present prices. By sending draft or money order at once you can secure stock as follows:

100 shares, **$14.00**; **250** shares, **$33.00**; **500** shares, **$60.00**; **1,000** shares, **$120.00**; **5,000** shares, **$590.00**; **10,000** shares, **$1,175.00**; **20,000** shares, **$2,300.00.**

Monthly Payment Offer.

100 shares, **$3.75** cash, six monthly payments of **$2.50** each. **250** shares, **$5.00** cash and six monthly payments of **$6.00** each. **500** shares, **$14.00** cash and six monthly payments of **$11.00** each. **1,000** shares, **$20.00** cash and six monthly payments of **$24.00** each. **3,000** shares, **$60.00** cash and six monthly payments of **$71.00** each. **10,000** shares, **$194.00** cash and six monthly payments of **$212.00** each.

Stock is non-assessable and the par value is $1.00 per share.

HOW TO SEND MONEY—Make all checks, drafts or money orders to The Uncle Sam company or H. H. Tucker, Jr., and stock will be sent promptly by registered mail.

Assets Back of This Company—Reasons Why the Stock Will Certainly Go to 50 Cents per Share Within Nine Months.

The Uncle Sam company now has one great refinery completed and in full operation. This refinery is now worth, on a conservative basis, **a quarter of a million dollars** to the stockholders of the company and is already being increased in capacity. The company has miles of lateral pipe lines completed, connecting about three-fourths of the Cherryvale field, and is laying more lateral lines. **A franchise for 179 miles of main trunk pipe line across nine Kansas counties,** clear through to the banks of navigable water is now secured and owned by the company. **Forty miles** of the main trunk pipe line is now on the ground along the pipe line route at Neosho Falls, Le Roy, Piqua and Cherryvale. More pipe line is arriving and being unloaded ready to complete and to pump oil through. The company owns and controls over **thirty thousand acres** of valuable oil and gas lands, located in some of the richest oil fields in Labette, Montgomery, Elk and Chautauqua counties and also south of Bartlesville, in the five hundred barrels district, right up against the Osage line in the Cherokee nation. On these properties there are **seventy-nine (79)** producing wells and five pumping plants. The company has room for over **6,000** oil wells. Thousands of barrels of oil are owned and in storage, ready to be refined and turned into money. More oil is being stored every hour. The company has thousands of barrels of tankage completed, one big tank alone having a capacity of **one million six hundred thousand gallons.** There are two dwelling houses at the refinery and four more in the oil fields. The company also has a **fifty-five** acre tract close to Kansas City, on which refinery No. 2 and the big tank farm will be completed during the next six months. The company has purchased tank cars and has storage tanks for stations that will immediately be installed at **Concordia, Hutchinson, Topeka, Wichita and Salina, Kas.**

More Stations in Prospect.

Forty-five more distributing stations will be established in Kansas as the company completes another refinery and increases the capacity of the one at Cherryvale. The refinery and oil lands and oil productions, owned and controlled by this company, with its franchises, pipe lines and machinery are worth on a conservative basis today close to **six hundred thousand dollars.** In addition to the above mentioned property back of this company there are over **one hundred and twenty-five thousand dollars ($125,000)** subscribed on gilt-edged installment contracts, which will all be paid in during the next four months. This money is for stock that is already allotted and on which two and three payments already have been remitted by the purchasers. This money will be paid promptly at from $1,200 to $1,600 daily during the next 120 days.

Any County in Kansas That Will Buy Fifty Thousand Shares at Present Prices Will Secure an Oil Station For Both Refined and Fuel Oil at Once.

As before stated, the Uncle Sam company is already at work installing stations in Kansas. Any man or club of men who will band together and take **sixty** thousand shares at present prices can name the man they wish to be put in charge of the company's interests in their county and the company will at once commence to supply them with both refined and fuel oils. It will also install a station at their county seat town just as quickly as the machinery can be secured from the manufacturers.

Strong Manufacturing and Rich Growing Enterprise.

The Uncle Sam company has kept its promises in the past and will keep them in the future. In a year from now you will see this stock selling for five times or over the present prices. The company is a common man's company. It takes an immense amount of capital to complete this gigantic undertaking, but the good work goes forward with a vim. If you can't buy over 100 shares take some of this stock and get lined up right for the oil industry of Kansas. If you have from one thousand to ten thousand dollars to invest, come down and look these properties over and have a confidential talk with the managers and officers of the company.

Personnel of Company.

James Ingersoll, president; J. H. Ritchie, vice president; H. H. Tucker, Jr., secretary and treasurer.

References: The Montgomery County National Bank, the People's National Bank and Cherryvale State Bank, all of Cherryvale, Kan.

Will Own Property Worth Over Five Million Dollars In Less That a Year.

The authorized capitalization of the Uncle Sam company is **ten million** dollars. Sixty-one per cent of this stock is now owned by anti-trust haters of the first degree. Thirty-nine per cent of this stock, or **three million nine hundred thousand shares,** are still in the treasury and will be sold at from 15 to 50 cents per share. At least **eight hundred thousand dollars** will be raised from the remainder of this treasury stock. The proceeds from the same will be invested in the development of the vast oil holdings of the company and in the completion of the main trunk pipe line to the Missouri river and of a fuel oil line to central Nebraska. Refinery No. 2 on the banks of navigable waters at Kansas City and **refinery No. 3 in central Oklahoma,** where the company is now securing large oil holdings, preparing to furnish sufficient production to feed refinery No. 3, will also be built. Distributing stations will be located at the leading county seat towns all over Kansas. Tanks for stations at Hutchinson, Salina, Wichita, Topeka and Concordia are now on the way. At least fifty stations will be completed and equipped in Kansas during the next three months. The Uncle Sam company is a home concern. It is backed by the laws of Kansas, supported and approved by about nine-tenths of the people in the state and the Uncle Sam refined and fuel oils will be the most popular Kansas product ever sold in the state and will command good prices.

Big Deals Are Being Closed Daily On This Stock.

Investors can depend, as before stated, on this stock advancing again on or before Sept. 1. However, this does not mean that you have any certainty that it will remain at the present price for even the next five days. Big deals are pending all over the United States. This announcement will be read by close to **fifteen million** people. The saving banks of the country are full of money that is bringing the depositor practically no income and it is not any safer than it would be if invested in this company, as the Uncle Sam company is paying as it goes. It is not running in debt a dollar. In fact it has thousands of dollars in the treasury. Every well managed refinery company that owns its own production succeeds. The Uncle Sam company has oil lands enough to feed the present refinery and the two that will be built during the next year for over a century. When you buy this stock you invest in one of the greatest growing enterprises in the nation. It will be to the west what the Pure Oil company in the east. You should not delay an hour after reading this announcement. Send your remittance now and secure stock, for it is easily worth **25 cents per share right now** and will be selling for that in less than six weeks. Several deals for ten and twenty thousand shares have been closed in the last three days. If, however you only take one hundred shares at $17.00 you are welcome to join us, for this company will live and prosper by the help of its many friends and the thousands of small stockholders and influential men who will demand and force a square deal for its products in every part of the union. For further particulars write or wire,

H. H. TUCKER, Jr.
SECRETARY
Cherryvale, Kansas

WESTERN
THE FRUIT-GROWER
ST. JOSEPH. MISSOURI

Address all communications and make Remittances Payable to "The Fruit-Grower Company," Seventh and Charles Streets, St. Joseph, Mo.

W. G. Campbell, Jr., General Manager James M. Irvine, Managing Editor

Advertising Rate—20c Agate Line, $2.80 per inch. Fourteen lines to the inch
No advertising in class generally termed "Objectionable" accepted under any conditions. Editions mailed on 1st day of month. Forms close on 20th of preceding month; i. e., January forms close December 20th, etc.

Circulation FORTY THOUSAND COPIES a Month

Subscription, 50c a Year After Jan. 1, 1906, rate will be $1.00 a year. Until that date readers may pay ahead from one to four years at 50c rate

Remit us U. S. Coin, or Currency, Postoffice Money Order, Express Money Order, Registered Letter or Bank Draft. Send stamps only as last resort. All remittances at our risk.
Unless otherwise ordered, snbscriptions will commence with month following date of remittance, and continue until ordered stopped and arrearages paid. If yon desire paper to stop when time is up, notify us. The letter "S" after date on address tag signifies that paper will stop on that date. The address tag stands as a receipt for your remittance.
In compiling a list of Forty Thousand subscribers, it is an easy matter to make mistakes, but we guarantee fair treatment to everyone. If you find an error in your address tag, or do not receive paper promptly, write us and we will trace matter np at once.

Entered as Second-Class Matter in the Postoffice at Saint Joseph, Missouri

Vol. 16. AUG UST, 1905. No. 8

Those persons who sent fruit for the St. Louis exposition last year, and whose fruit was of such quality that it won a medal, will not get a medal, unless they pay for it. This statement is made in answer to numerous questions as to when the medals will be sent out by the exposition company. The medals were awarded all right, but if an exhibitor wants the medal itself, as a souvenir or for the benefit of his children or his children's children, he must pay a jeweler for making it. We do not know how it strikes other people, but this action on the part of the exposition company seems to us to be very small business. It was announced that fruit exhibits of certain grades would be entitled to gold medals, or medals of silver or of bronze; no statement was made before the exposition opened that the medals would have to be paid for, and the exhibitors doubtless believed the medals they were awarded would be furnished them. Now to be told that these medals must be paid for is enough to disgust any one who made an exhibit. Exhibitors of live stock were awarded premiums in cash, and these were paid. Exhibitors in this class, too, profited by their winnings through the advertisement their herds received from the awards. But the man who sent an exhibit of fruit could not profit in an advertising way, nor was any cash award promised him. But when he won a medal, he should have it, without having to pay for it. The exposition company should have provided for furnishing these medals, just as it provided the cash to pay for the live stock exhibits. When will the time come that the fruit farmer is given the same privileges in this regard that the live stock grower receives?

All through the Western country irrigation enterprises are being developed which in a few years will add millions of acres to the total area devoted to cultivated crops. Not all of this land will be thrown on the market at once, of course, and it is likely the additions will be made just about as fast as will be demanded by the increase in population. These enterprises but indicate that the supply of land which can be cultivated without irrigation is becoming exhausted very rapidly, and Uncle Sam will provide new farms by conducting the necessary water to them. In time even these lands will become scarce, and then will begin the work of more intensive farming than we have ever seen in this country. Many millions of people can be supported in this country, but our methods of farming will have to be somewhat changed.

In a report of crop prospects which was issued recently by the secretary of the Michigan State Horticultural Society appeared this statement: "In a general way Michigan orchard conditions are very encouraging, and the grower who has a true love for the business and whose land is suitable for fruit growing finds much of encouragement in the future outlook. The shiftless growers, who set orchards on unsuitable soils and locations, and then neglect their care, are fast becoming discouraged and are dropping out of the business. But the horticulturist who applies modern methods and good business principles to his work will from now on have the markets more to himself, and his reward will be ample." While weather conditions have seriously injured fruit crops in some sections in recent years, is it not true that many failures everywhere can be understood after reading the foregoing? We believe there is much to encourage the careful and up-to-date grower of fruits, for the slipshod are being forced out of the business.

The September issue of The Fruit-Grower will have some special matter concerning the fruit industry in the Northwest. This special matter will not be confined to horticultural topics, however, but all branches of agriculture will be included to some extent. The northwestern portion of the United States has attracted much attention of recent years, especially in horticultural circles. Not only are fruits of very fine quality grown in the Northwest, but the growers there are among the most progressive to be found anywhere. We hope to be able to present some articles which will be interesting and profitable.

Six members of the class which was graduated from the Missouri Agricultural College last spring had supported themselves during the four years they were in college, and three more of them had partially supported themselves. This fact speaks well for the young men, and also for the institution. Young men who pursue their college work under such circumstances ought to be a credit to the institution which sends them forth.

The Armour refrigerator car line did not furnish enough cars to handle the crop of berries at Wilmington, N. C., in consequence of which thousands of crates of fruit were lost. The growers presented claims for damages to the value of this fruit, at current market prices, and the company has just paid all the claims. About 44,000 crates of berries were lost, and the fruit cost the Armour Company about $70,000.

Just before the last forms for August number of The Fruit-Grower were closed a notice was received from Prof. John Craig, secretary of the American Pomological Society, announcing that in deference to many requests and suggestions, coupled with the difficulty in securing speakers desired for the August meeting, the convention has been postponed until September 19, 20, 21, 1905. On these dates the convention will be held at the Coates House, Kansas City, Mo., under the same auspices as announced heretofore. This change insures a good attendance, good fruit exhibit, pleasant temperature and an excellent program. All arrangements as announced in The Fruit-Grower last month will be carried out.

A Big Kansas Farm.

A visit to the home of possibly the greatest farmer in Kansas was recently my privilege. Some time since I received a communication from one of the great New York dailies. "We hear that there is a farmer in your state who has amassed a million and a half from farming. Who is he, and what can you tell us of him?"

My mind instinctively reverted to Col. J. H. Robinson of Eldorado as the man—yet we dared not say so, as our information of his operations was too limited to attempt it. While at the recent state horticultural meeting at Wichita in June we were pleased to have the colonel with us. I doubt if there lives in the state a man so informed along so many lines as Col. Robinson. He is especially up on horticulture and can give the best of us pointers on the several lines, whether of varieties, planting, cultivating, soils, botany, entomology,

It has long been my wish to visit the colonel and his great farm, so when that gentleman said cheerily, "Come, go home with me," I felt that he meant just what he said, and I went.

Eldorado is some thirty miles east of Wichita, on the Walnut river. What memories were awakened by my second visit to this section. It was just forty-eight years since I first visited this section. There were no settlements here then. One lone cabin near where Eldorado now is located was all that I saw at the time of my first visit. In this lived a white man with a colored wife. I asked about this nondescript couple, and from an old settler had my statement verified. While at this cabin we were joined by one Hilderbrand, who doubtless had a claim on the river; as I was shown the identical cabin built by him as early as 1858. To Mr. Conners, who is acknowledged the oldest settler in Butler county, I am indebted for a very pleasant drive to the Hilderbrand home, which Mr. Conner purchased of him in 1858 or 1859, and on which he lived until about a year since. Hilderbrand was forced to leave, being blamed with associating with horsethieves, if not himself one of them. He was afterwards claimed to have been hanged for murder, although every few years the notorious Steve Hilderbrand, like Banquo's ghost, will not down. Hilderbrand was adjudged guilty by his fellows and suffered forty lashes on his bare back, "well laid on," said Mr. Conner. Little we thought when we secured him as our guide and hunter in chief, of the company we kept.

The morning after reaching Eldorado the colonel called for a span of lively bronchos, and remarked, "Can you stand a forty-mile bout?" I felt able to stand this or more.

To attempt a description of all I saw in this drive would be futile, as this farm, or aggregation of farms, covers some 15,000 acres of the best land in this or any other state which I have visited.

After a three-mile drive I remarked, "This is more like the country I saw forty-eight years ago than anything I have seen lately," as all to the west was prairie never having been broken.

The colonel said, "You can travel ten miles west and not meet with a house." Here were grazing hundreds of fat cattle—800 head, I think he said. We drove anywhere he chose among the cattle and over the prairie. We next visited farms in cultivation. Here were men putting up the second crop of alfalfa—about four tons already cut—with a prospect of two, possibly three, more cuttings, and 1,200 acres of it; 800 acres in wheat, 2,000 acres in corn, with many other crops. Then the breeding of Percheron Norman horses is one of the colonel's fads. Only the day before I got here one of his sons sold nine head for more than $1,000 each—as I remember it, $11,000 for the nine. Whew! It makes one dizzy to see such farming and such results. Usually the Robinsons feed 1,000 head each of cattle and hogs. Not content with agriculture they have large orchards and devote considerable to forestry. I visited a plant of black locusts, some of which were quite large. The black locust has generally been condemned as a profitable tree for forests on our western prairies on account of the ravages of the borer. While I found the borers had played havoc with these trees up to three years ago, yet since that time there is not the least sign of them, as all the young sprouts (some as thick as my arm) were perfectly smooth and entirely free from borers. It is claimed that all insect life has "its coming and its going." It is barely possible that for years at least these otherwise best of trees for our plains may be immune from the attack of this terrible pest. But for the borer the locust would lead all other trees on our western prairies.

The wheat crop of southwest Kansas is truly wonderful in not only its extensiveness of acreage, but in its maturity. So well filled is it that by actual weight it is above sixty pounds per bushel, and making thirty-five bushels measured per acre.

I wish to acknowledge myself under obligations to Colonel J. R. Mead, of Wichita, for many favors, especially a drive about the city for several hours. As the colonel was an original settler, in this section having entered 160 acres in the very heart of the city, and doing possibly as much as any other citizen in the development of the city, and enjoying in its prosperity he was most interesting in showing us around. One thing I would mention that impressed itself upon me, the colonel's beautiful lawn. A year ago a flood in Wichita destroyed the lawn by a deposit of several inches of sediment. Last fall the ground was prepared and sown to lawn grass with the splendid success it now is. The city officials gave the culture society a showing about the city in automobiles. The ride embraced a drive of twenty-five miles.—FRANK HOLSINGER

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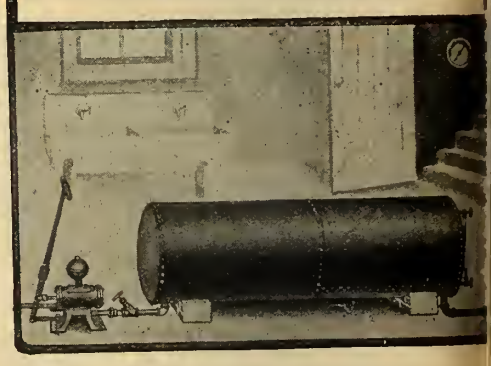

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Gardening Notes

Bush Beans in the Trial Ground.

The bush beans were planted in the trial grounds this year on May 15, and the first beans were ready to pick July 3, or in 49 days. These were Early Six Weeks, and the new green pod that I told you about last year. This new green pod bean has never been listed by any seed man so far as I can find, but it is known locally in several places, for I have had samples of it sent me for trial from several different people every year. This year I had samples sent me from Michigan, Oklahoma and Mississippi. It is the same bean in every case, and it is sure a good one and deserves a place on the lists of the seedsmen. It is the earliest bean I have ever grown, green pods, very prolific, and very hardy. Pods are wide, flat and tender. If I can get enough seed of it together I expect to sell it or give it away next year, for I believe it is absolutely the best bush greenpod bean in cultivation.

Of the standard varieties the Stringless Greenpod was as usual the best of the greenpods. It is early, prolific and tender. It was about four days behind the Early Six Weeks. Valentine was about the same, but Refugee is much later. Of the wax beans, the Perfection, Wardwells, Black Wax, Pencil Pod, Golden Wax and Valentine Wax all came in together about July 7, and there seems to be little choice as to manner of growth and yield. The Perfection Wax, however, has the finest pods of any, long, straight, beautiful color and very tender. Wardwells would be my next choice. The Pencil Pod Wax is an improved black wax. Pods are longer and straighter, otherwise it is very much the same. The Valentine Wax is a wax form of the Roundpod Valentine, and is a splendid bean. The plant is very hardy and the round, straight yellow pods are beauties. I believe it would be a great bean to grow to ship if a round pod is wanted. The Refugee Wax is a nice pod, but pretty late. Leopard Wax is similar to Golden Wax, but later. Black Valentine is showing up finely. It is a round pod Valentine, with a black seed, and strikes me as being an improvement on the regular strain. It is early, very thrifty and strong in growth, and yields immensely.

A customer in Turkey sent me a sample of wax beans grown there, which I thought at first were the same as Black Wax, but the pods are much larger; they are as wide as Golden Wax, and almost round like Black Wax. It is a very handsome bean and strikes me as comparing very favorably with any of our varieties. The Turks may be barbarians, but they certianly have some good varietles of vegetables. I have got samples of about a dozen different varieties of vegetables from there, and all are first class. A variety of mustard among the lot was the finest mustard I ever saw, and I am going to try to save a lot of seed from it.

Varieties of Beets.

The beets were planted May 13, and in 60 days from planting, July 13, most of the varieties were from three to four inches in diameter and had been large enough to use for some time. As usual the Egyptian is slightly the earliest of the lot. I have three different strains of it, but all very similar. It is decidedly flattened or turnip shaped, and does not get very large, but it is very early, deep red and tender. The small tops make it nice to bunch. Eclipse and Blood Turnip are not quite so early, but are larger and more globe shaped. I like their shape much better than the Egyptian, and they will stand longer without getting woody. Detroit Dark Red is very similar to Eclipse, but deeper red in color.

I have a sample of a yellow turnip beet that is something new to me. It is as early as any of the red sorts, and is the sweetest, tenderest beet I ever tasted. I suppose its color would be against it in market, but for my own use I will always have a few of them.

The Forage Crops.

On May 15 I planted samples of all the leading forage crops. Now (July 15) they have been out just two months. The Dent corn is the tallest, being about six or seven feet high. Sweet corn and flint corn are about a foot less, but having more suckers would perhaps make more fodder if cut now. Sorghum is between five and six feet high and making enormous growth. As it will stand much thicker planting than corn, it would make more fodder than any of the varieties of corn that I have. Kaffir corn is between three and four feet high and looks about like the sorghum, but does not make as much growth at any time. As between the two I would much prefer the sorghum. The pencillaria is four to five feet high, and as it stools out like wheat it is very thick on the ground and would cut more fodder than anything I have. The leaves are not as wide as the other, but there are lots of them and not much stalks. As it will sprout up readily when cut, I could get about two more crops of it between now and frost, equal to what is now standing.

The soy beans are about two feet high or a little more, sturdy and strong, and setting lots of pods. They are drilled in rows two feet apart and have branched out till it is a hard matter to tell where the row is. If cut now they would make hay equal to clover hay, and an enormous lot of it. The cowpeas are branching out and have vines perhaps two feet long on every side. It is just coming their time of year to grow now.

Brome grass sown broadcast in April mixed with alsike clover is now nearly waist high as you walk through it, and would cut between one and two tons to the acre of very fine hay. It is on a piece of wash land that has always till this year grown up to weeds.

Now Is the Time to Sow Turnips.

From now on till the middle of August is the time to sow turnips. Put them in on every piece of land that you can clear off. You may get more turnips than you have use for, but you are out practically nothing but a little for the seed, and what turnips you cannot use the hogs and chickens will be glad to get in the winter if you will store them away from frost somewhere. If you want something to break up a hardpan subsoil, sow cowhorn turnips. They will go straight down for 18 inches or more and will go through anything short of actual rock. Next spring that hard subsoil will be as full of holes as a colander.

Harvesting Onions.

As soon as the onion tops get pretty well died down we go through and pull them and throw six rows together in a windrow. As soon as they have wilted and dried some, say the next day, we gather them up on shallow trays or crates. These crates are three feet by four, and four inches deep, made of fence boards around the sides and lath bottoms. A crosspiece of fence board across the middle will help to stiffen them. As fast as the crates are filled they are piled up, one on top of another, with blocks between at the corners to allow ventilation. We set them end to end and make a rick maybe ten crates (40 feet) long, and a dozen or fifteen crates high, then take wide boards and make a roof over the crates, A shape, that will shed water, and extend a ways over the edge of the crate. Of course, if you have a crib or barn floor where you can spread the onions out to cure you need not pile them up in the field this way. The onions can stay in the field in the crates for six weeks or more, and then can be worked over, sorted and topped and stored for sale. They will be sound and in good condition. Small onions for sets are handled in exactly the same way.

Potato Prospects.

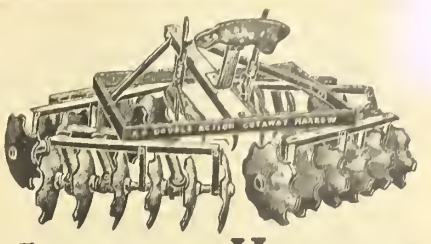
I fear I am going to fall short of that 400 bushels per acre I was expecting. The dry weather in June cut them short about half. If I get 200 bushels per acre average I will do well. The potatoes are of good size, smooth and nice, but the hot dry weather just when they were filling and needing lots of water knocked the 400 bushels higher than a kite.

I have some Early Michigans on low land that are still green and growing and may make the 400 yet, but the big field on the sod ground on the hill are about done.

I understand that the conditions are practically the same all over the corn belt, and while I do not look for any scarcity or very high prices, I do not think the crop will be large enough to make a glut or very low prices.

HENRY FIELD.

Shenandoah, Iowa.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Questions and Answers

S. C. C., Kidder, Mo.—I would like to hear from someone who has had experience with compressed air sprayers and with hand-pump sprayers, as to which of these is better.

Who can answer the above query? The compressed air sprayers for orchard use have not been tested by many persons as yet, for they are comparatively new, but the comparison will be interesting, from those who have used both.

J. C. B., Saluda, N. C.—I have some Yellow Transparent trees, planted three years. Can I top-graft them with any other variety? With Jonathan, for instance?

The trees can be top-grafted all right, but there may be some objection to Yellow Transparent as a stock. The variety is not generally used for stocks for top-grafting, but where one has the trees they may be all right. Who has had any experience with the variety as a stock for top-grafting? Yellow Transparent trees blight, but will this tendency occur where the entire top is changed? Who has tried it?

P. W. C., Sardis, B. C.—What is nitrate of soda? I know what bicarbonate of soda is, also bicarbonate of potash, baking soda, saleratus and concentrated lye, but know nothing of nitrate of soda.

Nitrate of soda is found as a deposit in various places, the most extensive deposits now being found in Chile, from which country great quantities are exported. Nitrate of soda is used chiefly as a fertilizer, being especially rich in nitrogen. Some of the packing companies have also used it in the packing of meats, and it is also sold for chemical purposes somewhat; it is also used in the manufacture of gunpowder. But as the nitrate of soda is mentioned in the farm papers, it refers to it as a fertilizer. Full particulars concerning nitrate of soda and its properties may be obtained from the Chilean Nitrate Works, 12 John street, New York City.

H. M., West, Ark.—(1) I have a block of Ben Davis trees set three years ago this coming winter, and was cultivated in corn two years ago; and then in oats, followed with peas last year and this. Land will make twenty bushels of corn or one-half bale of cotton per acre, and red clover will grow twelve to fifteen inches high; trees have made tolerably good growth. Now, I want to know which you would advise to sow this land to, red clover this winter and let clover stay on two years, grazing of a little with horses; or would you cultivate in cowpeas, grazing off with hogs?

(2) I have another piece of land with Bens, set on it at same time as above. Land is sandy loam. The trees have made exceptionally fine growth. This is ideal land for alfalfa, and I want your advice about sowing it to alfalfa. Would it be all right to sow it and if the trees showed a tendency to quit growing scatter fertilizer around them?

(3) I have some trees set on poor soil (worn out, not washed), with good clay subsoil, but rather wet, and want to fertilize around trees and plant land in cowpeas, and as I haven't got manure for them, what kind of fertilizer would you use, and how much would you use around base of tree? Have been set two years.

(4) Does the Yellow Pearmain keep as long as the Shockley and Red Limber twig?

(5) I am growing some seedlings of common Ben Davis that grew near a Winesap. No other trees bloomed within a mile of these two trees. What do you reckon they will make?

(6) What variety of peaches will ripen ten days to two weeks earlier than Mamie Ross?

Please answer when convenient, and oblige, HENRY MAXIE,
West, Ark.

1. Land which produces only twenty bushels of corn per acre is by no means fertile land, and is none too good for apple trees if they are given entire occupancy of the land. Indeed, that is not sufficient. They should have good cultivation in leguminous crops. For this reason I should not advise uncultivated crops, even red clover, which is a legume. I should prefer cowpeas or crimson clover ,which will not interfere with the following year's cultivation.

2. Alfalfa is not a good orchard crop, and particularly not for a piece of land where the trees are making such a heavy growth. In the first place it is perennial, preventing the proper cultivation of the orchard. It consumes phosphoric acid and potash, the very elements needed by bearing trees, robbing them, that is if the crop is grown for hay. At the same time the trees do not need the nitrogen which legumes are adapted to furnish. I am strongly opposed to making a milch cow serve as a draft horse. This piece of land, if the trees continue making too much growth, might be used for one more crop of corn, which is a liberal consumer of nitrogen.

3. Trees on poor (worn out) land and wet also I fear are not likely to do well even with the use of fertilizers. Such land needs drainage if used for apple trees. In case it is not practical at this time to tile-drain this land, the writer has seen very good results follow back furrowing the land and then giving careful attention to leading away the surface water. Having improved the drainage then it may be worth while to consider fertilizing. Such land, for apple trees, is in need of humus and nitrogen while the trees are young. Cow peas are well adapted to supply both. In case an immediate tonic is needed, one pound of nitrate of soda or two pounds of cotton seed meal well distributed on the surface about the young trees and preferably worked into the soil in the latter case, will meet the needs. Of course there are various other nitrogenous fertilizers which could be used to supply an equivilent amount of nitrogen.

4. The yellow Pearmain is what is known as Clark's Pearmain, I presume. The other apples mentioned are among the best keepers known, and are better keepers than the Pearmain under usual conditions.

5. The effect of such a cross, should it have happened, would be promising. It should tend to give a prolific apple of improved quality over Ben Davis; but of course there is no certainty to be counted on. Under such circumstances a larger proportion of the seedlings usually come inferior to either parent with only here and there a seedling of much value. You are experimenting along a very useful line. Here in Arkansas it is almost impossible to raise 100 apple seedlings without getting one or two apples of merit, and we need very much an apple with the prolificacy of the Ben Davis and the quality of the Winesap or a Jonathan.

6. Sneed is about two weeks earlier. It is the first peach in Georgia shipments. Triumph and Greensboro come in about ten days ahead of Mamie Ross.
ERNEST WALKER.
University of Arkansas.

E. K., Washington, Mo.—What is remedy for root rot in orchard?

3. Root rot of the apple is supposed to be caused by a fungus which is always found present in root rotted trees. No preventive for this disease is at present known. Since it occurs below ground where it is difficult to apply fungicides, it is quite probable that one will be compelled to depend upon resistant roots in preventing the disease. It has been observed by many growers that the Northern Spy and certain others are more resistant of root rot than are the average commercial varieties. It is claimed by some also that Richardson's Red is very resistant. Not enough work has been done along the line of testing resistant varieties, however, for us to say authoratively what sorts will best resist it.

Answered by Dr. J. C. Whitten.

Mrs. R. F. M., West Plains, Mo.—What makes tomatoes rot in the blossom end? If there is a remedy or preventive, what is it?

1. The blossom end rot, or black-rot, of the tomato has been supposed to be caused by a fungus which is always found present in these rotten places. Certain investigations, however, indicate that possibly the rot is caused by a bacterium and that the fungus present there only occurs after the rotting has begun. One might suppose that Bordeaux mixture would be efficacious in preventing the rot. It is said by many to, in a large measure, reduce the amount of rot. So far as our experience goes, however, we have not been able to secure very satisfactory results in spraying with Bordeaux mixture, although I would advise a grower who has not tried it to give it a fair trial. Still more important factors to be considered in preventing the rot are (1) plant those varieties which are most resistant of the rot. It is best for each grower to try at least a few plants each of a goodly number of varieties in his soil and find out which resist the rot best. With us, Ponderosa, Livingstone's Stone and Beauty have been quite resistent of this rot. Acme and many of the early varieties rot very badly. (2) Where rot has been bad in the tomato patch one year it is likely to appear if tomatoes are planted on the same ground the following year. Therefore, plant the tomatoes each year at some distance from where they planted the year before if possible. (3) Pick and destroy the rotten fruits as soon as they appear, so as to prevent spreading of the disease.

Answered by Dr. J. C. Whitten.

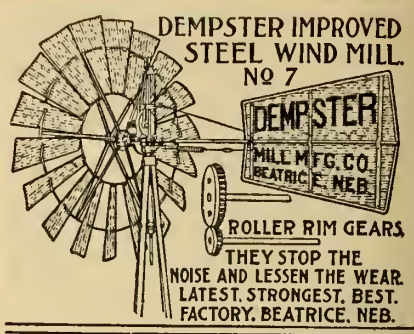
F. C. M., Hartshorne, I.T.—Can someone give directions for planting a hedge? When should it be planted and how?

Hedges may be started either from the seeds or from young plants. A strip of ground not less than four or five feet wide should be prepared for the young plants, which should be set in two rows, these rows being about one foot apart. This makes a good double of plants and makes the hedge broader and stouter. Plants should be set a foot apart in the rows. In setting the rows it is best to have the plants alternate rather than being exactly opposite in the two rows, so that the trees in one row are opposite to the center space between the trees in the other row. The hedge should be given good cultivation for one or two years effort is made to destroy insects or tack our orchards. Inasmuch as these wild trees are not sprayed, and as no until the plants are well established, when grass can be allowed to grow up to it. If seeds are used instead of plants, it is best to sow the seeds thickly in nursery rows until the plants are one or two years old, before planting them in the permanent hedge. In nursery rows they can be cultivated a little more cheaply than they can in their permanent location and will do better.

Answered by Dr. J. C. Whitten.

G. D. C., Glen Ellyn, Ills.—Is it detrimental to an orchard to have wild crab or thorn apple trees near?

The wild crab and thorn apple trees are sometimes attacked by the same insect and fungous enemies which at-



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Science again swings her searchlight, and this time reveals some new and interesting facts about Paint that concerns every owner of paintable property.

Everyone knows that the oil is the life of paint. This is an axiom of practical painters.

Pure linseed oil has been and still is the only oil yet found which gives brilliancy, beauty, durability and long life to paint, at the same time possessing the elasticity necessary to permit the expansion and contraction of paint with the swelling and shrinking of the wood which it covers and protects.

Nature has wonderfully introduced us to this product of the flax seed which enables us to cover our houses and harns with a genuine waterproof coat that protects from rain, wind and sun; preserves the wood and, according to the combination we make with coloring pigments, makes our property attractive to see.

As long as this covering keeps out the water and looks well it is good enough for the best, but as soon as it chalks, cracks, peels or blisters, the sun and rain have access to the surface it covers and the wood will decay or the iron rust. The only remedy then is more paint.

The science of painting, therefore, is to get a paint that will give the longest possible protection to property.

Of course, the pigment—which is white lead, zinc, coloring matter and drier—and the oil it is ground in has much to do with the life of paint. But these being of the best may yet form a part of a very short-lived paint because if one ingredient is old and stale it cuts down the life of the painting joh hy just the length of time it has stood growing stale before it went into the paint.

And the oil also must be absolutely pure and freshly stirred together with the pigment when the painting is to be done.

It is shown by O. L. Chase, a St. Louis paint man, that the best of oil may he greatly deteriorated in quality if allowed to stand long, sealed up in a can with the pigment.

This is due to the chemical action of the mineral ingredients of the pigment upon the vegetable oil.

When paint stands "ready mixed" in a sealed can, the minerals eat the life out of the linseed oil—and that cuts down the life—the wearing quality of the paint—the very thing that we want to preserve.

By two simple features in his unique plan of preparing and shipping paint, Mr. Chase has overcome two serious obstacles.

To enahle his customers to get an ahsolutely pure linseed oil—which is a rare article in these days of adulteration—Mr. Chase especially makes the oil used in his paints, and makes it hy the old process method; more expensive than that used in making the modern adulterated oil hut producing a far superior article.

Having thus secured his pure oil, made hy the best method, he grinds his paint pigment fresh every day to the order of his customers, and then ships the paint pigment (which is paint hase double strength) in one can and the oil in another, gallon for gallon, all cans hermetically sealed.

In this way Mr. Chase has produced a paint that is not only pure, freshly made and all ready for use (the paint and oil heing merely poured together and stirred) hut he has hit upon a plan which gives the purchaser two or three times as much for his money, for, in adding to the life of his paint hy preserving all the life in the oil, Mr. Chase has produced a paint that he can and does ahsolutely guarantee for 8 years—something never heard of in paint before.

Another advantage that this method of manufacturing and selling paint has over the ready mixed plan is that hy shipping his paint pigment, or paint base, in one can and the oil in another he overcomes the difficulty of having settlings or sediment in the bottom of his cans, which oftentimes hecome as hard as cement in the hottom of a can of ready mixed paint.

When his paint pigment and oil are merely stirred together every drop of his paint can he used without lumps, gritty or sandlike suhstance.

Two entirely new features in selling are also introduced hy Mr. Chase, in first that he ships his paint direct to the user, paying all freight; and when the order of paint has arrived the user has the privilege of using two full gallons to test the paint in any way he may desire, and then if not satisfied he may return the balance of the order and the two gallons he has used is given to him absolutely free for making the test.

Second: Mr. Chase sells his paint either for cash or he allows six months'. time. This enables the purchaser to paint when he wants to and pay for his paint when it is most convenient to do so.

A proposition like this is well worth looking into, especially when we consider that a paint lasting 8 years saves two or three repaintings, which means a great saving of paint, lahor and time.

We are printing on another page of this issue an advertisement of Mr. Chase's, and to those of our subscribers who have painting to do, we certainly recommend that they write to Mr. Chase for further particulars of his new plan of manufacturing and selling paint.

He can be addressed at 4103A 6th Street, St. Louis, Mo., and we are certain he will give our readers fair and courteous treatment.

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EDITOR knows from experience "Shoo-Fly" is O. K.

fungous diseases which appear upon them, there is a slight danger that some of the parasites may be propagated on the wild trees and from there spread to adjacent orchards. The codling moth and canker worm feed upon both the wild crab and the thorn apple. If they happen to be abundant on the wild trees which are not sprayed, they may spread to some extent to cultivated orchards, even though the latter may be carefully sprayed. These are the only two insect enemies with which I am acquainted which are likely to propagate on the wild trees to any extent.

Fire-blight occasionally attacks these wild trees. From them it may be spread to the orchard. These three parasites are the only ones with which I am acquainted which may be spread to an orchard from the wild trees. Inasmuch as these diseases are more or less present even in well managed orchards, I would say that the danger from thorn-apples and wild crab is altogether a very small one, except, possibly, in exceptional cases where the wild trees may be observed to be very badly infected.

Answered by Dr. J. C. Whitten.

Subscriber, Illinois.—Kindly give a remedy for cure and prevention of blight.

Of course, the branches already blighted cannot be saved. Cut them off, but check off further extension of blight in that tree and prevention of its attack on others can be found in a very simple application to the ground under the trees, covering a circle at least as large in diameter as the shadow cast by the tree at noon. This application consists of an inch unbleached hard-wood ashes. If such cannot be had, apply potash in some other form, such as themudiate, purchased at $2.50 per 100 pounds. Dissolve 20 pounds to a barrel of water and spray or sprinkle the ground freely with it.

Answered by J. F. K., Washington, D. C.

G. D. C., Glen Ellyn, Ills.—Please examine enclosed leaves from my young cherry trees and advise what is difficulty and remedy.

1. The cherry leaves are affected with leaf-spot, a fungous disease quite prevalent throughout this section. It frequently causes the leaves to drop sufficiently early in the season that the trees take on a semi-dormant condition during the dry, hot weather of summer, which renders them likely to start into a second autumn growth when fall rains come on.

The best preventive is to spray the trees thoroughly just before they start into growth in spring, with a strong Bordeaux mixture, using, say 6 pounds of copper sulphate and 6 pounds of lime to 50 gallons of water. The spray should be applied so that the twigs of the trees will be thoroughly covered with this mixture at the time they start into growth in spring. It is also well to follow with a second spraying after growth begins. The second spraying, however, should be with a weak Bordeaux mixture, using not more than 2 pounds of copper sulphate and 2 pounds of lime to 50 gallons of water. A strong Bordeaux mixture is liable to injure the young leaves if the trees sprayed with it after growth begins.

Answered by Prof J. C. Whitten.

O. B. Bryan, Idaho.—1. What known apple is the best commercial variety, that is, will bring the best price on the market? 2. What can you say of Delicious? Is that a first-class commercial sort?

1. It is impossible to name any one variety of apple which is the best commercial variety, that is, which will bring the best price on the market. To begin with, markets differ in their tastes. Certain local markets have a preference for yellow apples, like the Grimes Golden or Newton Pippin or Albemarle Pippin. Others prefer red apples, like the Jonathan. Again, different soils and locations are suited to the production of different varieties. A variety which may reach perfection in one location may not be well enough adapted to some other locality to reach anything like so good a favor. For instance, the Albemarle Pippin reaches most delicious flavor in Albemarle county, Virginia, but in some of the rich, heavy loams of the west it is not worth growing. However, there are certain varieties of apples which are generally of very much higher flavor and will bring higher prices on the market than will certain other well flavored apples, even when grown in the same locality.

2. The Delicious is a beautiful, large apple, symmetrical and attractive in shape and also of high color. As its name indicates, it is of very high flavor. The flesh is also of very pleasing texture. In the northern part of this state and in Iowa this variety reaches splendid development. I have not seen it grown in the far west, though I have seen specimens of it from the West which are very attractive, fine apples.

Answered by Dr. Whitten.

W. O. H. C., Williamstown, Ky.—What is the best time to plant pecan nuts and set the trees, and should they be manured?

Pecan nuts should be planted in the fall as soon as ripe, or else the seeds should be mixed with moist soil in a box and set out of doors on the ground where they will keep moist and frozen over winter, and then be planted in the spring. It is best to plant the nuts first in nursery rows where they can be given good cultivation for a year or two, when the trees may be planted out where they are to grow permanently. Freezing the nuts during the winter in soil cracks their shells so they can come up. Unless this is done, most of them will lie in the soil over a second summer and come up the second year after planting.

It is best to transplant them from their nursery rows to their permanent position just about the time their buds are opening in spring. If transplanted very early before they begin growth they do not start growth readily after transplanting.

Pecan trees thrive in deep, rich soils like river bottom lands, or rich creek valleys. Under cultivation, however, they will do well on any deep rich upland soil. It is not necessary to manure the trees. Seedling pecans differ greatly in the length of time it takes them to come into bearing. Some of them begin to bear at from five to seven years of age, while some of them do not fruit much until they are 20 or 30 years old. Some of the grafted varieties of pecans uniformly bear quite early.

Answered by Dr. Whitten.

Noticing inquiries as to the failure of pear trees to set fruit in spite of heavy bloom, I think some information which I have recently acquired may be or use to others.

For three seasons my dwarf Duchess trees are set a heavy bloom, but the buds nearly all withered, turned black and fell off, leaving me only an occasional pear—to let me know what might have been, I suppose. Both last year and this year I noticed a small gray bug in large numbers very actively engaged on and about the blossom buds and blossoms, and this year I sent two to Professor Stedman to learn what their business might be. He reported that they are the tarnished plant bug, which kills the fruit buds of some kinds of fruit by sucking the sap from them and poisoning them. The remedy is to spray with kerosene. As they appear very early in the season, when the blossom buds are first swelling and before the leaf buds open, this spraying can be done without injury to foliage.

I have a large list of varieties of pear, but the dwarf Duchess is the first to push its fruit buds, and until the blossoms of this variety are gone, the bugs swarm on it, and do not appear on the other trees. It is well worth while, then, to have a few rows of these trees in a pear orchard to serve as trap trees for the spraying of these bugs.

B. C. A., Carthage, Mo.

The bugs also operate on my plum trees, I think.

It's "Lott The Land Man" of Kansas City, Mo., whose ad. appears elsewhere in this issue of The Fruit-Grower, who is advertising farm snaps in Arkansas. Write to him today mentioning this paper if you are thinking of buying a farm.

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If interested, write us for prices. CALIFORNIA PINE BOX & LUMBER CO., Rialto Bldg., San Francisco, Cal.

The Fruit Crop Situation.

The following is a summary of the condition of the various fruit crops up to the time of going to press with the August number. A letter just received from Mr. Westly Greene, secretary of the Iowa State Horticultural Society contains these percentages on the various fruits:

Apples, 44 per cent; Pears, 27 per cent; American plums, 51 per cent; domestica plums, 38 per cent; Japan plums, 30 per cent; grapes, 74 per cent; blackberries, 79 per cent; fruits that have been gathered or are being gathered—cherries, 50 per cent; red raspberries, 77 per cent; black raspberries, 81 per cent; strawberries, 85 per cent.

Mr L. A. Goodman, secretary of the Missouri Society, in touching on the apple situation, says the prospect for a crop is as follows:

In the Ozarks 25 to 35 per cent.

In Central Missouri, 20 to 30 per cent.

In North Missouri, 15 to 25 per cent.

While this is true we have special locations where the crop will be 50 to 60 per cent, and even the small average that the state makes, means, because of the large number of orchards, a good many barrels of marketable apples for sale at picking time.

The prospect, so far as heard from, show less than half a crop in New York, a little more than half a crop in Michigan, but a still larger percentage in the new Western and Pacific States. This, says Mr. Goodman, justifies us in saying that the prices will be fairly good and that it will pay t o take care of all our apples.

Grapes will be an abundant crop.

Peaches, of course, are a failure.

Pears a very light crop.

Plums a very good crop.

Below we quote from special reports just received by The Fruit-Grower, from almost every section of the United States. These reports are strictly reliable in every respect and a perusal of them will place our readers in touch with conditions throughout the country.

Huntington, Ark.—Peach crop good. Plums full crop.—S. B.

Mena, Ark.—Plums, 75 per cent crop. Peaches and plums rotting on trees.—W. H. W.

Bentonville, Ark.—Apples, one-fourth crop and poor quality. Trees in good shape.—I. B. L.

Springfield, Ark.—Apple crop about 75 per cent. Fruit affected with scab and bitter rot; no worms. Summer apples have been selling 75c to $1.50 per bushel. General wet weather caused more scab than usual, and hindered cultivation. Think, however, quality will be good.—R. I. J.

Fruita, Colo.—Apple crop 40 to 50 per cent, quality of fruit fair, and condition of trees good. Codling moth bad.—W. E. R.

Rockyford, Colo.—Apple crop 50 per cept, and quality of fruit good.—J. H. C.

Canon City, Colo.—Apple crop from 300 to 350 cars winter apples. Last year 300 cars. Quality good, and but few wormy apples on orchards thoroughly sprayed with arsenate of lead. No sales winter apples, summer apples 60 to 75c per bu. Grapes one-fourth crop. No peaches, and late cherries selling at $1.40 to $1.50 crate.—I. W. W.

Rome, Ga.—Very few commercial apple orchards and crop not over 20 per cent, and quality of fruit medium. Some large orchards of early apples have been planted recently—G. H. M. & S.

Clayton, Ill.—Size of apple crop about one-quarter, but quality of fruit No. 1. Troubled with codling moth.—M. L. A. Co.

Blue Lake, Idaho.—Apple crop 100 per cent and quality of fruit good. Summer apples selling at $1.25 per box. Good crop all over the state.—I. B. P.

Quincy, Ill.—Apple crop about 40 per cent. Quality of fruit splendid in sprayed orchards, and indifferent in others.—C. H. W.

Alton, Ill.—Size of apple crop about 25 per cent. More insect injury noticeable than earlier in the season.—E. A. R.

Murphysboro, Ill.—Apple crop about 40 per cent, and fruit is fair to good. Condition of trees of winter varieties good, but summer apple trees blighted.—G. W. L.

Jerseyville, Ill.—Apple crop 10 to 15 per cent. Our 100-acre 14-year-old orchard about 4,000 barrels. Fruit is good. There is considerable dropping of fruit.—I. D. S.

Centralia, Ill.—Apple crop is less than 25 per cent. Quality of fruit is good where properly sprayed. Crop is generally a little better than last year. Grimes and Jonathan much better than Ben Davis.—W. S. P.

Vincennes, Ind.—30 to 35 per cent of an apple crop and quality of fruit fair. Summer and fall sorts show up better than winter sorts.—H. W. S. & S.

Villisca, Iowa.—Apple crop about 20 per cent. Fruit medium.—H. S. A.

Topeka, Kan.—Size of apple crop, east 10 per cent, south and central 50 per cent. The quality of fruit in the east is poor and excellent in south central. Some big crops in Reno and Sedgwick Counties.—W. H. B.

Edwardsville, Kan.—Apple crop is very poor, have about one bushel on 80 acres. Quality is poor. Wheat, corn and potatoes good.—E. T.

Wichita, Kan.—Apple crop 30 to 60 per cent. Grimes 60, Jonathan 40 and Davis 45, Maiden Blush 60 per cent. Fruit good. Apples selling at 60c. Think the speculator will find plenty of apples to buy.—E. G. H.

Wathena, Kan.—Apple crop 10 to 15 per cent, and quality of fruit fair.—J. B.

Holton, Kan.—Apple crop nothing to 25 per cent, and average about 10 per cent. Will be about 75 per cent of last year's crop. Fruit is medium. Prices very low considering size of crop.—F. W. D.

Brooks, Me.—Apple crop 10 per cent of full crop; 15 to 20 per cent of last year's crop. Quality of fruit good; 10 per cent of Baldwin trees dying. Hardy varieties fine. The drop has been heavy. Weather conditions seem very favorable.—H. W. L.

Ipswich, Mass.—Apple crop 40 per cent. Fruit good quality. Apples holding on well and are smooth and good for the odd year. Baldwin crop small and Russet and Greening especially large.—A. F. T.

Amherst, Mass.—Apple crop about one-half, perhaps less. Fruit fair to good. Shortage of rainfall. Other conditions normal.—F. A. W.

Watervliet, Mich.—Early apples 75 per cent and late apples (winter) not 5 per cent of crop. Fruit poor. Fungus apparent on foliage. Duchess selling for $1.00 parties to pick and haul. Southwest Michigan will have the lightest crop in years.—R. H. S.

Oregon, Mo.—Twenty-five per cent of an apple crop and fruit fair.—N. F. M.

Odessa, Mo.—Not over 10 per cent of a crop. A great many orchards without any apples.—S. H. P.

Lebanon, Mo.—Apple crop 35 to 50 per cent. Quality of fruit good. Apples extra large and smooth for this time of the year. Large enough to pack now.—A. T. N.

Columbia, Mo.—Apple crop 20 per cent and about the same as last year—J. C. W.

Koshkonong, Mo.—Apple crop 15 per cent.—T. M. C.

La Plata, Mo.—Apple crop about 15 per cent. Fruit fair where sprayed. Will hardly be enough apples for home demand.—J. E. M.

Richards, Mo.—Apples 10 per cent of full crop, but 30 to 40 per cent better than last year. Jonathans fair and other varieties poor. Ben Davis somewhat winter killed, but generally fine.—W. H. B.

Springfield, Mo.—Apple crop, 20 per cent. Ingrams by far the best. Fruit is wormy.—K. A. A.

Farmington, Mo.—Apple crop one-third of last year. But few commercial orchards in bearing in southeast Missouri. Quality fair. Some good Grimes Golden, Jonathan and Ben Davis. About one-fourth crop of peaches.—M. B.

Crete, Neb.—Twenty per cent of an apple crop. Quality fair to good. Selling at $2.00 per barrel.—E. F. S.

Tecumseh, Neb.—Apple crop not over 10 or 15 per cent. Quality fair. Apples are falling. Plenty of rain and cereal crops abundant.—W. G. S.

Fayette, N. Y.—Fifty per cent of an apple crop. Quality of fruit as good as usual. The June drop very heavy. in Baldwins and Greenings.—F. E. D.

Adams Basin, N. Y.—Apple crop smallest in nine years. About 20 per cent. Fruit where well sprayed is good. A great deal of rain and fruit has dropped badly.—C. O. B.

Jay, N. Y.—Not as large a yield of apples as last year. A little early to determine. Quality good at present. Early frosts injured blossoms on apple, pear and cherry trees.—H. T. S.

Rockwood, Ohio.—Apple crop 15 to 20 per cent. Less than last year. Fruit scabby, except where sprayed four or five times. Apples sold at $2.25.—U. T. C.

Yukon, Okla.—Apple crop one-third. Quality fair to good. Summer apples marketed 75c to $1.00 per bushel.—A. S. P.

Portland, Ore.—Apple crop 50 per cent (about 500 cars.) Quality first class.—G. H. I.

Forest Grove, Ore.—Apple crop 75 per cent. Prices good. Pears and grapes will be full crops.—W. R. H.

Northeast, Pa.—Apple crop 15 per cent.—A. I. L.

Harrisburg, Pa.—Apple crop: Baldwins, 50 per cent; Spy, 25 per cent; King, 75 per cent; Smokehouse, full. Quality fair on sprayed trees. Apples for home trade selling at $1.00 per bushel. Neglected orchards show no fruit.—G. H.

Chattanooga, Tenn.—No comercial apple orchards. Small orchards complete failure.—C. N.

Van couver, Wash.—Apple crop about one-third. Damaged badly by codling moth. Quality of fruit below the average.—F. S. F.

⚜ ⚜ ⚜

Of Interest to Fruit-Growers.

We call special attention to the advertisement of the Sherman Heath Canners Co., of St. Louis, Mo., on page 4 of this issue. We understand that some of our readers were under the impression that this company sold canning outfits, but this is not the case. They have fine facilities for selling **canned goods,** the **product** of canning factories and will assist in locating new canning factories. Read the ad. and write for full information.

Currant Cuttings

We offer for Fall a fine lot of Currant Cuttings, 6 to 8 in. long of following varieties: Pomona, Wilder, Red Cross, White Grape, White Dutch, London Market, Fay's, Cherry, Versailles, North Star, Victoria and Red Dutch.

Also 200,000 Gooseberry Cuttings: Houghton, Downing, Pearl Smith's and Red Jacket. 25,000 Orange Quince Cuttings. 50,000 Carolina Poplar Cuttings. 100,000 C. Privet Cuttings. 300,000 Grape Cuttings. With our usual supply, the best we ever grew, of

"EVERYTHING IN SMALL FRUITS."

Splendid stock of Rhubarb from seed and divided roots. Asparagus, Horse Radish, Holt's Sage, etc.

Let us quote prices, please.

W. N. SCARFF, NEW CARLISLE, O.

BUDS PRICES LOW

Cut from "Selected" bearing trees. All leading and best new kinds. **Plant Johanna and Mam-Yellow Heath Peaches. Salesmen wanted at Sunnyslope Nursery**

WILL S. HALL, Prop. Hannibal, Mo.

FRUIT FARMS AND FRUIT LAND FOR SALE

This department is for the benefit of Fruit-Grower readers who wish to buy, sell or lease farm lands. All advertisements of this nature will be inserted for a charge of 2 cents per word, each initial and number to count as a word. No display type will be used in ads which are accepted at this reduced rate, and all charges must be paid in advance. The rate of 2 cents per word is for each insertion. Count the words when sending your advertisement, and the cost can be easily ascertained.

THE FRUIT-GROWER CO., St. Joseph, Mo.

Virginia Homes

You learn all about Va. lands, soil, water, climate, resources, products, fruits, berries, mode of cultivation, prices, etc., by reading the VIRGINIA FARMER. Send 10c for 3 months' subscription to

Box A54 FARMER CO., Emporia, Va.

Attention FARMERS and RANCHMEN

Are you looking for a home in a mild and beautiful climate where fruits, grains, grasses and vegetables grow and yield large returns; where the grazing season is long and the feeding season short; where the waters are pure and the soil rich? Then come to Marshfield, Webster Co., Mo., and let me show you. I have improved stock and grazing farms, ranch lands and fruit farms. Write and tell me what you want and I will send you full description with prices and terms.

FRANK M. HAMEL,

Marshfield, Webster County, Missouri.

GIVEN AWAY

Here is 80 acres corn and cotton land, 1½ miles Alicia, Lawrence Co., Ark.; 25 acres plowed, balance good timber; old buildings. Price $400. $25 cash, $10 per month; your chance to buy good land cheap. Perfect title. "Lott The Land Man," 127 W. 8, Kansas City, Mo.

FOR SALE—163 acres 6 miles southwest of Sarcoxie, 3 miles to a railroad station, good 8-room house, barn 36x62 with large bay mow, good well and orchard, 143 acres in cultivation, mostly valley land, 20 acres in timber, close to good school and church, on rural route. Price, $50 per acre.

PIERSALL LAND CO., Sarcoxie, Mo.

REED & EVANS

Room 202, Baker Blk., Springfield, Mo.

REAL ESTATE AGENTS

Our specialty is the best improved farms in Greene and adjoining counties.

Millions of Strawberry, Blackberry, Raspberry Plants, Rhubarb Plants and Flower Bulbs. Send for Catalogue.

ALVA Y. CATHCART, Bristol, Ind.

WANTED

Manager for truck farm. A man who is familiar with the business of truck farming and understands the cultivation of peach trees. Must be thoroughly reliable and furnish the best of references. A fine opening for the right party. Address, stating experience.

C. H. WILSON,

314 Woodward Bldg., Birmingham, Ala.

SITUATION WANTED

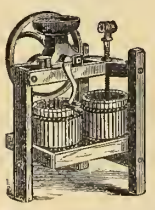
By man of 35, as resident foreman or manager of orchard in Southern or Southwestern Missouri; 10 years' experience. Address

FRUIT-GROWER, 596 Winthrop, Av. CHICAGO, ILL.

Commission Merchant

Wanted—Apples, Peaches and Grapes. Write me for prices. My advice and quotations are always conservative and reliable. I have a good market here for all kinds of fruit. Reference, First National Bank, Pipestone County Bank, or anyone who has shipped me their fruit.

C. C. BRUSH, Pipestone, Minn.



Farmers' Favorite

Cider Presses

(THE BEST)

4 gal. to 8 bbl. For particulars write **E. G. Mendenhall, Box 300. Kinmundy, Ill.**

FOR SALE OR TRADE for fruit farm, 300 acres improved, in Madison county, Texas. Particulars Box 247, Fort Smith, Ark.

FOR SALE—We now have a long list of bargains in Florida property. Florida has the finest climate in the world. For information address The Crescent City Realty Co., Crescent City, Florida.

CUMBERLAND PLATEAU—Finest pear region. For Sale: 40 Kieffer trees, heavily loaded; young trees, 33; Sudduth, Le Conte, Garber. Ten-room house; near church, school, store. T. S. GILLIS, Nat, Alabama.

FOR SALE—40-acre fruit farm, 2 miles from Olney, Ill.; 25 acres in good bearing apple trees, besides other fruit; near school and church; good 6-room house and cellar; new barn and out-buildings, all in first-class condition; plenty of good water. Price $2,650. W. A. WHEELER, Lock Box 299. Redlands, Calif.

FOR SALE CHEAP—A Colorado orchard containing 35 acres, quarter of mile from station. Twenty acres now in bearing—700 apple trees, 700 peach trees, few pears, fine varieties—in good condition, seven years old. Fifteen acres raw land. Good water right for the entire place; all for $4,000, easy terms. Write or call on H. G. Fletcher, Grand Junction, Colo.

We are the largest dealers in real estate in Grand Valley, the famous peach, apple and pear growing section of Western Colorado. Orchards here 8 years old net the growers from $500 to $700 per acre. The climate is the best in the world and is a specific for lung and throat troubles and asthma. Write us for information. The Home Loan & Investment Co., 357 Main St., Grand Junction, Colo.

A GOOD PLACE TO LOCATE—On plateau of Cumberland Co., Tennessee, where fruit, corn and potatoes grow to perfection. No cyclones, no floods, no great storms of any kind; less wind than any place you ever lived in; no mosquitoes; perfect natural drainage; best freestone water; very healthy, delightful summers; can plow all winter; abundance of free range for stock. Land $3 to $10 per acre. Write A. M. PAYNE, Crossville, Tenn.

LANDS CHEAP.

Large bodies of land and ranches; timber land, fruit and truck farms in Kansas, Oklahoma, Texas, Old Mexico, Louisiana, Arkansas, Southern Missouri, Colorado, New Mexico and California. Tell me what you want and where you want it and how much money you will invest if united and I will send you list of bargains of the kind you want in that locality. I also have small farms and ranches in all parts of said states. I am working above mentioned territory thoroughly. Write me and see how well and how promptly I will serve you. I have land at 35 cents to $35 per acre.

GEORGE W. MORRIS, LYNDON, KAN.

Fruit and Garden Farm with sub-irrigated celery garden for sale. Address I. W. WILLIAMS, Fairview, Okla.

FOR SALE—One of the finest sites for a large orchard in Northwest Arkansas. North slope; same soil and latitude as the famous Benton County, Ark., apple belt; 190 acres in tract; 120 fine for orchard; 140 fenced; 110 in cultivation; balance timber; timber enough to pay for place. Some alfalfa land; finely watered by springs and river. Beautiful building site. Good small house and other buildings. Would make a good stock ranch. One mile from R.R. station; 10 miles from Eureka Springs. Very healthy; $20.00 per acre. Will sell all or part. J. A. WALKER, owner, Grandview, Ark.

GOOD FARMS.

Fine 800-acre farm, Lafayette Co., Mo., 50 miles east of Kansas City, adjoining station on Mo. Pac. R. R.; 650 acres dry creek valley land; 150 acres upland; 40 acres apple orchard. Peach orchard of 500 trees. Two-story brick house, 12 rooms. Stone barn, 40x80, 12 miles new fence and other improvements. There is coal under the land. Worth more than $100 per acre. On account of recent death in the family price is reduced to $65 per acre.

1,000-acre farm, 35 miles west of Kansas City. Ideal grain, grass and stock farm. Soil is of rich limestone. Fenced in fifteen fields; finely watered; some timber. Write for price or come to see it. A snap for the man with money.

J. H. Lipscomb, 306 Fidelity Trust Bldg. Kansas City, Mo.

CASH

For your farm, ranch, home, or business, no matter what it is worth, or in what town, state or territory it is located. Our facilities are such that we can sell it, and sell it quickly.

Many years of experience in the real estate business, together with our extensive advertising in all parts of the country, enables us to quickly furnish cash buyers. Besides, we have special representatives throughout the country and in many of the larger cities who are at all times working in connection with us. Through our special facilities, combined with our thorough system of advertising, we get quick results, and in order to meet the heavy demand upon us by people who want to buy we must have more property listed with us at this time.

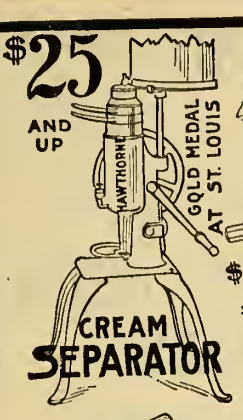
DO YOU WANT A QUICK SALE FOR CASH?

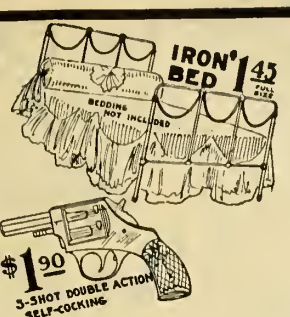
Then list your property with us at once. It matters not what kind of property you have, whether large or small, what it is worth or where located—if you want it sold quickly, write us, giving a brief description of what you have for sale, with your lowest cash price. Upon receipt of your letter we will immediately write you, telling you how and why we can quickly sell your property, together with our terms for selling it. Do not wait but write today.

TO YOU WHO WANT TO BUY

If you want to buy a farm, ranch, home, business, or property of any kind, anywhere, tell us what you want and where you want it. We can satisfactorily fill your requirements, do it promptly, and save you time and money. Furthermore, should you buy a property through us, and at any time within one year you find that it is not just what you want, we will re-sell it for you and not charge you one cent for our services. Write us your wants today.

N. B. JOHNSON & CO. 520 BANK OF COMMERCE BLDG. KANSAS CITY, MO.





1872 1905

Montgomery Ward & Co.'s
Big Catalog FREE

THIS NEW CATALOGUE, No. 74, for the season 1905–6, just from the press, is the largest in size and the most complete in contents of any general merchandise catalogue ever issued, and is filled from cover to cover with the lowest prices at which highest quality goods were ever sold. There never before was gathered into any one book so marvelous a collection of desirable goods of every kind at such money-saving prices.

Three million families—about ten million people—are going to save a lot of good money by having on hand and ordering their goods from this massive catalogue.

We know by past experience that those who make free use of it will save from $50.00 upwards during a year's time. We invite you to be one of them.

Our No. 74 Catalogue and Buyer's Guide is a Necessity

to the farmer, the planter, the miner, the lumberman, the hotel keeper, the railroad man, the teacher, the mechanic—in fact to **every** resident of the country, the large town, the village and hamlet.

Despite the great value of this mammoth catalogue to you and the large cost to us, to prepare, print, and distribute it, we shall **GIVE ONE COPY FREE** to every grown person who asks for it, provided he does not reside in a city of fifty thousand or more, or in Cook County, Illinois.

Everything you eat, wear and use is found in our No. 74 Catalogue in the highest grades, latest styles, best qualities, standard makes and absolutely honest values, at the very lowest prices.

You take no chances in buying from us. We refund your money, if, for any reason whatever, you are not satisfied.

The prices in our No. 74 Catalogue are uniform and the same to all alike—the rich and the poor. We do not **raise** our prices when we deal with the wealthy, nor can those in moderate or poor circumstances do better for themselves anywhere than to buy at our established, printed prices—the **fairest** prices in the world, because they are **low** quotations, on **high quality goods.**

REMEMBER—No such offer as this was ever before made you. We offer you the Genuine, Up-to-Date Montgomery Ward & Co. large Catalogue without a penny's expense to you. This is no partial list, no incomplete book, but the largest, newest, complete Catalogue—just off the press.

A Word About Ourselves—Our establishment comprises seven large buildings, covering more than fifty acres of floor space. We are the **original, largest** and **most favorably known** Catalogue House in the world. We have a successful record of a **third of a century** to which we refer with pride. Our customers are our **friends,** and they are found the world over. We have honestly acquired our reputation for selling goods of **quality** at **fairest** prices, such as no other concern has been able to meet.

We absolutely refuse to sell **snide** goods or **trash** at any price.

Montgomery Ward & Co.'s New No. 74 Catalogue comprises 1200 large pages, full of accurate illustrations and truthful descriptions, without exaggeration or misrepresentation. It describes over 126,000 articles, such as everyone uses every day—just such goods as **you** use, but of highest quality and lower price than you can obtain them in your home stores or anywhere else but of us. We have heretofore asked everyone to send us fifteen cents to partly pay postage, as a guarantee of good faith, but we will NOW **give** you a copy absolutely without charge of any kind—delivered at our expense—providing you show you desire to possess it, by just **writing** and **asking** for a copy. That's all we require. Do you want it? Do you want to **save** part of your **necessary** expenses? Do you want to get some things that you cannot secure near home? This large, complete, up-to-date, No 74 Catalogue makes it possible and easy for you to own, use and enjoy many things of which you have frequent need, but which the usual prices asked by others have compelled you to do without. **Get this Catalogue** and consult it **freely** and **often.** Those who **use** it most **save** the most.

Cut here, fill in carefully, and send to Montgomery Ward & Co., Chicago

Send me FREE and prepaid one copy of your New No. 74 Catalogue for 1905-6.

I saw your adv in Western Fruit-Grower R. F. D. No.——

Name ——

Post Office ——

County—— State——

Send your name and address carefully written on a postal card, or in a letter, or attached to your next order—or fill out this coupon. Either way that is easiest. Just say "Send me free and prepaid one copy of your new No. 74 Catalogue." Do this **now.**

Montgomery Ward & Co., Michigan Ave., Madison and Washington Sts., Chicago

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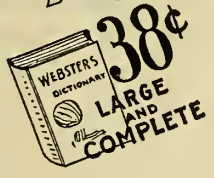
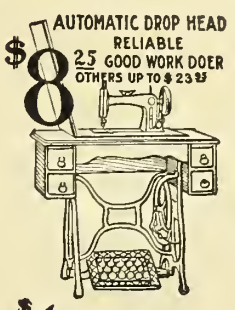
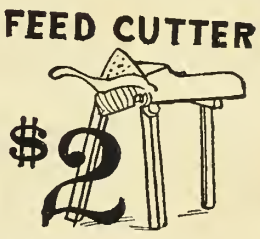
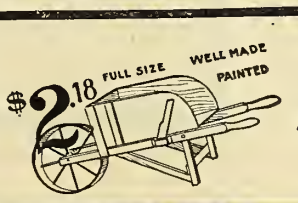
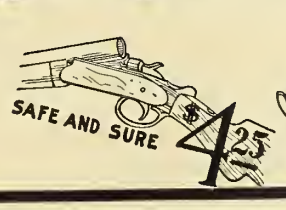
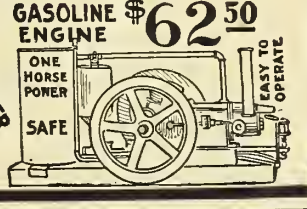












Ivory Soap as an Insecticide.

For some time many of the florists have been using Ivory soap as an insecticide to destroy aphids and kindred insects, this method having been found very effectual and at the same time has not harmed the plants. The editor of The Fruit-Grower this season has used strong suds made of Ivory soap to destroy green lice on pansy and heliotrope plants, and in both cases the remedy was effectual. So extensive has become the use of this soap that the manufacturers have issued a card giving the formulas for different purposes. Three formulas are given, which we quote from the card:

Formula No. 1—One pound Ivory soap, 25 gallons of water. Shave soap very thin and dissolve in one gallon of boiling water. When dissolved, add twenty-four gallons of cold water and use at once. In small quantities use one ounce of Ivory soap dissolved in a pint of boiling water, adding one and a half gallons of cold water. This formula is a sure cure for aphis, thrips and red spider. It is adapted to roses, carnation, violets, chrysanthemums and plants with leaves of similar texture. It may be sprayed on, care being taken to see that it reaches the under side. Rinse with clear, soft water after spiders and eggs are killed.

Formula No. 2—One-half pound Ivory soap, one-half gallon of boiling water, 16 gallons of cold water. Prepare and use as in formula No. 1. Begonias, fuchsias, ferns and all tender and bulbous plants may be sprayed or dipped in this without injury to foliage. Rinse in clear, soft water half an hour after applying. Very useful as a preventive.

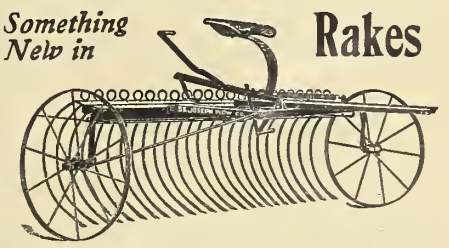
Formula No. 3, Ivory Soap Emulsion—One pound Ivory soap, one quart castor oil, four ounces carbonate of soda, one gallon of boiling water. Shave soap thin and add with carbonate of soda to the boiling water. When perfectly dissolved and boiling, stir in the castor oil. It will keep indefinitely in a tightly covered tin can. Dilute with from twelve to twenty parts of water, according to species of pest and plant. The emulsion may be thinned with a little hot water before adding the cold water. Use it (without diluting) to paint the stalks of hardy roses and shrubs and trunks of trees infested by ants and other insect pests. Apply with a brush. Ants are routed by first spraying with the diluted emulsion, then painting stalks, as above, with pure emulsion. If the nest can be found, dilute the emulsion with ten parts of boiling water, make holes in the hill with a pointed stick and fill with the scalding solution. Spray cabbages, melons, cucumbers, etc., with Ivory soap emulsion, diluted ten to fifteen times, for cabbage worm, plant lice and vine bug.

Of course, in using any of these formulas it is understood that the insects must be touched with the solution, for the insecticide is for only those which are killed by contact and which take their food by sucking.

The Loganberry in Nebraska.

S. W. Christy, Brownville, Neb., recently sent The Fruit-Grower a sample of his crop of Loganberries. This fruit has been advertised for some time, and Mr. Christy says he believes the fruit will be a success in the Missouri Valley. He secured his plants from California a little over a year ago, and they passed through a temperature of 34 degrees below zero, with a slight covering of leaves. The Loganberry is said to be a cross between the Cuthbert red raspberry and a blackberry; the fruit has the color of the Cuthbert and the shape of a blackberry; it is of good size and not so many seeds as the average blackberry. The berries are somewhat acid, of good flavor, and are a favorite for canning purposes in California. Mr. Christy believes the berry has a future as a market crop.

Something New in **Rakes**



Low Wheels Especially adapted to orchards. Will pass under trees better. Hay will not wind in them. They are stronger. Has spring lift. Write for prices.

ST. JOSEPH PLOW COMPANY, St. Joseph, Mo.

Poultry Department

Poultry Manure for the Garden.

The value of poultry manure as a fertilizer depends largely on the food fed to the stock producing it and also upon the method employed in saving the dung. Under ordinary conditions, where the birds are well fed, hen manure, while not as valuable as guano, possesses a greater value as a fertilizer than ordinary barn manure. In tests made by one of our leading experiment stations it was estimated that with a large well fed flock the amount of droppings produced per hen per year amounted to about 30 pounds, which contains approximately about .8 of a pound of nitrogen, .5 of a pound of phosphoric acid, .25 of a pound of potash and having a valuation based on the value of commercial fertilizers of about 14 cents. As a considerable part of the manure consists of decomposed nitrogenous matter it is necessary that some good absorbent be used for preserving the dung for use as a fertilizer. As it is ordinarily stored by simply scraping the droppings from beneath the roosts and dumping it into barrels, much of the nitrogenous matter is lost. There is also considerable unavoidable loss in the droppings which are voided during the day when the fowls are not at roost, which amount phobably exceeds that of the night droppings.

For ordinary purposes of preservation land plaster or pulverized gypsum should be freely sprinkled over the droppings and thoroughly mixed with them before they are stored in barrels. If land plaster is not available, good loam or dry muck will answer admirably. Sandy soil has bery little value as a preservative of poultry manure.

The droppings should be stored in a cold, dry place until they are needed. To avoid loss it is advisable to clean off the droppings boards once a day, as such practice is also much better for the fowls, it is also a wiser course, because when large accumulations of droppings are allowed to remain on the roosts the escaping ammonia is a source of discomfort and injury to the fowls as well as a loss in the fertillzing value of the dung.

Nearly all authorities agree that hen manure is of much more value as a plant food than ordinary farm manures and this is due to the fact that its nitrogen is in a much more available form. When used in the garden it should be applied in small quantities as compared with other manures.

Besides land plaster or loam, a mixture of kainite and sawdust in the proportion of about 15 pounds sawdust, 54 pounds kainite to 50 pounds of hen manure, it is claimed will keep the dung in excellent condition, so that it can be readily broken up for use as fertilizer. Hen manure which has been stored with the simple addition of land plaster or loam should be mixed with wood ashes before being used as a land dressing. Some experienced gardeners recommend that for every bushel of a mixture of hen manure and loam, equal parts, one bushel of wood ashes be added. This mixture is moistened a little occasionally and turned over frequently to fine it before using. It is claimed that this makes a powerful forcing manure which should be used sparingly in drills.

The Maine experiment station recommends the following as a well balanced fertilizer:

30 pounds hen manure.
10 pounds sawdust.
16 pounds acid phosphate.
8 pounds kainite.

It states that this used at the rate of two tons per acre would furnish about 50 pounds nitrogen, 85 pounds phosphoric acid and 80 pounds potash.—P. T. W. in Reliable Poultry Journal.

How to Dress Poultry.

It will soon be time to dispose of the old hens, which should always be done when they cease laying along in the summer, and surely before the early pullets get ready for the laying business in October, says Practical Farmer. We have usually tried to sell our hens alive at this time. It seemed to be the most convenient way for us, which is not saying that it is always the best way for others. In many cases, undoubtedly, the hens must be killed and dressed, especially where they are sold directly to consumers. For our home market, we prefer to kill the birds by chopping their heads off with an ax and then scalding the carcasses in order to get them dressed most expeditiously. The only fowls we kill by sticking in the mouth, and which we pick dry, are capons. To those who prefer to kill birds by sticking in the mouth and to pick them dry, the directions given by S. V. Thomas in a little pamphlet, "How to Dress Poultry," will be of interest. He says: "After tying up the birds by the legs, take hold of the wings and lock them. This can be done by bringing one over the other and catching the tip of the upper wing under that of the lower. This will make it impossible for the bird to extricate itself and will allow the dresser free use of both hands. Then in the left hand grasp the head firmly and force the bill open by the use of the thumb and middle finger. After you have a secure hold, thrust the blade down the throat just behind the head and draw it across, with the point slipping along the neck or backbone. This will sever the jugular vein and insure a good 'stick.' Now withdraw the knife and allow the bird to bleed for a few moments, then place the point of the knife against the roof of the mouth with the cutting edge toward the left hand, and force it through the membrane into the brain cavity, turn it three-quarters of the way around, twisting the wrist in the natural way, and then draw the blade directly across the base of the brain, thus severing the spinal cord and thereby destroying the control which, in life, the bird has over its feathers. With a few trials this method will become quite easy and you will find the feathers almost ready to drop off. As soon as the brain has been pierced, the dresser should turn the knife into the skin of the lower bill and make a hole through which a hook suspending a weight of some kind should be hung (a horse shoe, attached to a piece of strong wire, is excellent)—this keeps the neck extended and assures a thorough bleeding, which is all important. When scalding is found necessary, melt a little resin in the water, and the birds in only long enough for the water to penetrate through the feathers into the flesh. This should also be done when you desire to remove the small feathers of ducks and geese. Never allow the head or legs to be touched by the water, for it takes all the color out of the former and leaves the latter raw and anything but attractive. Catch the bird by the head and legs—dip it in the water two or three times—then pick quickly and do not rub any more than absolutely necessary." When dressing capons, we have made it a practice to suspend a 2-quart tin pail from the lower bill, in place of the horse shoe as here advised. The pail is kept half filled with bran or meal. This becomes soaked with the fowls' blood and thus serves as a rich meal for laying hens or growing chicks. It is one good way to save and utilize the blood that in most cases is wasted.

BY EXPRESS PREPAID $2.50
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All Wool Black or Blue
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Many other Patterns at Various Other Prices
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AGENT WANTED in every Town.
We help our agents to make big money. Write at once.
PROGRESS TAILORING CO.
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A Busy Year

for Old Trusty. Last season was a hummer, but we've got our breath and are going to keep going.
SUMMER PRICES ON
OLD TRUSTY
for a few months. It will be a good time to outfit. Same machines, same selling plans.
40 Days Free Trial, 5 Years Guarantee.
Have you ever seen my catalogue? It is Free.
INCUBATOR JOHNSON, Clay Center, Neb.

LOSS BY LICE
on poultry amounts to many times the cost of Lambert's Death to Lice—the sure preventive. Loss can be saved and profit made by its use. Frees sitting hens from lice without barming eggs or chicks. A trial 10c box will prove it. 100 oz., by express, $1.00.
O. K. STOCK FOOD CO.,
D. J. Lambert, Vice-Pres.
436 Monon Bldg., Chicago, Ill.

The National Fruit Grower
ST. JOSEPH, MICHIGAN

A large, handsomely printed monthly magazine devoted to the fruit industry. Ably edited. Every issue full of good things. Latest and best methods of cultivation, handling and marketing all kinds of fruits. Articles from the best horticultural writers appear in its columns. WORTH TEN TIMES ITS COST.
TERMS:—50c. per year; $1.00 for 3 years. Trial 3 months for 10c and 3 names and addresses of live fruit growers. Sample copy free.
Please mention paper in which you saw this ad.

The CHEAPEST FARM LANDS
In the United States today—soil, climate, markets, transportation facilities and all considered—
Are SOUTHERN LANDS
They are the best and most desirable in the country for the truck and fruit-grower, the stock raiser, the dairyman and the general farmer.
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M. V. RICHARDS, Land & Industrial Agent, Southern R'y. and Mobile & Ohio R'y, Washington, D. C.
CHAS. S. CHASE, Agent, 722 Chemical Bldg., St. Louis, Mo.
M. A. HAYS, Agent, 225 Dearborn St., Chicago, Ill.

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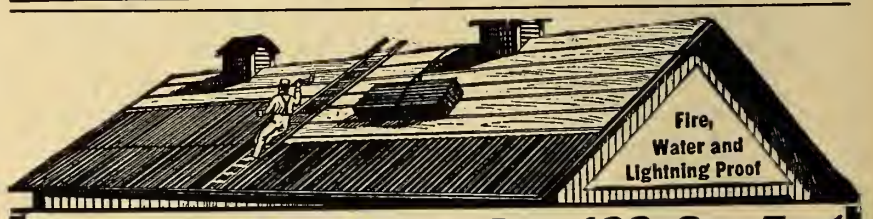
St. Joseph and Kansas City
DOUBLE DAILY SERVICE, with new 80-foot Acetylene Gas Lighted Pullman chair cars (seats free) on night trains and Pullman high-back seat coaches on day trains, between Kansas City and St. Joseph, Mo.; Hiawatha, Seneca, Marysville, Kan.; Fairbury, Fairfield, Hasting and Grand Island, Neb.
Connections made at Kansas City for all points East, south and West.
At Grand Island direct connections are made with Union Pacific fast trains for California and the Pacific Northwest.
S. M. ADSIT,
General Pass. Agent, St. Joseph, Mo.



Steel Roofing, $1.50 Per 100 Sq. Feet
Painted red both sides; most durable and economical covering for roofing, siding or ceiling, for barns, sheds, houses, stores, churches, cribs, poultry houses, etc.; easier to lay and cheaper than any other material; no experience necessary to lay it—a hammer or hatchet the only tools you need. At this price WE PAY THE FREIGHT to all points east of Colorado, excepting Oklahoma, Texas and Indian Territory. At this price we furnish our No. 15 semi-hardened flat steel roofing, sheets 24 inches by 24 inches. At $1.60 this same material corrugated as shown in illustration, or in "V" crimped, or standing seam. At 50 cents per square advance over above prices we will furnish this material in 6 and 8 feet long; $2.25 for brick siding or beaded ceiling or siding. Send us your order for immediate shipment. Time will prove its enduring qualities. It withstands the elements the best of all coverings. Ask for further particulars. WRITE FOR FREE CATALOGUE NO. A. M. 399 on building material, wire, pipe, plumbing material, furniture, household goods, clothing, etc. We buy at SHERIFFS' AND RECEIVERS' SALES. 100,000,000 feet of lumber from the World's Fair.
CHICAGO HOUSE WRECKING CO., 35th and Iron Sts., CHICAGO, ILL.

Fox and Wolf Hounds

of the best English strains in America; 40 years' experience in breeding these fine hounds for my own sport. I now offer them for sale.
SEND STAMPS FOR CATALOG
T. B. Hudspeth, Sibley, Jackson Co., Mo.

HOMESEEKERS, I have traveled over Missouri, Kansas, Oklahoma, Indian Territory, Texas and located in N. W. Arkansas, adjoining Indian Territory; this beats them all for health, water, fruit, grain; for prices and particulars, inclose stamp. J. T. OSWALT, Gravette, Arkansas.

GOOD AGENTS WANTED

GRIND SMALL GRAIN AT HOME
Don't pay out grinding charges having a large amount of grain ground at the mill, which grows stale before being used. The
Black Hawk Grist Mill
grinds wheat, rye, rice, coffee, apices, and in fact all small grains, fine or coarse as desired, either for table or farm use. You can grind as much as you need for your immediate wants, thus insuring fresh ground grain at any time. The Black Hawk not only pays for itself by saving grinding charges, but is a constant money-maker for you. Poultry raisers find the Black Hawk invaluable for cracking corn. The mill is simple in construction, easily taken apart, cleaned and set up. The grinding-plates are of hardest metal, all the bearings are chilled, and the long malleable iron crank makes grinding easy. All parts are interchangeable and can be replaced at any time. Sent prepaid on receipt of $2.00
A. H. PATCH, Sole Manufacturer, CLARKSVILLE, TENN.

Kill the Wooly Aphis
This is the insect which works on the roots of apple trees, causing the death of thousands of trees yearly. Woolly Aphis can be readily destroyed by spreading tobacco dust about the roots of trees. In addition to killing the insects, tobacco dust is a valuable fertilizer—indeed, it is worth what it costs as a fertilizer alone.
WE SELL TOBACCO DUST IN ANY QUANTITY
Also Fertilizers of all kinds—THE ANCHOR BRAND
WRITE FOR PRICES
MAYER FERTILIZER & J. COMPANY
BULWER AND ADE ADE AVENUES ST. LOUIS, MISSOURI

Opportunities to Grow Rich
Do you care to know of the MARVELOUS DEVELOPMENTS now going on in the GREAT CENTRAL SOUTH?
Rich Farming Lands, fertile, well located, which will produce, two, three and four crops each year can be purchased at low prices and on easy terms.
The section promises to be the greatest Fruit and Vegetable producer in the United States, and growers receive large returns each year. For further, or detail, information, write
G. A. PARK, General Immigration and Industrial Agent,
LOUISVILLE & NASHVILLE R. R. CO.
LOUISVILLE, KY.

A Square Deal.

The National Nurseries of Lawrence, Kansas, have a motto that is sure to be appreciated by everyone doing business with nurserymen. "Square Dealing" is building up a large business for this firm, who assure their salesmen and customers the highest satisfaction in their business relations. This house has a large staff of salesmen who are employed the year round on liberal commissions and good salaries. During the early fall and winter months they desire to increase their force of salesmen and any one who is interested should investigate their offers.

To Keep Cider Sweet.

I see in July Fruit-Grower the question asked for a way to keep cider sweet and not be injurious to the stomach. This is the method I have tried and know it to be good: Take fresh sweet cider, strain carefully to get all the pomace out (as it is the pomace that causes the cider to sour), then for an ordinary sized cider barrel full of cider, take one common tumblerful of unground mustard seed and about the same amount of good strong horseradish cut in strips; put them in the barrel with the cider. Your cider will then keep sweet and not injure digestion.

C. C. B., Colorado.

Anthracnose of Raspberries.

A subscriber of The Fruit-Grower asks about spraying raspberry plants with Bordeaux mixture for anthracnose. Dr. Whitten advises the following treatment for this disease:

"As soon as the old raspberry canes have fruited, I would advise pruning them out of the patch and spraying immediately with a weak Bordeaux mixture, using two pounds of copper sulphate and two pounds of lime to fifty gallons of water, as a stronger spray than this may injure the raspberry foliage. The main spraying, however, should be done in very early spring, just before growth begins. At that time a strong Bordeaux mixture should be used, using six pounds of copper sulphate and six pounds of lime to fifty gallons of water. This will not injure the canes when they are dormant. The aim should be to have the new canes and the ground all around them thoroughly covered with this Bordeaux mixture at the time the plants begin growth. As soon as the plants make a good start in spring, I would also spray with the weaker Bordeaux mixture."

Want a California Home?

The San Joaquin Valley of California is sparsely settled, the land is rich, producing grapes, figs, oranges, alfalfa and all sorts of grains and fruits. You can go there with small capital and make a comfortable, paying home. Read about it in the illustrated book, "The San Joaquin Valley," sent for 10 cents to any address by the Southern Pacific, Dept. H, San Francisco. Low Colonist Rates to California from Sept. 15 to Oct. 31, 1905.

California Opportunities.

If you want a comfortable home where the climate is mild and "everything grows," read the book, "The Great Sacramento Valley of California," sent for 10 cents by the Southern Pacific, Dept. I, San Francisco. Write today, and visit California on the low rate Colonist Tickets sold from Sept. 15 to Oct. 31, 1905.

Apple Boxes.

There is an unusual demand for apple boxes as a package for shipping apples. The cost of the box is much cheaper than the barrel, consumes less space, handled more easily, much more desirable for the grocer, and in every respect an ideal way of handling apples. These boxes contain one bushel and sell from ten to twenty-five cents more per bushel than if packed in a barrel.

The difficulty heretofore has been the proper material for boxes, but the material used by the Northern Box Manufacturers' Agency of Kansas City, Mo., is of the best northern white pine. Their announcement appears elsewhere in this issue of The Fruit-Grower. It will be to your interest to write to them for full particulars relative to their apple box and melon crate.

Young Men, Here Is Your Chance.

You possibly have been thinking of learning a trade. In what business could you engage in by which you could make more than in the barber's trade, and which you can learn in about six weeks' time at a trifling cost, and make from $15 to $25 a week, and receive commissions while learning? The Kansas City Barber College of Kansas City, Mo., whose ad appears elsewhere in this month's issue, offers a special proposition to young men who wish to learn the barber trade if you will enter the school during the summer months. Write to them, mentioning this paper.

HOMESEEKERS' EXCURSIONS

If you want to visit Oklahoma, New Mexico, Arizona, Texas or any of the other sections of the Southwest in which fruit-growing is becoming such an important industry, investigate the low rate made by the

Santa Fe Route

ON FIRST AND THIRD TUESDAYS OF EACH MONTH.

The Santa Fe reaches every part of the Southwest, and with its frequent and well equipped trains and splendid roadbed, is best prepared to serve the public. For circulars or any desired information, address

W. J. BLACK, G. P. A., Topeka, Kan.
L. O. STILES, C. P. & T. A., St. Joseph, Mo.

Agricultural AND Horticultural Colonies on the Kansas City Southern Railway

Lockesburg Colony in Sevier County, Arkansas, containing 30,000 acres, and Loring Colony in Sabine Parish, Louisiana, containing about 24,000 acres, are now open for settlement. Lands range in price from $7.00 to $15.00 per acre, and are sold on easy terms to actual settlers. Lockesburg Colony is well suited for general farming, stock raising and commercial fruit-growing. Loring Colony lies in a splendid fruit, truck and tobacco region and is good for corn and cotton also. Both are situated in a beautiful country, with a healthy climate and excellent water. Write for books concerning Lockesburg and Loring Colonies and "Current Events" Magazine to

S. G. WARNER, G. P. & T. A., K. C. S. Ry., Kansas City, Mo.
F. E. ROESLER, Immigration Agent, K. C. S. Ry., Kansas City, Mo.

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The Southern Pacific Tourist Car service is famous for its excellent equipment. If going West, investigate this way of travel — you'll be surprised when you find how cheaply you can go, and still travel in comfort.

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Write today for California literature and full information. Address,

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Asthma

CURED TO STAY CURED.

Attacks stopped permanently. Cause removed. Breathing organs and nervous systems restored. Symptoms never return. No medicine needed afterwards. 21 years of success treating Asthma and Hay Fever. 58,000 patients. Book 35F Free. Very interesting.
Write P. Harold Hayes, Buffalo, N. Y.

We supply everything in the nursery line. Our prices are way down. Price List Free.

Augustine & Co., Nursery

Normal, Illinois.

They grow 30 BUSHELS of WHEAT to the acre in the SOUTHWEST

The Southwestern farmer grows 30 bushels of wheat to the acre on $10 land. A year from now this same land will be worth $15 an acre, and it will increase in value each year, as the population grows, until it will soon sell for as much as land in Illinois or Iowa.

Wouldn't *you* rather have a 1000 acres in the Southwest than a 100 acres in Illinois, if the land is just as good?
Wouldn't *you* rather have a whole section in the Southwest, without a mortgage, than 80 acres in Iowa with a heavy mortgage?
Wouldn't *you* rather own a farm in the Southwest than pay the cost of one each year for rent in Ohio?
Wouldn't *you* rather see your boys own a big farm in the Southwest, than to have them stay on *your* small farm in Indiana?

If you would like to know more about the Southwest, send for a free copy of our illustrated book. Also tell us what you would want if you moved to the Southwest. We will help you find the very place. The Frisco lines traverse the most fertile sections of the Great Southwest, and while we have no land of our own to sell, we can place you in touch with perfectly reliable men who have.

A trip to the Southwest is not expensive. Homeseekers' tickets at about half the usual rates are sold via Frisco System, first and third Tuesdays of each month.

FRISCO SYSTEM

ALEXANDER HILTON, Gen'l Passenger Agent, Frisco System
919 Frisco Building, St. Louis, Mo.

TRUCK AND FRUIT LANDS ALONG THE IRON MOUNTAIN ROUTE

IN ARKANSAS AND LOUISIANA HAVE PASSED THE EXPERIMENTAL STAGE, AND IT IS POSSIBLE FOR ONE TO PAY FOR HIS FARM IN ONE YEAR'S CROP AND STILL HAVE A RESERVE FUND TO CARRY HIM TO THE SUCCEEDING YEAR. $5 TO $10 PER ACRE IS THE PURCHASE PRICE. THE MAN OF SMALL MEANS SHOULD BUY NOW AND SECURE THE BENEFIT OF AN EXCELLENT INVESTMENT.

THIS IS THE RAILROAD WHICH CARRIES YOU TO INEXPENSIVE AND COMFORTABLE HOMES—

CLIMATE IDEAL.
FARMING AND STOCK RAISING THE YEAR AROUND.
4—TRAINS DAILY FROM ST. LOUIS—4

QUICK TIME, BEST SERVICE, SPECIAL HOMESEEKERS' RATES, AND FREE RECLINING CHAIR CARS.

THINK THE MATTER OVER, AND WRITE US FOR LITERATURE AND DETAILED INFORMATION.

H. C. TOWNSEND,
GENERAL PASSENGER AND TICKET AGENT.
ST. LOUIS, MISSOURI.

Opening of the Uintah Indian Reservation

DENVER & RIO GRANDE R.R. — SCENIC LINE OF THE WORLD

The Uintah Indian Reservation in Utah, containing 2,425,000 acres of arable land, to be opened up for settlement on September 1st, 1905, is described in a pamphlet just issued by the Passenger Department of the Denver & Rio Grande Railroad Company. A valuable map, showing the country to be opened and the various routes by which it can be reached, is published for the first time in this pamphlet, which may be obtained by addressing General Passenger Agent

S. K. HOOPER,
At Denver, Colorado.

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NO MONEY TILL CURED. 27 YEARS ESTABLISHED

We send FREE and postpaid a 232-page treatise on Piles, Fistula and Diseases of the Rectum; also 108-page illus. treatise on Diseases of Women. Of the thousands cured by our mild method, none paid a cent till cured—we furnish their names on application.

DRS. THORNTON & MINOR, 1003 Oak St., Kansas City, Mo. and 3969 Olive Street, St. Louis, Mo.

EYE AND EAR BOOK FREE

Tells of a Method by Which People, From Every State in the Union as well as Canada, were Cured of Chronic Eye and Ear Troubles at Their Own Homes by Mild Medicines.

Most of these cases had been pronounced incurable by other doctors, but they wrote for this book, followed its advice, and today are cured.

Blindness and Deafness Prevented and Cured

This book is written by Dr. F. G. Curts, the famous Eye and Ear Specialist. Tells how all diseases and defects of the Eye, such as Failing Eyesight, Cataract, Granulated Lids, Scums, Sore Eyes, etc., may be successfully treated by the patient in their own home. No necessity of seeing a doctor and no interference with daily duties. Tells how deaf people, except those born deaf, may be restored to perfect hearing. Tells how to quickly relieve and cure Distressing Head Noises, Ringing and Buzzing in the Ears, Discharging Ears and Catarrh (which causes most cases of deafness).

This book tells all about the Mild Medicine Method used by Dr. Curts, which has restored sight and hearing to scores of supposedly incurable patients in every State. There is scarcely a neighborhood in America in which he has not one or more cured patients. The Mild Medicine Method makes it unnecessary to submit to an operation for any Eye or Ear trouble

CROSS-EYES STRAIGHTENED IN ONE MINUTE

$500 will be paid by Dr. Curts for any case of Crossed or Turned Eyes that he fails to straighten in one minute without pain or chloroform. His method never fails, and when he straightens eyes they remain straight. No need of persons afflicted with this humiliating deformity to go through life in this condition.

NAMES OF SOME PATIENTS CURED

Of Eye or Ear Troubles by the Mild Medicine Method Described in This Book.

CURED OF DEAFNESS—Frank Ferris, Mt. Washington, Mo.; Mrs. S. J. Highfill, Peabody, Kas.; Ex-Sergt. S. S. Stewart, 422 Yuma St., Manhattan, Kas.; H. Rosenkoetter, R. F. D. 34, Florisant Sta., Mo.; Henry R. Warren, 36 Penn St., Pittsfield, Mass.; Mrs. Sallie Brown, Micro, N. C.; J. D. Mashburn, Orus, Ga.; Rev. P. C. Newell, Oil Center, Ky.; Chas. Frank, 350 Ash St., Argentine, Kas.; Emma Hochhalter, Evansville, Ind.

CURED OF CROSS-EYES—Harry McCauley, 1603 Ritner St., Philadelphia, Pa.; Edward Woodlock, Roswell, N. Mex.; J. G. Blaine, Pratt, Kas.; R. J. Connery Quincy, Ill.; Jas. Hollisy, Liberty, Mo.

CURED OF OPTIC NERVE TROUBLE—Mrs. J. E. Scobey, 704 W. 11th St., Kansas City, Mo.; Maude Pittman, Ottawa, Kas.; Mrs. R. B. Gibbs, Morrill, Kas.; Chas. C. Edwards, Wellsboro, Pa.

CURED OF CATARACT—Mrs. John L. Harlan, 117 Colborne St., Battle Creek, Mich.; D. J. Ballenbaugh, North Canyonville, Ore.; Mrs. F. M. Martin, 118 Cherry St., Benton Harbor, Mich.; A. W Rupel, 124 E. 4th St., Chillicothe, O.; Mrs. M. E. Mitchell, 407 Independence Ave., Kansas City, Mo.; J. A. Moorman, Raymond, Ind.; M. M. Pullen, Evergreen, Ala.; Mrs. A. M. Rollins, Bebee, Ind. Ter.; Mrs. Cora Nevins, Cayuga, Ind.

CURED OF CHRONIC GRANULATED LIDS.—Dr. S. G. Wright, Connelsville, Mo.; Jas. Sampson, Grass Valley, Calif.; Emma Tangner, Dock, Minn.; J. J. Ray, Hathaway, Tenn.; Josie Vetter, Rulo, Nebr.

Dr. Curts makes the following statement to the readers of this paper: "My entire professional life has been devoted to the treatment of diseases of the Eye and Ear. I have probably treated more cases and been more successful than any other living doctor. The larger portion of my patients I have never seen. By the aid of the Mild Medicine Method, I am able to treat my patients as successfully as though they were to come to my office. I believe that any person having any Eye or Ear trouble should read my book, which I will gladly send free to any afflicted one. It will bring to them tidings of great joy. It will show how easy it is to regain perfect sight and perfect hearing. No matter how serious your affliction—no matter what other treatments you have tried—no matter what other doctors may have told you—write for my book; it will cost you nothing, and will tell how you can be cured at your own home."

In writing please mention this paper. Address,

DR. F. G. CURTS,

525 Gumbel Building, KANSAS CITY, MO.

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Northwest Edition

Trade Mark—"Brother Jonathan"

September, 1905
Vol. 16, No. 9

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DR. F. G. CURTS,
The Great Eye and Ear Specialist.

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In writing please mention this paper. Address,

DR. F. G. CURTS,
538 Gumbel Building, KANSAS CITY, MO.

Bro. Jonathan Series of Fruit Books

Last spring a series of booklets on fruit culture was issued by The Fruit-Grower, the series being called "The Brother Jonathan Series." Five booklets were issued at that time, as follows:

"Propagation of Trees and Plants," by Prof. W. L. Howard; "A Treatise on Spraying," by Prof. J. M. Stedman; "How to Grow Strawberries," by Dr. J. C. Whitten; "The Home Garden," by Prof. Howard and E. H. Favor; "Packing and Marketing of Fruits," by Prof. F. A. Waugh.

These booklets are illustrated, and hundreds have been sold throughout the country. They sell at 25 cents each, or the set of five for $1, postpaid.

At the time this first series was printed, we announced that later a new series would be ready, treating of different subjects. We are pleased to announce that the

New Series Will Be Ready Soon

This new series will include booklets treating of "Stone Fruits," "Grapes," "Bush Fruits," "Helps for the Orchardist," and "Pruning of Trees and Plants."

This new series will be uniform in size with the first series, and will sell at same price.

How to Secure Any of the Booklets Free

While the booklets sell at 25 cents each, any person who is a regular subscriber of The Fruit-Grower can secure a book free by sending one new subscriber at the regular rate, 50 cents per year. Of course the entire set, or both sets, can be secured on the same basis. The subscription must be paid in advance, to entitle to the premium.

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Alfalfa, three crops, 5 to 7 tons. Oats, one crop, 40 to 90 bushels, machine measure.
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Ivory Soap is made of the best materials that money will buy. It will not injure the finest fabric or the most delicate skin. Use it for every purpose for which only a pure soap should be used.

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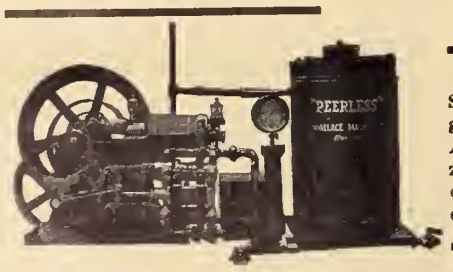

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Southwestern Passenger Agent,
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The Western Fruit-Grower

An Illustrated Monthly Magazine For Progressive American Farmers.

Volume Sixteen ST. JOSEPH, MO., SEPTEMBER, 1905. Number Nine

The Northwest as a Fruit Country

For five weeks, in July and August, the editor of the Fruit-Grower was in the northwestern states, visiting orchards and looking over the work which is being done in developing the fruit industry in that part of the country. This number of The Fruit-Grower contains some illustrations made from photographs secured on the trip, together with articles which were secured at that time.

No one who has seen the fruit exhibits of Colorado, Idaho, Oregon, Washington and Montana at the various expositions which have been held within the past fifteen years can doubt that these states are fast forging to the front as fruit-producing sections. The orchardists of these states have been found among the most progressive of any of the fruit-growers of the United States, and as a result their apples, pears, cherries and prunes have been found in all our markets. When these growers in the newer states began to grow fruit in commercial quantities they profited by many of the mistakes which their Eastern brethren had made, and now our Easterners can well afford to study the ways of some of their Western competitors. Perhaps we should say here that when we say "Easterners," we mean everyone east of the Rocky Mountains, for that is the interpretation given this term by the fellows in the far West. Missouri, to them, is an Eastern state, and so are Kansas, Nebraska, etc.

One of the first things which the growers in the Northwest learned was that they must care for their trees, so that the very best fruit possible could be produced; they knew that when their fruit comes on market it will have to pay high freight charges and will have to compete with fruit grown nearer to market, and therefore only the best fruit could be profitably marketed. As a result, it is doubtful if apple trees, for instance, are as carefully sprayed in any part of the United States as they are in Oregon, Washington and Idaho, and in parts of Colorado and Montana.

In most of these states the law requires that orchards be kept in good condition, free from insect pests and fungous diseases. Orchard inspectors are appointed for various parts of the state, the duty of these inspectors being to visit the various orchards of his district, to see that the law is being complied with. The laws of the various states vary somewhat, and it is our understanding that it is not sufficient for an orchardist to report that he has sprayed his trees a certain number of times; he must show that his work has been effective. While The Fruit-Grower representative was at Missoula, Mont., he talked with a gentleman who had a few apple trees in his yard in town, perhaps a dozen trees all told. The fruit inspector, on his rounds, had visited these trees and found evidences of the work of the codling moth, and he at once notified the owner that the trees must be sprayed and other steps taken to destroy the infected fruit. The law of Montana provides that if the owner does not spray the trees, the inspector shall have the work done, and the cost of the work is charged against the property in the form of taxes. The charge for spraying, we were told, is 10 cents a tree, when the work has to be done in this way. Of course, an orchardist can spray his trees for much less than this, but it is doubtful if the man in town could do so, and in this case the inspector was told to see that the trees were properly sprayed, and the owner would pay the bill.

This instance is given, merely to show the care which is being taken to hold the insect pests in check. An orchardist who grows fruit for market is compelled, by the very law of competition, to use every means to produce good fruit, and the man who grows fruit for home use only is not allowed to keep an orchard which serves as a breeding place for enough insect enemies to infest every other orchard in the county. Not a bad provision, as the results show.

Another thing which has been learned by the apple-growers of the Northwest is that careful grading and packing of their fruit is absolutely necessary. In the various articles in this issue, referring to the different fruit sections, this fact is set forth, and some of their methods are explained, but it is safe to say that apples which come from the states under discussion in this article are better graded and packed, as a rule, than the fruit from any other states, considering all the friut which is marketed.

Another factor which has entered into the success of the apple-growers of these states is that they have found that certain localities are adapted to certain varieties, and these are the ones they grow almost exclusively. At Hood River, for instance, many varieties of apples succeed remarkably well—Baldwin, Jonathan and others grow to wonderful perfection. Yet these varieties grow equally well, or perhaps better, in other parts of the country, so that Hood River Baldwins would have to compete with this variety from New York, and Hood River Jonathans would have to compete with as good, or better, Jonathans from Colorado Missouri, Iowa, Illinois, Arkansas and Kansas. But at Hood River two other varieties are grown which cannot be grown in every other part of the country—Newton Pippin and Spitzenburg—and therefore these varieties are being grown almost exclusively there, and the newer orchards will always contain a large percentage of these varieties.

This is one of the things which the horticultural leaders are endeavoring to impress on the minds of growers everywhere—to grow those varieties of fruits of all kinds to which their soil, location, climate, etc., are especially adapted. This campaign of education is a slow matter—notice how, in spite of this, the Ben Davis apple, for instance, has been planted all over the country—but these Northwestern growers have learned the lesson early, and are profiting by it.

Still another factor in the success of these growers in the Northwest is their system of organization. Nearly every locality has a strong organization for the marketing of fruits—at least, every locality where the best results have been obtained has such an organization, and here again we can well afford to study the methods of our Western brethren.

In reading the articles in this issue of The Fruit-Grower, therefore, we hope our readers will consider, for their own good, some of the factors which have entered into the success of the fruit-growers of the Northwest. For they have been successful very successful—some of the stories in this article sound like fairy tales, yet the writer is a Missourian, and, true to the traditions of the state, had to be taken to many of the orchards, where he could see for himself just what is being done.

We should attribute much of the success of the Western growers, then, to the following four points

1. They try to find varieties which reach the highest degree of perfection under the conditions which exist in their orchards, and then grow these varieties almost exclusively.

2. Having selected the right varieties, they endeavor to grow the finest fruit which can be produced, and to this end they spray and cultivate their trees very carefully.

3. After the fruit has been produced, it is carefully graded and packed, honestly marked, and sold on its merits.

4. To secure the best prices for their fruits, the growers have formed strong organizations for the marketing of their produce, and through this co-operation they have been wonderfully successful.

These articles were not written to boom the Northwestern country, for we have nothing to sell in that section, but solely with a desire to give the members of The Fruit-Grower Family the benefit of some points which were picked up in a five weeks' trip through a section where fruit-growing has been very profitable.

Barn Yard Manure.

An expert chemist has made the statement that an empty wagon with a one hundred pound bag of the highest grade commercial fertilizer as a cushion on the driver's seat, will contain more soluble and available plant food than four thousand pounds of stable manure of good average quality. Stated in other words, two tons of good stable manure will contain no more of the available food elements of plant life than one hundred pounds of high grade fertilizer. The ordinary farm yard manure consists not alone of the excrement of the farm animals, but has the bulky addition of corn-stalks, straw and other roughage used as bedding, often including sawdust.

Since living in a district where onions are extensively grown, and which require the best of fertilization, I have observed each winter the hauling of hundred of tons of barn manure by these growers, who pay the regular price in the surrounding villages of $2.00 per ton for material which for months has weathered under the eaves of barns, subject to the drenching (and consequent leaching) of every storm. Many of these loads appear to be but a small percentage of manure, but composed mainly of discolored straw and other bedding material, which I would not like to give 50 cents a ton for. It is true that this straw, used as bedding, absorbs the liquid matter, and therefore, if properly treated, is a valuable fertilizing agent, but any such material, subject to the conditions of weather, to frequent washings of rain, and other outside influences, must in consequence become of little value as a fertilizer.

In one ton (2,000 pounds) of good farm manure there are three to four pounds of ammonia, five pounds of phosphoric acid and five pounds of potash. In two thousand pounds (one ton) of a strictly high grade fertilizer, which I have used as a top dresser, there are 240 pounds of ammonia, 160 pounds of phosphoric acid and 80 pounds of potash. If we allow that one-half of the phosphoric acid and potash in the manure is soluble and available (which in many cases it is not), then it will be seen that in soluble ammonia the fertilizer is over sixty times stronger, in phosphoric acid thirty-two times and sixteen times in potash.

An experiment upon land at Rothamsted, England, gave the following result: For thirty years wheat was grown continuously on one field. Six thousand pounds of nitrogen per acre in the form of farm manure produced an average of thirty-six bushels of grain and forty-eight hundred weight of straw per acre per year, but the yield was equally as good where only 2,400 pounds per acre of nitrogen in the form of sulphate of ammonia had been used. Thus it will be seen that from the manure 3,600 pounds of nitrogen was lost by leaching in the air, or was unavailable in the soil. It was stated that the average loss per acre each year of nitrogen amounted to nearly 120 pounds. This would mean a loss per acre for each of the thirty years from $16 to $20. Hence the importance of applying soluble and available plant foods when they are needed. The farmer who has an abundance of barn manure can certainly make no mistake in applying it to his soil. There is a wide difference in the character of these manures, depending greatly upon the material used for feed. Ammonia most frequently overbalances the other two elements, as has been shown at our principal experiment stations, and the supplementing of phosphoric acid and potash in an available form will give far better results than when the manure is used alone. This is a widespread experience. Manure is a nitrogenous fertilizer, containing the other elements also, but in my own experiments I have found that most root crops, corn and other grains require the addition of the mineral elements, that is, potash and phosphoric acid.

Ohio. E. A. SEASON.

$1.00 a Year After January 1st, 1906

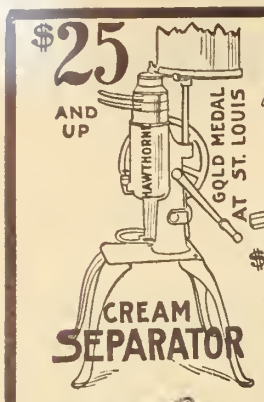
WE AGAIN wish to impress upon all members of The Fruit-Grower Family the fact that after January 1st, 1906, the subscription price will be advanced to $1.00 a year. All present subscribers may at any time between now and that date pay in advance for from one to four years, and we hope that all of our readers whose subscriptions have expired, or are about to expire, will take advantage of the present low rate.

Inspect the date tag on the wrapper in which this paper is mailed, and if it reads September, '05, or any previous date, it signifies your subscription has expired.

THE FRUIT-GROWER CO., SAINT JOSEPH, MO.

J. D. Youll, Missouri Valley, Iowa, sends his renewal to The Fruit-Grower, and says: "I want no premium and will not take advantage of an opportunity to get the paper cheaper. I will pay $1 for The Fruit-Grower when the rate is advanced, and will consider it cheap."

A report from the Michigan State Horticultural Society gives the percentage of orchards which are sprayed in eight counties. The highest percentage given is 48, in Allegan County, ranging down to 5 per cent in Oakland County. The average for the eight counties is 27 per cent.



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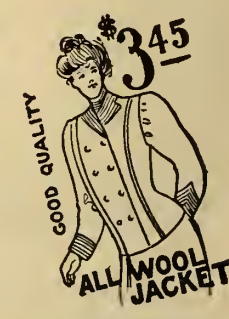

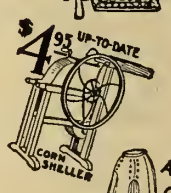

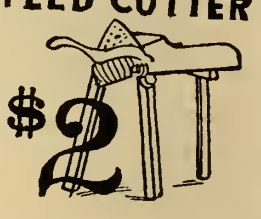

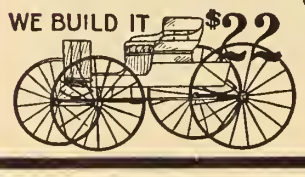

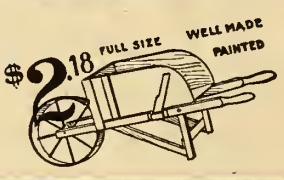

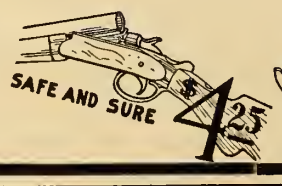

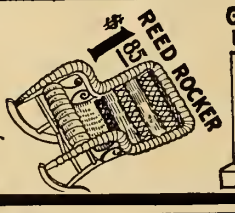

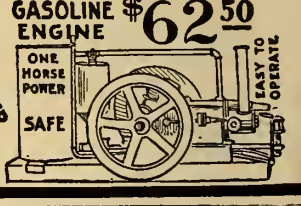

Grand Junction, Colo.

This place is one of the best-known of Colorado fruit centers. Part of this is due to the very effective organization among the growers there. This association not only handles the bulk of the fruit grown at Grand Junction, but has branches in other points where fruit is handled under the direction of officers of the association. The manager also buys spraying material, boxes, etc., not only for members of the organization, but for others who wish to buy, and in this way quite a profit is realized.

At Montrose the apple crop is perhaps 50 per cent of full crop. The peach crop is very short, very little fruit being offered for shipment. However, at Palisade, only a few miles away, the peach crop is very heavy, and considerable of this fruit will be handled through the Grand Junction Association.

Grand Junction, too, has dreams of a new government "high line ditch," which will bring into cultivation about 70,000 acres of land. At present about 100,000 acres of land are under cultivation, most of it planted to fruit. To show the development of the fruit business at Grand Junction, we give the following figures showing the number of trees planted for the past five years:

1901	22,073 trees
1902	55,217 trees
1903	68,000 trees
1904	188,653 trees
1905	419,924 trees

In 1904 about 2,000 carloads of fruit were shipped. Growers are prosperous. Jonathan is perhaps the favorite variety of apples grown, and one of the most profitable. Hoyt & Caswell have a very fine Jonathan orchard here, consisting of eight acres. One acre is said to have produced $1,400 worth of fruit in a single season. Orchards at Grand Junction, as at Montrose, are irrigated.

The Fruit-Grower representative is indebted to Mr. Marsh of the Home Loan & Investment Co., and to Mr. Wm. Bomgardner. The latter has about twenty acres of fruit, in good condition. Mr. Bomgardner has one of the oldest apple orchards in the neighborhood, and we show the trunk of one of these old trees, to show the strength and vigor of it. Mr. Bomgardner, at the time of our visit, was marketing the last of his cherry crop. Cherries do very well, both the sweet and the sour sorts.

To Land Agents and Homeseekers.

The Chicago Great Western Railway will, on the first and third Tuesdays of each month to December inclusive, sell round trip tickets at only one fare plus $2 to points in the following states: Alabama, Arizona, Arkansas, Colorado, Florida, Georgia, Indian Territory, Kansas, Kentucky, Louisiana, Mexico, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New Mexico, North Carolina, North Dakota, South Dakota, Tennessee, Texas, Utah, Wyoming and Virginia, also to Alberta, Assiniboine, Canada Northwest, Manitoba, Western Ontario and Saskatchawan. For further information apply to M. F. Montgomery, City Passenger and Ticket Agent, 414 Felix street, St. Joseph, Mo.

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Every M. & G. blade is hand-forged from razor steel, file tested, warranted. This cut is exact size of 75 cent strong knife. We will send you one for 48c; 5 for $2, postpaid. Best 7-in. shears 60c. This Knife and Shears, $1. Pruning, 75c; budding, 35c; grafting, 25c. Send for 80-page free list and "How to Use Razor."

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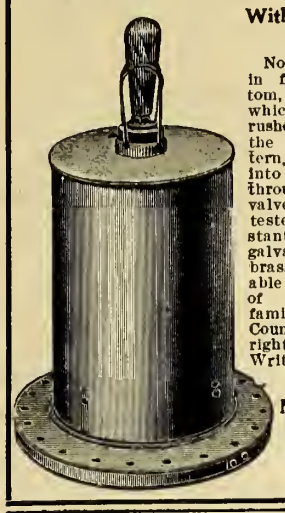
Clean and Purify the Water in Your Cistern

With Moremen's Cleaner



Note perforation in flange at bottom, through which the water rushes into filth at the bottom of cistern, forcing it into the cylinder through bottom valve. Thoroughly tested and substantially made of galvanized iron, brass and malleable iron. Price of cleaner, with family right, $5. County and state rights for sale. Write

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Warnock's Tree Paint

We experimented with our paint 5 years in our own orchards and sold it to our near neighbors for 3 years where we could watch it under different conditions. Every test proved our paint was absolutely safe, and entirely reliable as a preventive against Rabbits, Mice, Apple, Peach and Cherry Tree Borers, Canker Worms, Ants, San Jose Scale and Oyster Shell Bark Lice.

Encouraged by our paint's successes, and backed by hundreds of willing witnesses, two years ago we advertised it to the horticultural world. The results that have come to us justify us in saying we believe nothing has ever been offered to the orchardists that has been received with such general favor. If you want to know concerning these results write us for our circulars (the latest is dated August 9th, 1905), which contains the strongest testimonials freely given by parties who live in almost all parts of the United States. All we ask is intelligent investigation.

Our paint will do you more good than the money we ask for it will do us.

Patented January 10th, 1905. Agents wanted. Address

R. WARNOCK & CO.,
819 So. Cottage St., Independence, Mo.

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Placed between the rafters and studding of your buildings will keep out the cold of winter and the heat of summer. Send for free catalog and samples.

UNION FIBRE COMPANY,
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Manufactured by
The AUTO-FEDAN HAY PRESS CO.
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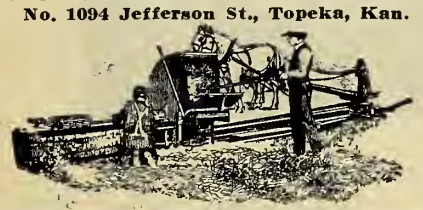

The only successful self-feed two-horse-power press made. Makes three strokes to the round. Feeder is attached direct to power, so it is bound to operate. TWO MEN CAN RUN IT. Is perfectly safe. Has a record for bailing over three tons in one hour. Satisfaction guaranteed.

THE THREE W. STRAWBERRY

Has beaten its record this year for productiveness, long bearing, beauty, firmness and size. Plants set last November bore abundantly the very finest berries. October planting will pay you, and you will see what this berry is.

W. A. MASON, CLINTON, KENTUCKY.

Yoder's Corn *and* Straw Tie

Will save you dollars. No farmer can afford to be without it. Small, light, durable. Will tie corn on the shock or corn fodder, straw or anything to tie in bundle. Can reuse a lifetime on your farms. Send 25c in U. S. stamps for 25 corn ties without strings. Delivered sample lot and agents' prices. Give your address plain. Mention paper you saw ad.

LEVI D. YODER,
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The Granger Gate and Hinge.
The Ozark Tree Paint.
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The Ozark Stock Food, and many other articles we make.
Ask for our Booklet and Circulars.
A postal card will bring them.
SEND TODAY.

Haldeman Mfg. Company, Springfield, Mo.

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ARCHITECT and ENGINEER
Designs for all classes of structures.
308 Century Bldg., Kansas City, Mo.

In Colorado Orchards

Leaving St. Joseph on July 17, the first stop was at Salida, Colo. This point is not a fruit section, but a stop was made there over night, to allow the ride over the mountains to be made by daylight. Salida is more than 7,000 above the sea level, and is tucked away in a beautiful valley, on the Arkansas river. Berries are grown to a considerable extent here, and do well, and we visited a small orchard, where Duchess, Wealthy and other apples of this sort do well. Jonathan, Ben Davis and other varieties of this type have been tried, but the altitude is too great for them to do well. Salida has little rainfall, and irrigation is practiced, water being taken from the Arkansas river. Nights are very cool, and the morning we were there a fire seemed very appropriate.

Salida is the junction point of the narrow gauge and standard gauge divisions of the Denver & Rio Grande railway. Between Canyon City and Salida one passes through the Royal Gorge, one of the scenic wonders of Colorado. If a stop is made over night at Salida, the narrow gauge train can be boarded the next morning for the ride over Marshall Pass. This is one of the greatest trips in America, the train winding its way, by tortuous process, to the top of the mountains, the "Continental Divide." The water in the streams which are encountered on the upward journey find their way into the Gulf of Mexico, but once the summit is passed, the streams all eventually find their way to the Pacific. This trip cannot be described; it must be taken to be appreciated. As the train begins its descent on the western slope a small stream is noticed near the track, sometimes on one side, sometimes on the other. It increases in size, as other brooks enter into it, and finally it becomes a formidable stream. This is the Gunnison River, one of the best streams for fishermen in the entire country. The stream increases in size until it is deep enough for trout, and hundreds of fishermen are seen, up to their waist in the clear water, casting for trout. All wave at the train as it passes, except occasionally one of the fishermen has hooked a fish, and he neither waves at nor notices the train—he attends strictly to business. Here is one who has just landed a nice trout in his landing net. He looks at the train, you can rest assured, with a broad smile on his face—literally, 'the smile that won't come off."

Passing through the Black Canyon of the Gunnison, the track passes over the range and descends into the valley. A stop is made at Montrose, a section which is becoming famous for its fruits.

It should be stated here that not all the fruit sections of Colorado were visited, nor were all the fruit sections of any of the states. Lack of time prevented this—and, besides, we wanted an excuse to make this trip again, when these places will be visited. Hotchkiss, Paonia, Canyon City, Rocky Ford, Delta, Palisade—all these, and more, are Colorado fruit centers, which were not visited on this trip. And they are well worth visiting, too.

BEAUTIFUL ORCHARD OF MR. PRICE, NEAR MONTROSE, COLO.
Note How the Water Is Applied—Cultivators Will Follow This Treatment.

At Montrose is located the largest fruit ranch in Colorado which is owned by a single individual. This is the John Ashenfelter ranch of 300 acres. Mr. Ashenfelter has a very complete farm, everything being in the best of condition. He uses gasoline engine outfits for spraying, and the work is thoroughly done. It is said he has refused an offer of $500 an acre for his 300 acres—and he was doubtless justified in this refusal, because of the earning power of the land. The apple crop this year is not large—not nearly so large as that of last year—and the peach crop is very short indeed.

Other orchards at Montrose were visited, among them that of Mr. Geo. L. Price, who has an excellent crop of fruit. A section of his orchard is shown in one of our illustrations. The trees shown are Grimes Golden, and while the fruit does not show up so well in the picture, the crop is a good one. The illustration shows the method of applying the water.

Montrose is expected to take great strides forward when the government tunnel is completed. This is a tunnel which is being driven through the mountains for a distance of six miles, to bring water from the Gunnison River. This tunnel will not be completed for several years, but when finished will water an additional 100,000 acres of land. The contract for this tunnel was originally awarded a contractor, who failed to complete the job, and Uncle Sam will finish it. The work is expected to cost about $2,500,000, and the cost will be charged to the lands which will be supplied with water.

Montrose growers have been a little slow in effecting an organization, and last year much of their fruit was marketed by the Grand Junction Association, as Grand Junction fruit. It is expected that hereafter this will not occur, the Montrose growers handling their own product.

The Fruit-Grower representative is under obligations to Col. Phil Peters for favors shown him.

STRONG TREE TRUNK IN ORCHARD OF MR. BOMGARDNER, GRAND JUNCTION, COLO.

Protect Trees

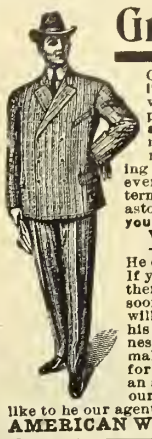
Worth planting, worth saving. Add ½c to the cost of your young trees and prevent sun scalding and blistering and keep off rabbits, mice and all kinds of tree gnawers, with the

HAWKEYE
Tree Protector

An elm veneer, easily put on and big enough to protect as long as protection is needed.

PRICES:
100 Wrappers - $0.60
1,000 Wrappers - 5.00

For circulars giving full particulars address
BURLINGTON BASKET CO.,
Box 111, Burlington, Iowa.



Great Suit Offer

Cut this notice out and mail to us and if we have no agent in your town we will send you **FREE**, by return mail, postpaid, **a big assortment of cloth samples**, fashion figures, cloth tape measure, order blanks, etc., and we will name you prices on men's fine clothing that will be so much lower than you ever heard of that it will surprise you; terms, conditions and privileges that will astonish you; **a free trial offer on a suit for your own use** that will make you wonder.

WE WANT A GOOD AGENT IN ——— YOUR TOWN. ———

He can make $1,200.00 to $1,800.00 per year. If you write us before we get an agent there **you will get a wonderful offer.** As soon as we get an agent in your town he will get a profit on every dollar we sell in his territory. We then turn all our business over to him. That's why our agents make so much money. If you want a suit for yourself, answer quick, before we get an agent there, and you will then get all our great inducements, or if you would like to be our agent tell us all about yourself. Address:

AMERICAN WOOLEN MILLS CO., Chicago.

A Straight Offer!

If you own land, we will furnish you 3,000 to 10,000 fruit trees at wholesale prices, and negotiate you a loan for $300.00 to $1,000.00 on ten years time, thereby helping the man without a dollar, to make $10,000.00 to $20,000.00. A low, annual interest is all you are asked to pay for ten years. We double the value of your farm and enable you to sell at a big advance in a short time, or, you are assured a big income for several years before loan matures.

We employ no agents, but deal direct with the planter. This offer applies only to Oklahoma, Arkansas, Missouri and Kansas and is good, only while the fifty thousand dollars, offered by the Loan Company lasts.

Write us today for full particulars. Address

The Gamble Nurseries
No. 9 Robinson St., Oklahoma City, Okla.

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this season. Hardiest peach we have. Comes true from seed. Passed through the severe cold of last winter and the late freezes and frosts of last spring, and now the whole orchard loaded with fruit.

For history and prices of trees, address

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All Kinds of Nursery Stock

for sale. 200,000 2-year Apple, 30,000 3-year Apple, at the lowest price.

G. W. TRIBBLE, BILLINGS, MISSOURI

Nursery Stock

We can fill your wants in Strawberry, Raspberry and Blackberry Plants, Grapes, Currants, Gooseberries, Trees, etc., for Fall or Spring delivery. Write us your wants and we will endeavor to please you.

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pulling stumps, grubs, etc., and clearing land for yourself and others. Hercules Stump Puller is the best.
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Fruit Culture in Boise Valley

Not everyone knows of the importance of Idaho as a fruit state—in fact, Easterners have a very vague idea of what this state produces in any line. But fruits are grown in abundance in Idaho, and good fruits, too. There are several fruit centers, but The Fruit-Grower representative visited only Boise and Payette, on the Oregon Short Line Railway. Some years ago a lot of grapes of such varieties as are grown in California were exhibited from Idaho, and even a person as well informed as Secretary of Agriculture Wilson would not believe they were produced in Idaho, at all, much less in the northern part of the state. Later, when on a trip through the West, he went out of his way to visit the section where the grapes were grown, that he might see for himself what is being grown there. The growing of the European varieties of grapes is very profitable in parts of Idaho, and the wine produced from these grapes is said to be superior to that produced from the California-grown grapes.

SPRING WHEAT—60 BUSHELS PER ACRE.

The first stop was at Boise, the capital of the state. Boise is one of the prettiest towns in the West, and one of the most substantial. It has about 16,000 population, and is thoroughly up to date. The people are progressive and hospitable. The streets are wide, many of them paved, and all are well kept.

The writer confesses that he was surprised when he reached Boise. After a day's ride through the sage brush plains, he was prepared to welcome a rest at any place, but one who has never been there before is hardly expecting such a city as Boise. We might hesitate to confess our ignorance concerning Boise as a city, but others have been frank to confess that they, too, were surprised. Here is what President Roosevelt said concerning Boise when he visited that city last year:

"I will make a confession. While I expected to find a thriving and prosperous city, I had no idea that I should find so beautiful a city as this. I wish it were possible to take the whole city around as an example from which many an older city in an older state could learn a lesson.

"I have been greatly struck as I came up this beautiful and fertile valley by what has been done by the application of industry, intelligence and water to the soil. . . . I have spoken already of my pleasure, and, I confess my surprise at finding how beautiful your city is, and that is not a small consideration. As we progress we ought to make our surroundings satisfactory to the senses. And you here who live out on the great plains and in sight of the mountains and rapid rivers, around whom nature is so beautiful, it behooves you to see that the handiwork of man adds to it and does not mar the work of nature. I congratulate you upon this tree-embowered city of yours and upon the pleasure, and, therefore, the good that must come with pleasure given to all who come within your limits and see it."

Perhaps no city in the Northwest has a brighter future than Boise. In the first place, Idaho is one of the states which has been overlooked to some extent in the western march. At present, however, the state is coming into possession of its own, and Boise is the center of development. The climate, in the first place, is equable. The winters are never cold, being tempered by the Chinook winds from the Japan current, and the mercury seldom reaches zero. The summers are long and at times the mercury registers 100, but the air is dry, with no humidity to render the heat almost unbearable, and sunstrokes are unknown. For 1904 the mean temperature was 53 degrees, the highest being 103, and the lowest 9 above zero. Last year 245 days were clear or partially cloudy, showing that the country is a land of sunshine.

One feature which was most attractive to the writer at Boise was a very fine swimming pool, which is known throughout all that country. This pool is supplied with water from some hot springs, the water from these springs being so hot that it must be cooled before one can stand the temperature. Indeed, this water is so hot that during the winter many buildings are heated with natural hot water, which is piped through the streets and furnished to heat private and public buildings. On reaching Boise after a very hot, dusty day, this swimming pool seems like an oasis in the desert.

The soil of the Boise valley is exceedingly rich. It is a volcanic ash soil, which produces wonderful crops with the application of water. This soil, too, retains its fertility. Not being subject to dashing rains, the fertility of the soil is not leached out, but only those elements which are taken by the growing crops are lost to the land. The long, cloudless days give the fruit grown in this section a very high color and rich quality. Nearly 150 cars of fresh prunes and over 150 cars of apples were shipped from Boise last year, and the apple industry is yet in its infancy. Anjou pears which were shipped from Boise last year broke the record for prices on New York markets, some of the fruit selling for $9 per box.

Timothy and clover are the favorite hay crops, alfalfa being also grown. The yields are heavy, and on account of the cattle and sheep which are kept on the open ranges in the mountains during the summer, prices for this hay are very good, for feeding to this stock during the winter.

Boise has a very energetic Chamber of Commerce, which looks after the interests of the community, in the way of presenting its advantages to the visitor. The writer met Mr. W. T. Booth, president of this organization, and he said that he knew of no country which offered the attractions which the Boise Valley does to fruit-growers.

"The men who are engaged in growing fruit here," said Mr. Booth, "are making money, but the fruit industry is yet in its infancy. It is not an untried proposition—growers can know what can be done here by seeing what has already been accomplished. And we are going to have room for thousands of settlers, too. In addition to the lands we already have under irrigation ditches, the United States government has taken up the Boise-Payette irrigation scheme, which will cost about $10,000,000 and put about 350,000 acres more fertile soil under cultivation, a tract of land capable of supporting a greater population than that of the entire state at the present time. At present it is sage brush land, tenanted only by coyotes and jack rabbits, but it will be occupied by thousands of happy, prosperous homes ten years from now.

"There are about 100,000 acres of land in this valley watered by existing canals and partially cultivated. These lands can be purchased at from $50 to $100 per acre, the price dependent considerably on distance from the various towns.

"Five and ten-acre tracts adjacent to Boise vary in price from $150 to $300 per acre. Similar fruit lands the same distance out of Canyon City, Colo., bring from $500 to $1,500 per acre, and the results obtained from Boise fruit lands would justify the Colorado prices. Mr. Waite delivered to a groceryman last year 13,080 boxes of strawberries grown on one acre of ground in the suburbs of Boise, and received therefrom $1,002.80. A well attended orchard yields from $100 to $300 per acre per year.

"BILLOWS OF HAY" IN THE BOISE VALLEY.

"Boise is bound to grow, with all of this land brought under irrigation," continued Mr. Booth. "The authorities in charge of the government irrigation bureau say that every acre of irrigated land should support at least one person, and that being the case Boise should be the center of a population of 500,000 people. This does not mean, of course, that one person will be living on every acre of irrigated land, but simply that, taking the homes in the country and in the cities which are supported by the country, this population will be supported. Boise is the natural trade center for a section 400 miles square, and this will all be peopled by persons who intelligently farm small tracts of land."

Further, in regard to the city of Boise proper, it may be said that it has good schools and churches, and it is a city of beautiful homes. The legislature has made an appropriation of $416,000 for a new state capitol building, and the United States government has appropriated a half million dollars to improve the army barracks at this place. A new line of railroad is projected from Butte, Mont., to San Francisco, and will doubtless be built, which will give Boise a line of railroad to splendid markets for farm produce, among the mines of Montana, and also to the export port of San Francisco. By this new line Boise will be 400 miles distant from Butte and 570 miles from San Francisco. By existing lines it is 435 miles from Salt Lake City and 500 miles from Portland.

Of course, farmers are wanted to settle the lands tributary to Boise, but splendid openings are offered to manufacturers. Water power is abundant and cheap. Timber is abundant—indeed, Idaho has 20,000,000 acres of the finest white pine and fir timber in the world. This is said to be more an Minnesota and Wisconsin had when the timber was first cut for lumbering, and is a tract three times as large as the state of Massachusetts.

At Boise The Fruit-Grower representative was taken in charge by Mr. Fremont Wood, one of the members of The Fruit-Grower Family. Mr. Woods is a lawyer by profession, but is also largely interested in fruit culture, having one of the prettiest and most profitable orchards in all that country. We visited his place, as well as a number of other orchards in that vicinity. Mr. Woods is president of the Idaho State Horticultural Society and a member of the Northwest Fruit-Growers' Union, and the care his orchard receives speaks well for the teachings of these organizations.

"Jonathan and Rome Beauty are our most profitable apples," said Mr. Woods, in answer to our question. "We can grow Ben Davis here also, but do not believe we can make our best money by doing so. Our Jonathan and Rome Beauty take on a very fine color, and the fruit is of excellent quality. Some growers fail with Jonathan by not picking it at the proper time, but where the variety is properly handled it is in every way desirable."

"Do you grow the Newtown Pippin or Spitzenburg?" was asked, for we had in mind the prices which Oregon growers receive for this fruit.

"We are trying the Newtown Pippin here," was the reply, "and so far our experience has been satisfactory. We are also trying the Grimes Golden, which does so well over in Colorado. This variety also seems very promising here. I have a lot of Ben Davis trees which were sent me by mistake, and these are all being worked over into Newtown Pippin and Jonathan."

Speaking of top-working, we were shown some trees which had been worked over, and which are now bearing a good crop the third year after the top-grafts were put in. Not only in this orchard, but in many others, were found many trees which were top-worked. Grafting was used as the method in every case. At the Ashenfeiter farm, near Montrose, Colo., we saw an entire orchard which had been worked over, and a handsomer orchard we never saw. In Mr. Wood's orchard the grafts which were inserted last spring had grown seven to eight feet, the new growth being an inch in diameter at the base.

On the trees in the orchard were the evidences of the thorough work which had been done in spraying. Mr. Wood prefers the Disparene, or arsenate of lead as an insecticide, on account of the fact that the mixture sticks better and does not require the agitation that paris green does. Most

of the growers are now preferring this insecticide, and the same was found to be true among the Colorado orchardists.

At Boise, as at the other orchards visited up to this time, the orchards are all watered. Asked as to how long the water is allowed to run in the furrows, Mr. Wood replied that usually the orchardists allow it to run a day and night, which will give the soil a good soaking. Then the cultivators are started as soon as the soil is dry enough to work.

"Does the orchard which is irrigated need such thorough cultivation?" was asked.

"Some growers make the mistake of trying to make irrigation take the place of cultivation," Mr. Wood said, "but this is not the best method, by any means. The orchards should be given clean cultivation, so that the trees will need the minimum quantity of water. The trees will make better growth and the fruit which is produced will be of better quality.

MR. FREMONT WOOD'S OLD ORCHARD.
Note the Clean Cultivation in Both Orchards.

In talking with other growers we found that the best authorities agree that as little water as possible should be used, and the cultivation should be frequent and thorough, so that water in the soil should be conserved. The novice in irrigation usually uses too much water. If a little is good, more should be better, he seems to reason, and he almost floods the ground with water. But as he acquires experience, he will use less water, and use the cultivator more and more.

We present some illustrations which show the cultivation and treatment which Mr. Wood gives his orchard. One illustration shows a young orchard, mostly Jonathan trees. These trees are planted about thirty feet apart, and, as shown in the illustration, no other crop is grown among the trees. When the trees need water, furrows are run, as is illustrated in another article in this paper, and the water applied. When the water is turned off and the ground has dried out a little, the cultivation is begun. Disc harrows and cutaways are run crosswise of the irrigation furrows, and this treatment is followed by running the Acme harrow crosswise of the marks made by the harrows. Notice, in the picture of the young orchard, how the dust mulch is formed by this treatment.

In the older orchard, the irrigation furrows had been run in an oblique direction, to get the proper fall to the land, but when the harrows were started they were run down the rows, and then crossed with the Acme. We have never seen an orchard which has had better cultivation than these two belonging to Mr. Wood, one a young one and the other in full bearing. The condition of the latter speaks well for this method of cultivation.

This orchard has a good crop of apples, not an extremely heavy crop, by any means, but many of the trees have all the fruit they should bear, and most of them have more than half a crop. Last season Mr. Wood's crop consisted of about 2,500 boxes of fancy fruit, besides what was made into cider and vinegar. This year the crop will likely exceed 3,500 boxes, and the fruit will be of very fine quality. At the time of our visit it was a very hard matter to find an apple with a worm, and all were as smooth as a peeled onion. On July 25 there were plenty of Jonathan apples on the trees which measured two and three-quarters inches in diameter, and they were just beginning to take on a little color.

Mr. Wood does not believe in marketing any but fancy apples, and has therefore arranged to utilize the other grades at home. He has put in a cider mill, and last season made about a hundred barrels of cider, which is now being turned into vinegar. For a long time Mr. Wood has studied this matter of utilizing the by-products of apples, and is experimenting with cider and cider vinegar. He now has several hundred gallons of cider which was made last fall, and which will be marketed about the time it is two years old. This cider has fermented, the fermentation being hastened as much as possible. It is more than likely what the French call "apple wine," perhaps, than it is like what we know as cider. Mr. Wood says he has sold a considerable quantity of this cider for use by invalids. Doctors prescribe it as being more nourishing and beneficial than grape wine or the unfermented grape juice. Mr. Wood has handled this cider in such a manner that it is as clear as can be, and he will bottle it and sell at fancy prices. His cider vinegar will also be bottled and sold as guaranteed pure cider vinegar, for which there is a good market at good prices.

MR. WOOD'S YOUNG ORCHARD.

Pears also grow well in the Boise valley. One of the most profitable pear orchards we heard of on this trip belongs to Mr. Horace C. Myers, a photographer, who lives in Boise. Mr. Myers has given this three-acre Anjou pear orchard the very best of care. The other growers say he has literally nursed the trees, but it seems to have paid him remarkably well. Last season the crop from his three acres of Anjou pears brought him $3,200. Most of the fruit was sold in New York, where, on account of its fine quality and attractive appearance, some of it sold for $9 per box, and all of it brought fancy prices. A section of

PART OF PEAR ORCHARD OF MR. HORACE MYERS, NEAR BOISE, IDAHO.
(From Three Acres of Trees $3,200 Worth of Fruit Was Sold Last Year.)

The Old Attic Tank

means sagging beams, cracked ceilings, frequent leaks and repairs, and no protection against fires.

The Kewanee Pneumatic Tank

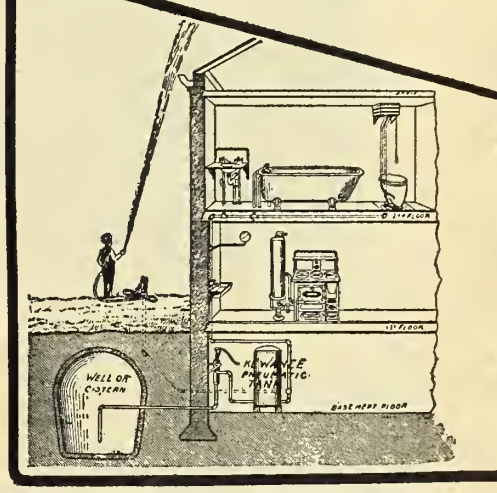
in the basement, delivers water through the house and grounds by force of compressed air. It cannot freeze or flood the house, and lasts as long as iron pipe. It will furnish water to kitchen, bathroom and laundry, and will throw a stream through a hose to a height of 150 feet.

J. H. Brouwer, Shenandoah, Iowa, writes: "The system works to perfection, has not cost a cent for repairs, and the insurance is now 25 per cent less than on similar risks where there is no fire protection."

Send for names of users in your own State and copy of our illustrated booklet showing outfits in operation, free if you mention this paper.

PNEUMATIC WATER SUPPLY CO.

Drawer D Kewanee, Illinois.



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We will make a Heavy Discount on Car Load Orders placed in our hands THIS MONTH

In Quality, Health and Conformation there is none better. Write today

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NEWTON'S Heave, Cough, Distemper and Indigestion Cure. A veterinary specific for wind, throat and stomach troubles. *Strong recommends.* $1.00 per can, of dealers, or Exp. prepaid. The Newton Remedy Co., Toledo, Ohio.

this pear orchard is shown in one of our illustrations, the picture giving one an idea of the care the trees have received.

Another of the illustrations shows a bunch of prunes as grown in the Boise valley, and still another shows how the apples are produced on the trees.

The soil about Boise is very rich when water is applied, but will produce nothing without this water. Near the city the market gardens are operated by Chinese gardeners, for the most part, and we present an illustration showing a section of the valley, with one of these gardens in the foreground. The picture cannot give one an idea of the beauty of the place, for the contrasting colors cannot be reproduced. The light shade of the cabbage and cauliflower beds, contrasted with the dark green of the celery and the parsnips, and

HOW THE APPLES GROW IN THE BOISE VALLEY.
Not a Sign of Codling Moth in These Well-Sprayed Apples.

the other shades of green which were presented by the other vegetables, made one of the prettiest pictures we have ever seen.

Small fruits are very profitable in the vicinity of Boise, and the prune future. A number of large irrigation enterprises are projected in the territory tributary to the city, which will all help to make it not only larger, but a much more important commercial center. Land immediately adjacent to the city is high in price, but some of the new lands which are be-

IDAHO PRUNES.

ing brought into cultivation by the extension of irrigation ditches are crop is an important one. The crop of this fruit this year is not so good as usual.

Boise is one of the growing towns of the Northwest, and has a bright very reasonable in price, as irrigated lands go.

Perhaps it might be well to explain why it is that the lands which are devoted to fruit culture in the Northwest are so much higher in price than we have been accustomed to paying in the Middle West—or in any other section, for that matter. Lands which have a good water right sell for prices carying from $100 to $1,000 per acre, according to improvements, and, as was explained to us, this valuation is determined by the earning power of the land. Good land which is adapted to fruit culture, which has a good water right, will be worth at least $100 per acre, if near other fruit farms, which make a center for the industry. This seems a high price to one who has been used to paying $30 to $75 per acre for lands, but the lands go readily at these high prices. One thing which will be found different in the irrigated country is that the farms will all be smaller than we have known them in the East. Forty acres is a good-sized farm, or "ranch," as they prefer to call them, and hundreds of the best fruit-growers have only ten to twenty acres. Irrigated farming means intensive farming, and one does not need as much land as most of our Eastern growers try to handle. The same is true of lands devoted to general farming. In the irrigated farming sections there are no very large farms. Where wheat will produce as high as sixty bushels to the acre, and three crops of alfalfa will produce six to eight tons per acre, only small farms are needed. In comparing the prices of this irrigated land with the prices which rule in other parts of the country, therefore, our readers must bear in mind that the farmer who practices irrigation cannot handle as large a tract as the one who does not. He could not handle the crop from one as large as many of our Eastern farms.

Visitors to the West should visit Boise. It is a good town, with an excellent class of people. Many of them are from Missouri and the states of the Mississippi Valley, and The Fruit-Grower representative is under obligations to Judge Schooler, president of the Missouri Society at Boise, as well as to Mr. Wood. Those who visit the Portland fair or who make a trip to any of the Northwestern country can visit Boise either going or coming, without extra charge. Boise is off the main line of the Oregon Short Line, but is connected with it by a spur which runs out from Nampa. Persons holding through tickets should advise the conductor that they wish to visit Boise, and they will be allowed to stop at Nampa. Upon presenting the through ticket to the ticket agent at the latter point, he will issue a trip to Boise and return without charge, and thus one will be enabled to visit the capital city of Idaho and one of the most progressive and up-to-date cities in the West.

Persons who desire any information concerning the city of Boise or the surrounding country should correspond with the Boise Chamber of Commerce, which maintains a bureau for furnishing this information. Simply address Boise Chamber of Commerce, Boise, Idaho, and state what you want. Visitors to Boise will find a banner across the street leading to the railway station, locating the headquarters of the organization, where secretaries will be found to furnish any desired information.

⚜ ⚜ ⚜

Strawberry-Runner Cutter.

Mr. Robert Wheeler, Tecumseh, Okla., describes a new tool he has devised to cut strawberry runners. He says "I bought a light steel hoe, such as they use here to chop cotton. The blade is ten inches wide and four inches deep. I had a blacksmith heat the shank and straighten it, so that the hoe blade stands in line with the handle, like a grass edger. I then sharpen the blade and cut the handle off, so as to leave the tool about four and a half feet long. I can cut runners very fast with it, and do it well."

⚜ ⚜ ⚜

If I have to surrender The Fruit-Grower or my coffee, I will give up the latter.—J. M. Witherington, Kenton, Tenn.

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The Payette Valley, Idaho

This valley, which is irrigated from the Payette River, is one of the most extensive irrigated sections visited on this trip. The canals which furnish water for these lands have an abundance of water, even during the present season, when the supply of water is shorter than it has ever been before. This shortage in some sections is due to the scarcity of snow in the mountains last winter. But at Payette there is no shortage, and crops this season are very heavy.

BIRDSEYE OF IRRIGATED VEGETABLE GARDEN NEAR BOISE.
Irrigation Ditch in Foreground, Boise City in Background.

At Payette Mayor Haynes, who is a member of the real estate firm of Brainerd & Haynes, took the Fruit-Grower representative for a drive through the country. Here resides Secretary Shawhan, of the Idaho State Horticultural Society, and the farm of J. H. Shawhan, father of the secretary, was visited. Mr. Shawhan has one of the best pear orchards we have ever seen. He grows a number of varieties of pears, such as Anjou, Clairgeau, Bartlett and Flemish Beauty. Mr. Shawhan came to Idaho from the Middle West, where he had been engaged in the mercantile business. In his new home he engaged in fruit-growing, and has been very successful. He has only a small place, but it is well cared for. We asked Mr. Shawhan if he was troubled with pear blight, and he said he had considerable blight, but he watches his trees carefully and keeps it cut out. Other growers had lost many trees from blight, but so far he has managed to keep his trees from dying. His plan is to watch the trees closely for the first appearance of blight, and then cut out the affected part, taking care to cut well below the point where the blight seems to extend. The knife or chisel used in the cutting is disinfected after each cut, to prevent the spread of the disease by this means.

Mr. Shawhan's pear crop this year will amount to perhaps 2,500 boxes, and it will be very fancy fruit. Most of it will be shipped to New York market, where the best prices are usually obtained.

In talking with Mr. Shawhan and other pear growers we learned that Idaho pears sell for higher prices than California fruit everywhere the former has been tested. The fruit has a richness and flavor which the California fruit does not possess, and discriminating buyers appreciate this and are willing to pay more for the Idaho fruit.

Mr. Shawhan sprays his pears very carefully, to prevent injury by insects, and at the present time the spray mixture is plainly to be seen, not only on the foliage, but on the fruit itself. The apple crop will not be a full yield, by any means, this year, and good prices are expected.

A canning factory at Payette makes a market for great quantities of vegetables and fruits, and many of the farmers have made lots of money growing peas for the canning factory. Canteloupes also do well here, and the Payette melons have established a reputation for themselves similar to that which is held by the Rocky Ford canteloupes in Colorado.

During the past few years many of the fruit-growers near Payette have been planting cherry trees, mostly of the sweet sorts. This fruit grows to perfection here, and has been very profitable. The fruit is shipped in the fresh state, and the canning factory also takes all the fruit offered, at good prices. We were told by the superintendent of the factory that this year's pack of cherries has all been sold, and the demand is for more. Bartlett pears are also canned extensively, and the Payette fruit sells for fancy prices in the best markets for canned goods.

In driving out with Mr. Payne we passed the home of Mr. M. B. Sherman, who has the largest plantation of raspberries seen on this trip. Altogether, Mr. Sherman has about twenty-five acres.

RASPBERRIES AMONG PRUNE TREES, NEAR PAYETTE, IDAHO.
(Mr. M. B. Sherman Evaporates Raspberries on the Vines.)

"How do you get them picked, Mr. Sherman?" we asked, for we could not see where enough pickers could be secured to handle this acreage of fruit.

"I don't pick them," was the reply. "I evaporate them."

"But don't they have to be picked before they can be taken to the evaporator?" we asked.

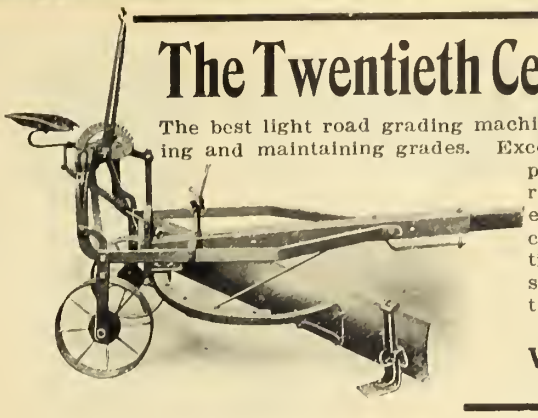
"Not at all," was the reply. "In this country, where we have little or no rain during the summer, I allow the berries to dry up on the vines, then go through and cut out the old canes, bearing the fruit, and haul them to the packing house, where they are forked over, and the berries shatter off. They are picked up, run through a fanning mill, and there you have the evaporated fruit."

That was a new experience to us, but, like a true Missourian, we saw the berries drying on the vines, so there could be no doubt of the statement. Mr. Sherman had experimented on a small scale at first, and had increased his planting, until he now has twenty-five acres. He grows the Gregg variety, and most of the berries are planted among fruit trees. Our illustration shows a field of the berries planted among prune trees. The rows are seven and a half feet apart, plants eighteen inches in the row. The fields are given the best of care, as shown in the illustration.

Of course, eighteen inches seems very close to plant raspberries, and one would think that with the new plants which are formed from the tips the field would soon get choked up. But Mr. Sherman informed us that the raspberries very seldom form tips in that dry climate, unless one is careful to cover the tips with earth. They do not form of their own accord, and he has found his plan works well. We asked Mr. Sherman about the yield, and he said he tried to get 1,000 pounds of dried berries per acre. The evaporated berries sell for 20 cents per pound. This seemed to open up a new enterprise, and we asked further about it, but Mr. Sherman said he has not tested the matter fully, and he is fearful that there is not a very strong market for any considerable quantity of evaporated raspberries at 20 cents a pound. But so long as the market holds out he is making money.

In some of the irrigated countries visited the lands have been newly settled, and the farms are not well improved. But not so in the Payette valley. Many of the farm houses are large and commodicus, surrounded by well-kept lawns. Rural delivery and farm telephones reach all parts of the valley, and the small farms make the country very closely settled, thus insuring good school and church facilities. Near Payette is the colony of New Plymouth, which is settled very largely by Easterners. A model town has been laid out, with town hall, etc., and a splendid colony is being built up, with the town of New Plymouth as the center.

Land about Payette is in demand, and new settlers are coming every day. The climate is good, the water is plentiful, the soil productive, and the market first-class.



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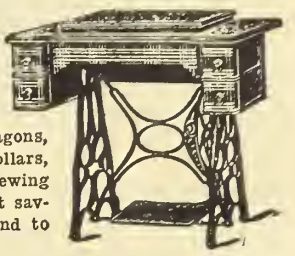

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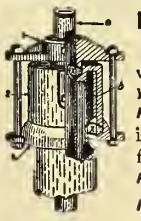

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W. G. Campbell, Jr., General Manager James M. Irvine, Managing Editor

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Vol. 16. SEPTEMBER, 1905. No. 9

One who goes to the Northwestern states for the first time will be impressed with the greatness of things out there. Big states, big trees, big mountains, and, after reading some of the tales which are told, one is apt to add, "Big liars." But there is one thing which is not big, and that is the orchards and fruit farms. They are small, as a rule; the most profitable ones, at any rate, are not large. There are no orchards of hundreds of acres, like we have in the Middle West, and these large holdings are not desired in any community. Small orchards, well cared for, bring better returns. Is there not a lesson here for our growers in the Middle West? Is it not possible we have planted on too extensive a scale, and therefore are not able to give our orchards the attention they should have? Is it not time for the pendulum to swing backward, and instead of boasting of our large orchards, shall we not rather seek to discourage them? Instead of showing visitors our thousand-acre orchards, would it not be better to show them smaller ones, which have received better care, and which therefore have yielded better returns? This matter is worthy of careful consideration. We believe it is time to sit down and calmly go over the whole proposition. How many of the very large apple orchards, for instance, in the Middle West have ever been really very profitable? Don't be in a hurry to answer this question, but think it over. Is it not true that the smaller orchards are the ones which have made the money? Not orchards as small as those in the Northwest, perhaps, but still orchards which are eighty acres or less. What do our readers think about this? What has been their experience? With the scarcity of farm help, and with the increased attention which our orchards must receive, is it not time to consider the question of planting smaller orchards, and then giving them the very best possible care? We shall be glad to hear from some of our readers on this subject.

While The Fruit-Grower representative was visiting the orchards of the Northwest during July and August, it was gratifying to notice that in every place visited the best fruit-growers are subscribers to this paper. The best-kept orchards in every community were owned by men whose names are on our subscription list. This naturally made us feel good. The Fruit-Grower would hardly claim that this paper has been responsible for the success of such men as E. L. Smith of Hood River, Fremont Wood of Boise, T. W. Clark of North Yakima, or others who might be named, but it was encouraging to know that even these men, who are among the best in their lines in their respective communities, have found The Fruit-Grower interesting and profitable, and that they continually recommend it to growers everywhere, to the experienced man, as well as to the amateur. After one spends a few weeks among the best growers in some of the best fruit sections of the United States, one fact is impressed upon one's mind very forcibly—that no farmer who grows fruit can afford to do without The Fruit-Grower. The novice will find much to help him, and even the most experienced man will find some things in its columns which will justify the expenditure of the subscription rate. If your name is not on our list, or if your time has expired, now is the time to send your subscription and get in line with the best growers everywhere.

At the meeting of the American Apple Shippers' Association a motion was made to ask the railroads to increase the tariff on apples in bulk to 50 per cent more than the rate on barreled apples. The intention of this was to prevent the shipment of apples in bulk, those shipped in this way being fruit which is not worth barreling. The resolution was voted down, but the fact that it was introduced shows that the apple handlers are desirous of keeping inferior apples from being shipped all over the country, to break the market for good fruit. In line with this desire to prevent low-grade apples from competing with the better grades, the association adopted a resolution asking for the enactment of a national pure food law, which shall provide, among other things, that vinegar manufacturers who pretend to manufacture cider vinegar shall actually make it from pure apple cider, and not from chemical compounds.

The United States Department of Agriculture some time ago published a bulletin on the subject of cold storage of fruits, in which a report was made of some experiments in storing peaches. At that time the statement was made that it was impracticable to store peaches, except, perhaps, to hold fruit temporarily during a glutted market. Acting on this suggestion, some New York buyers bought peaches during the very low prices which ruled during the season when Georgia peaches were being received, and held them in storage for a short time, until the heavy supply was exhausted. Forty or fifty cars were held in this way, and marketed at a handsome profit. This is likely the first time this plan has been tested on so extensive a scale.

Before The Fruit-Grower representative left home in July, a number of invitations were received from subscribers in various parts of the Northwest, urging us to visit their respective localities. Few of these invitations could be accepted on account of lack of time, but the invitations were appreciated, just the same. Some of the very best fruit sections in the Northwest were not visited at all—parts of Colorado, Northern Idaho, Southern Oregon, the Wenatchee country in Washington, for instance—but these were saved for another trip. These sections were not included in this trip, not because they were not worthy, as well as a number of other places, but simply because all the country could not be covered in the one trip.

Nebraska and Kansas Nurserymen.

A representative of The Fruit-Grower had the pleasure of recently visiting a number of the nurserymen doing business in Nebraska and Kansas. Among those called on in Nebraska were F. W. Meneray, Council Bluffs, Ia.; Marshall Bros., Arlington; B. E. Fields & Son, Fremont; Yager & Welch, Fremont; Harrison Bros., York; C. H. Harrison, York; C. M. Hurlburt, Fairbury; Youngers & Co., Geneva. Calls were also made on J. A. Gage, Beatrice; Fred J. Meyer, Beatrice; Carl Sonderegger, Beatrice; George Galbraith, Fairbury, and several others, but he was unfortunate in not finding these gentlemen at home, most of them were away enjoying vacation trips and preparing for the strenuous business which will come to them this fall.

All of the nursery stocks which he was privileged to visit were in fine condition and it was a beautiful sight to see the clean rows of small trees standing straight and healthy looking.

Lack of space forbids a detailed account of all the nurseries visited. Each one had some point of interest that impressed the representative with the fact that the nurserymen of this section of the country are progressive and alive to their business. The representative also had the pleasure and opportunity of meeting a large number of nurserymen at the summer meeting of the Horticultural Society held in York, Neb., last month. He found every one of them to be genial, whole-souled gentlemen, and all had a good word for The Fruit-Grower. All reported prospects for a good season's trade. Marshall Bros., of Arlington, Neb., are well equipped with a general stock to handle their increasing business. Both the members of the firm devoted their time to showing us their well appointed propagating grounds. They have established an enviable reputation for fair dealing.

At Fremont we found B. S. Fields & Son with a large stock of all the regular lines of nursery stock. Messrs. Fields & Son are remodeling one of their large buildings into a cold storage and packing room that will have all the modern improvements for the handling and packing of their goods.

Yager & Welch, of the same place, are preparing to handle their increasing business with a large amount of good healthy trees and ornamental srhubbery. Both of these gentlemen are keenly alive to the best methods of keeping themselves constantly in touch with their trade.

At York we found Harrison Bros., with a large acreage of first class stock. These gentlemen are young men of exceptional push and business energy. They have a large number of salesmen on the road and their business is increasing every year.

Mr. C. H. Harrison, a pioneer nurseryman, is also located here. He is devoting a large part of his time to experimenting with the growth and propagation of ornamental shrubbery and flowers. A good many valuable ideas have been advanced by Mr. Harrison through his experience in the experimental work that have proved of benefit to nurserymen.

At Geneva we had the pleasure of spending a very interesting half day at the Geneva Nursery. Mr. Brown, manager of the business, gave his whole time to making the visit not only one of pleasure but also of profit to the representative. We saw one block of eighty acres that was covered with as fine a lot of apple stock as one could wish to see.

Getting down into Kansas our first stop was at Seneca, where we met an old and tried friend of The Fruit-Grower, Mr. S. J. Baldwin. We had a very pleasant visit with him and one of his sons. Mr. Baldwin is preparing to handle a largely increased trade this fall.

Going from Seneca to Topeka we made a call at Taylor & Son's office, but were unfortunate in finding both the gentlemen out of the city. Mr. Johnson, however, gave us a very cordial greeting and we spent a very pleasant hour with him. This firm is one of the best known in this section of the country and are doing a splendid business.

We had the pleasure of a short visit with Mr. Skinner, of Peters & Skinner, also of Topeka. These gentlemen operate one of the largest nursery plants in this part of the west. Mr. Skinner is a very pleasant talker and shows by his conversation that he is thoroughly in touch with the nursery business.

At Lawrence we called upon G. L. Knight, E. R. Balco, of the National Nursery, A. C. Griesa, T. E. Griesa and C. W. Murphy, of the Western Nursery. Owing to a limited amount of time it was impossible to visit the propagating grounds of any of these firms, but we know by the reputation they sustain that they have a fine class of stock.

Passing on we arrived at Ft. Scott, where we met Mr. A. B. Combs, of the Hart Pioneer Nurseries. This fir mdoes an extensive business and is among the best known firms of the country.

Among others that we called on were E. P. Bernardin, of Parsons, Kan.; Truitt & Sons, Chanute, Kan., who are live, up-to-date business men and very pleasant gentlemen, both in a business and social way. F. B. Orton, Kiowa, Kan., who, with his estimable wife and daughter, entertained the representative in a very delightful manner. W. F. Schell, of Wichita, Kan., a man well known throughout the state, being vice-president of the Kansas Horticultural Society. Owing to an unexpected summons to return home the representative was unable to call on all nurserymen that he had on his list, but we hope sometime in the near future to personally meet a good many more at their homes. Altogether his trip was very profitable in more ways than one, and he extends grateful thanks for the very kindly and genial manner in which he was received by all those whom he visited.

C. W.

National Nurseries Booklet.

The National Nurseries, at Lawrence, Kan., have just issued a very handsome little booklet of views and descriptive matter, pertaining to their business. The booklet is for general distribution, and will be sent to any one on application to Mr. E. H. Balco, proprietor of the nurseries, who is thoroughly experienced in the growing and shipping of nursery stock. The views show their offices and portions of their propagating grounds, and the descriptive matter tells of their methods of doing business and how they grow their large assortment of fruit trees and ornamental shrubs. On another page of this issue will be found an advertisement of this enterprising firm that will be of interest to many of our readers. The booklet was issued from the press of The Fruit-Grower Co., St. Joseph, Mo.

Nurserymen's Convention Extraordinary.

There was a session of the Southern Nurserymen's Association which lately held its annual meeting at Norfolk, Va., which was not on the original program. Upon final adjournment, twenty-five or more of the leading nurserymen of the South, including the vice-president of the association, made up a special party to visit the nurseries of J. G. Harrison & Sons at Berlin, Md., whose advertisement appears elsewhere in this issue. For two days this large party were the guests of Harrison & Sons. On Thursday, August 17th, some five hours were spent in driving through the Harrison Nurseries, which cover over 1,000 acres, including the old Commodore Decatur farm, of historic memory. The party consisted largely of the active Southern competitors in business of the Harrison people. Needless to say the extent and condition of the Harrison Nurseries was an eye-opener to them. On Friday morning the vice-president called a session extraordinary of the association, at which speeches were made, showing the hearty appreciation of the visitors, and resolutions were passed expressing the appreciation of the entire party to the Harrison people, and particularly to Mr. Orlando Harrison and family, who had the entertainment in charge. After this session the party were taken to Ocean City, where they availed themselves of the privileges of the surf, and at noon went on their way rejoicing to their homes.

Spain's orange crop is very short, on account of cold weather last winter. The shortage is expected to make good market for California oranges in Europe.

The Family Circle

Within the past two months several of the magazines have announced an increase in their subscription price. It is rumored that more of them will later advance their subscriptions. The cause is found in the fact that the price has been too low. With the higher cost of white paper, higher wages for printers, pressmen, etc., it costs much more to publish magazines now than it did a few years ago, and a change had to be made.

The higher prices are responsible for the increase in the rate of The Fruit-Grower, which will be effective January 1, 1906. After that date, the subscription will be $1 per year. Until that time we will accept renewals for as much as four years in advance at the present rate of fifty cents per year.

All those who have read The Fruit-Grower regularly during the past few years appreciate how very much the paper has been improved, without an increase in subscription rate. They know that this increase is fully justified by the improvements which have been made. When our subscription rate was fixed at fifty cents per year, The Fruit Grower consisted of not more than sixteen pages monthly. Now the size is more than twice as large, on an average, running as high as sixty pages during the winter season.

The paper costs more to produce, and it is worth more, and therefore, as has been repeatedly announced, the subscription rate will be $1 per year after January 1.

It is hard to understand why any of our subscripers will fail to renew their subscriptions now at fifty cents, a year, when they know that their renewals will cost them $1 per year in less than four months' time. If your time has expired, renew today, and get the benefit of the old rate. You can renew for four years at rate of fifty cents a year, but for no longer time. A good plan is to get the subscriptions of your neighbors and inclose them with your own.

During the past year The Fruit-Grower has published an Eastern edition, which was edited by Mr. Gabriel Hiester, Harrisburg, Pa. Every month the reading matter contained in several pages was changed to make room for the matter furnished by Mr. Hiester. Mr. Hiester now writes us that he will be unable to furnish this matter any longer, on account of the press of other duties. At the same time the suggestion is made that perhaps our Eastern readers will be better pleased with The Fruit-Grower if they receive the same matter which goes to the general list. Some of the matter contained will not be suited to their conditions, of course, but they want to know what the Westerners are doing, and the latter want to know what is going on among Eastern horticulturists.

Accordingly, we will discontinue the Eastern edition, as such, and will send all our subscribers—East, West, North, South—the very best paper we can print. Not all the matter will be suited to every section, but this cannot be arranged otherwise, and one will have to apply the principles to one's local conditions. This is true of the Western grower, as well as or the Eastern man.

Now that we will discontinue the special Eastern edition, we will want some good, snappy articles from Eastern men, which will be published for the benefit of all our subscribers. We will also want articles from Western and Southern growers, so that every section of the country will be represented. The Fruit-Grower circulation is scattered all over the country, and the paper will be published in the interest of fruit farmers everywhere. Suggestions from our subscribers as to ways in which the paper can be improved will be welcomed, as they have always been.

We fell particularly proud of this issue of The Fruit-Grower. Our Northwestern subscribers who have felt that their section had been somewhat neglected, will be pleased with this number, for it is one of the handsomest we have ever sent out. We are only sorry that we could not meet with more of them while on this Western trip, but the country is large, and not all of the territory could be covered. It made us feel good, though, to have those subscribers whom we met, say kind words concerning The Fruit-Grower. All of them were pleased with the paper, and we found, as a rule, that nearly all the growers in every community are members of The Fruit-Grower Family. Certainly we found that the best-kept farms, as a general rule, belong to our readers.

Next summer perhaps we will visit another fruit country and report what the growers are doing there. In this way we can present illustrations showing the methods used, and can report the success which has been attained.

Next month The Fruit-Grower will contain full report of the meeting of the American Pomological Society, which will be held at Kansas City, September 19 to 21. All of our readers who can do so should attend this meeting, but for those who cannot, we will report what is done at that time.

Allow us to suggest at this time that the various county and district fairs offer excellent opportunities for meeting farmers who are interested in fruit-growing, and to interest them in The Fruit-Grower. Will not many of The Fruit-Grower Family remember this, and try to secure good lists of subscribers at the various fairs? One can find many persons who are interested in fruit culture about the various fruit exihbits—and when you find a man interested in fruit, it is an easy matter to secure his subscription. Will you not try to get a club at the fair? Do it for the sake of the growers, and for the sake of

BROTHER JONATHAN.

To Protect Trees Against Rabbits and Mice.

As the autumn season approaches orchardists are interested in plans of protecting the trunks of trees against injury by mice and rabbits. Recently there has appeared in The Fruit-Grower reference to the damage from these pests, and in reply to questions a number of our readers have recommended the use of Warnock's Tree Paint, manufactured by R. Warnock & Co., Independence, Mo. Those who have used this preparation report that it has been effective in keeping away the pests named, and has not injured the trees. The paint sticks to the tree remarkably well, and one application lasts for a long time. Our readers are urged to write to Warnock & Co., Independence, Mo., asking them about this preparation, so that the trees can be protected before the winter season comes on. The expenditure of a small sum of money may save a number of valuable trees from injury during the coming winter.

Good Nursery Advertising.

The Griesa Nurseries, at Lawrence, Kan., T. E. Griesa proprietor, have just issued a small booklet that is very handsome in design and makeup. It contains illustrations of portions of their growing stock and of the home grounds, offices, etc. The descriptive matter sets forth their methods of doing business, how they grow and care for their large assortment of fruit trees and ornamental shrubs and their first-class packing and shipping facilities. This firm is among the pioneer nursery firms of the West and has established an enviable reputation. The booklet may be had upon application to the above named firm and is for general distribution. It was issued from the press of The Fruit-Grower Co., St. Joseph, Mo.

The Fruit-Grower recently received from the Sunny Slope Nursery, Hannibal, Mo., a specimen of the Johanna peach and one of the Mammoth Yellow Heath. The first-named is a very hardy peach, according to the originator—indeed, both must be hardy to have passed through last winter. The Johanna is not large, but is of very good quality, sweet and rich. The other variety is a yellow freestone, which Mr. Hall says is doubtless a cross between Elberta and Heath. Season later than Elberta. It is of good size, but the specimen we received was not ripe, and we could not judge of its quality.

Boss Washing Machine

Ask your Local Dealer for the "Boss."

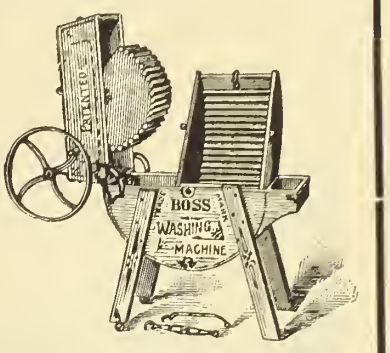
A WOMAN'S FRIEND

WASH DAY A PLEASURE

By the Use of a Boss Washer.

It will cleanse 10 shirts in 12 minutes or garments to the amount of 10 shirts. Guaranteed to cleanse the finest of fabric, including laces, without injury.

Over 1,000,000 now in use, which proves its merit, and no home should be without a good Washer.



Two Weeks Trial

Write and we will arrange to send you one on two weeks' trial.

Boss Washing Machine Company, Cincinnati, Ohio

IRRIGON is no longer an experiment. She has emerged from the era of Promise and Faith to the days of Fulfillment and Realization. When the first irrigated tracts were sold here, in October, 1903, the promoters claimed an abundance of water, a climate incomparable, soil of the quickest, transportation facilities which showed for themselves, and markets unequaled. The buyers took those promises and statements on faith, but now all know them to be true.

IRRIGON has not thus far produced enough to flood the markets. How could she do that practically her first year, or at best, her second? But she has produced enough this year to *prove that she can get early potatoes on the market two weeks ahead of any place in the Northwest.* She can have

IRRIGON
OREGON

her cherries marketed ahead of all other points, and this year her experimental patches of strawberries were 10 days earlier than those of any other point north of California. And watermelons! The carload recently shipped to Spokane were the finest sold in that market this season, and "Irrigon watermelons 10 days ahead and 50 per cent better than all others" will be our slogan next year.

If you want to learn more about Irrigon, the homeseeker's paradise and learn the low prices of her land, call on or address

The Oregon Land & Water Co.
IRRIGON, OREGON

P. Sebire & Sons, Nurserymen, Ussy, Calvados, France
***and* James Fils, Nurseryman, Ussy, Calvados, France**

A general assortment of Fruit Tree Stocks, such as **Apple, Pear, Myrobolan Plum, Mahaleb** and **Mazzard Cherry, Angers, Quince, Small Evergreens, Forest Trees, Ornamental Shrubs, Roses, etc.** The largest stock in the country. Prices very low. Packing secured. Send for quotations before placing your orders elsewhere. Catalogue free. Agnts for United States and Canada.

C. C. ABEL & COMPANY, 114 Broad Street, NEW YORK

Seed Wheat is largely responsivle for the next crop. Please write for our prices and samples before purchasing your seed.
ROSS BROS.' SEED HOUSE, Wichita, Kansas.

The Southwestern Cold Storage Co., P. A. Simonds, president, has leased the cold storage house of Armour & Co., Kansas City, Mo., and is prepared to store apples for the coming season.

W. A. Gold, Mason City, W. Va., has been elected president of the West Virginia Nurserymen's Association for the ensuing year, and R. R. Harris, Harrisville, W. Va., has been chosen secretary. The next meeting of the organization will be held at Clarksburg January 9, 1906.

Many of the South Georgia peach growers are said to have lost much of their fruit this year from rotting. Wet weather at ripening time prevented the fruit from arriving in good condition.

The Hood River Valley

Nestled among the mountains along the Columbia river lies the Hood River valley, one of the best known fruit sections of all the northwest country. It sh uld be said, in the beginning, that the term "valley" is somewhat misleading. The fruit trees are planted in what is really a valley, as contrasted with the near-by mountains, but as related to the Columbia river the Hood River valley is really a comparatively level plateau, several hundred feet higher than the river. We present an illustration, giving a bird's eye view of the valley, with its small farms.

Hood river is noted for its apples and its strawberries. Not many of

A PEEP INTO HOOD RIVER VALLEY, ORE., MT. HOOD IN DISTANCE.
Photo by Ford. On Line of O. R. & N. Co.

the apples grown at Hood River find their way into the ordinary markets, for the price is usually too high to permit of any but the most select trade to handle the fruit. But last year at St. Louis a wonderfully fine exhibit of apples was made, and the eyes of the middle west were opened. Hood River strawberries have long been known on the markets, on account of their firmness and careful handling.

When The Fruit-Grower representative arrived at Hood River, it was after a very hot, dusty ride; the day had been very disagreeable. It meant much therefore, to reach a place provided with clear, cold water, from springs up in the mountains, and the first impression of Hood River was most favorable.

One of the first men we met was publican nominee for governor of Oregon next year. If he is, we will vote for him.

We made ourselves known to Mr. Smith, who replied:

"Well, I am certainly glad to see a representative of The Fruit-Grower, for I want to say to you, as I have said to a great many other persons, that The Fruit-Grower is the best fruit paper published in this or any other country. I have made this statement all over the northwest, and have myself sent a number of subscriptions."

Mr. Smith took us up to his house, to meet his wife, who explained that she, too, had admired The Fruit-Grower very much. Mr. Smith is one of the first settlers of Hood River, and when he had opportunity to choose a site for his home selected a block of ground with a magnificent view up and down the Columbia river and across to the mountains on the Washington side. He has a beautiful home in a beautiful location. We are indebted to Mr. Smith not only for a most cordial welcome, but for much valuable information concerning fruit-growing in the northwest. He has grown three orchards, which have been sold, and now has another beautiful orchard just coming on. One of our illustrations shows Mr. Smith holding a branch of apples. He has been in the northwest for forty-four years, but is a well-preserved man, and we hope he will be with us long enough to raise several more orchards.

Mr. Smith informed us that the fruit lands of what is called the Hood River valley will amount to perhaps

HOOD RIVER STRAWBERRY FIELD.
Rows Run Around the Hill to Permit of Irrigation.

Mr. E. H. Shepard, manager of the Berry Growers' Association, also manager of the Apple Shippers' Union. An appointment was made to drive out in the country the following day. After supper The Fruit-Grower representative met Hon. E. L. Emith on the street, and recognized him from his published likeness. Mr. Smith is president of the Oregon State Board of Horticulture, president of the Northwest Fruit-Growers' Association, and is one of the pioneer orchardists of Hood River. It may also be stated that while in Portland we learned that Mr. Smith will likely be the Republican nominee for governor of Oregon next year. If he is, we will vote for him.

50,000 acres; about 3,000 acres only are now producing fruit for market. We asked Mr. Smith what is the best money crop that is grown, and he promptly replied:

"Newton and Spitzenburg apples."

He added that strawberries are an important crop, and will serve to bring an income until an orchard is in bearing, but when an orchard begins to bear he believes that nothing will beat it for profit. He added, in this connection, that he believed the varieties named are the ones to plant. Other apples do well at Hood River, but they succeed in other localities also, whereas the two varieties named reach a high state of perfection there, such as they reach at very few other places in the country.

Not everyone who plants an apple orchard will succeed, at Hood River, any more than at other places. The successful man must spray his trees and cultivate the soil thoroughly. The annual rainfall at Hood River is not heavy—not heavy enough to raise strawberries without irrigation—but the young orchards are all grown without irrigation, unless strawberries are planted among the trees, in which case they will have to be watered, and of course the trees will receive a share of the water. However, the best opinions are that apple trees should be grown without irrigation, at least while they are young; when trees get old and are bearing a heavy load of fruit, it may be necessary to apply water late in the season. But orchards twelve to fourteen years old, full of fruit, are enabled to ripen their fruit without irrigation—simply cultivate the soil thoroughly and often.

The Hood River growers are experts on spraying, too. Notice the small tree shown in our illustration.

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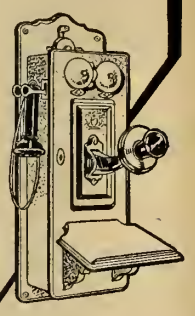
THIS 80 PAGE RURAL TELEPHONE BOOK FREE

A telephone in the home is an investment—not an expense. It will pay for itself over and over again. In reality it costs you nothing to install a telephone in your own home. Aside from the time and money a telephone will save you—think of the convenience—think of the comfort there must be to know that at any moment you can be in instant communication with any of your neighbors, or that you can call your physician at any hour day or night. Perhaps the time saved will save the life of one that is dear to you. Think of the advantage there is in sending orders or messages to any of your nearby cities. Can you not see what it will mean to you to be in close touch with all market quotations? All these and many more advantages are fully explained in our 80-page Rural Telephone Book, which is sent free for the asking. Write before the supply runs out. This valuable book tells how to organize, secure subscribers, build lines, and install instruments. Advises what to use and where to buy. Shows cost per mile. Contains franchises, by-laws, rules, code of signals, contracts, cuts of telephones, switchboards, tools, supplies and wiring diagrams. Teaches how to remedy telephone troubles. Largest and most complete book on rural telephones and lines ever published. Valuable and instructive. Worth writing for. Write while your mind is on it.

Swedish American Telephone Co., Rural Dept. C
Chicago, Illinois.



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PROTECT YOURSELF AGAINST LOSS BY INCORRECT WEIGHTS

As a protection against loss by incorrect weights, every farmer should have a U. S. Reliant (pit) or Imperial (pitless) Scales. Guaranteed to be absolutely correct and the equal of any scale on the market, no matter what price. Each scale is GUARANTEED FOR FIVE YEARS. We have the only ball bearing scale on the market; has interchangeable parts, full compound brass beam; perfect in every detail of construction. Write for full description.

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We know this scale is superior to anything on the market at the same price, and we have so much confidence in our ability to completely satisfy every one who will give it a test that we will ship on 30 days free trial without requiring one cent in advance.

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Kemper-Paxton Mercantile Co. 920 Liberty Street, KANSAS CITY, - MO.

KIL-O-SCALE

THE GREAT SAN JOSE SCALE DESTROYER.

The following quotation is an extract from a letter from Prof. John B. Smith, Entomologist, New Jersey Experiment Station, referring to KIL-O-SCALE

"An orchard of about 300 trees was so completely cleared, that it is almost impossible to find a live scale at this time."

To apply, simply dilute one gallon of KIL-O-SCALE with twenty gallons of HOT or COLD water and stir. Price: In bulk, in barrels and half-barrels, per galion, $1.00; 1-gallon cans, $1.50; 5-gallon cans, $6.25; 10-gallon cans, $12.50.

Further particulars and circulars, address

GRIFFITH & TURNER CO., 209 N. Paca St., BALTIMORE, MARYLAND.

APPLE BOXES

The best package for boxing and shipping apples. Manufactured from northern white pine. Much superior to the barrel as an apple package. Carload lots knocked down. Melon crates. Write for prices.

NORTHERN BOX MANUFACTURERS' AGENCY,
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APPLES

The writer will have a crop of apples to sell when matured, about Oct. 1st; 60 acres of large trees, well filled with sound fruit. Varieties are Ben Davis, Winesap, Jonathan and Janets. Will sell in orchard or f. o. b. cars in barrels. Orchard is at Padonia, five miles north of Hiawatha, Kan. Correspondence solicited.

E. CHASE, PADONIA, KANSAS.

O. K. NURSERIES

Fifty Peach Trees Free to New Customers

A complete stock of Fruit Trees, Roses, Ornamentals, etc. Beautiful illustrated catalogue for the asking.

A. L. LUKE, Mgr., Wynnewood, I. T.

The Robinson Nurseries

Located at Lawrence and Baldwin, Kan., are making a SPECIAL OFFER. A present of 10c worth of nursery stock for every dollar's worth purchased before Oct. 15th, 1905. Buy now and save 10 per cent. Special prices on large lots. Write for catalogue.

B. R. ROBINSON, PROPRIETOR,
Lawrence, Kansas.

WANTED

To buy 1,000 barrels of extra fancy apples for storage. Write what you have to offer.
W. H. YOUNG, ABERDEEN, MISS.

LAND
of Big Red Apples and Strawberries
that beat the world. Pays $100 to $500 per acre every year. Prices, $10 to $500 per acre; 20 acres will make you a small fortune. Climate mild and healthy. Scenery unsurpassed. **No cyclones; no blizzards.** Write to
Geo. D. Culbertson & Co.
Leading Land Agents, Hood River, Ore.
Guaranteed Fair Dealing.

The Fastest Growing Nuseries in Illinois
An immense stock for fall delivery. All our Fruit Trees are propagated from best bearing trees and are growing on the best nursery land in the state. Write for prices.
Salesmen Wanted
Nurseries at Carrollton and Jerseyville.
John A. Cannedy N. and O. Co.
CARROLLTON, ILLINOIS

Forest Tree Seedling
Apple Seedling
Pear Seedling
Shade Trees, Fruit Trees
Grapes Currants
Gooseberries and
Flowering Shrubs
If you are interested write for prices.
Peters & Skinner, North Topeka, Kas.

The Ellisville Nurseries
offers a complete line of first-class Nursery Stock; special low prices on Apple Trees, both in two and three-year-old trees, by the 100 or in car lots. Please send your list of wants for prices before ordering elsewhere and save money. Certificate of inspection will accompany each shipment. Stock guaranteed to please.
A. WILMAS, PROPRIETOR,
Ellisville, Missouri, St. Louis County.

RASPBERRY PLANTS
True to name. Kansas, Cumberland, Evans' Early, Nemaha and Haymaker; also Austin and Premo Dewberry Plants. Write for prices to
C. G. MOREMEN, Brandenburg, Ky.

FRUIT TREES
We offer an exceptionally fine stock of Apple, Peach, Pear, Cherry, Plum, Small Fruits and Ornamentals for Fall and Spring planting. If you want a Plum that will bear every year (no off years) send us a trial order for other trees to the amount of $3.00 and we will include one of the Plum trees free. Write us for descriptive circular and testimonials about the Plum.
Nurseries established 1860.
J. M. Vandervort & Son, Wilmington, O

The Pretty Lake Nurseries
Of Plymouth, Indiana, for sale. Being old and wishing to retire from business, will sell at a bargain. Have been in business here over 30 years. Come and see it.
HOLLAND & COMPANY

1,875,000 Plants True to Name Free From Disease
Including King, Cardinal, Miller, Brilliant and Loudon Red Raspberries; Mersereau, Eldorado, Early Harvest, Ward and Rathburn Blackberries; Lucretia, Premo, Austin and Rogers Dewberries; Kansas, Ohio, Conrath and Cumberland Black Raspberries; Wineberries, Huckleberries, Loganberries, Juneberries, etc., etc. Lowest prices on earth for first-class plants.
SELIGMAN (MO.) NURSERIES.

Trees & Plants
Freight paid to your station. We have a complete line of Fruit and Ornamental Trees, Shrubs, Vines and Plants. Get our catalogue and price list. Our stock and prices are right. Give us your order; we will treat you right.
THE ROEDER NURSERIES,
Remember we pay freight. **Osceola, Mo.**

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BOOK FREE How to put them up—what they cost—why they save you money—all information and valuable book free. Write to
J. ANDRAE & SONS,
869 W. Water St. Milwaukee, Wis.

We supply everything in the nursery line. Our prices are way down. Price List Free.
Augustine & Co., Nursery

Tho photograph from which this cut was made plainly showed the spray mixture sticking to the fruit, although this is not so clear in the reduced illustration. This spraying is so thoroughly done that some of the trees seem as if they were whitewashed. We asked Mr. Smith if any of the growers contend that spraying is ineffective, and he replied that they do not—they know better.

"I can spray one row of apple trees and allow the adjoining row to go unsprayed. From the first I will get nearly perfect fruit, while from the unsprayed row there will be few perfect apples. Codling moth can be controlled, and I have little sympathy for the one who says he cannot hold the insect in check. Some persons

BEAUTIFUL YOUNG ORCHARD OF A. I. MASON, HOOD RIVER.

say that the presence of an unsprayed orchard in the vicinity will infest the whole neighborhood, but this will not be so if the other orchards are sprayed as they ought to be. Tell your people in Missouri and elsewhere to spray their trees thoroughly, and this insect can be controlled."

As an evidence of the thorough spraying given the Hood River orchards, it may be said that when the apples are packed in the fall they are wiped with a cloth to remove the marks of the spray mixture—not the "russet" marks, of too strong a mixture, but the actual spray mixture itself.

Many of the trees are sprayed with lime, sulphur and salt—indeed, in many of the places visited on the trip we found where apple trees are sprayed while dormant with this mixture, simply for the effect upon the vigor of the trees. The bark is kept smooth and vigorous, and even though there is no danger from San Jose scale, many orchardists use this mixture every winter.

We asked Mr. Smith how one was to handle a large orchard where this thorough spraying is done. That is the thing which troubles many of the orchardists in the middle west, the getting over a large orchard.

"That is easy," replied Mr. Smith. "The solution of the problem is to have no large orchards. We have none here. Twenty acres is enough for most men—forty acres is enough for even men who are capable of handling a large enterprise. Twenty acres well cared for is enough work for any one man to look after, and many of our growers are growing wealthy on ten acres. Don't have a large orchard to be neglected—have a small one, and care for it."

Mr. Smith said the best orchard land near Hood River is that on which pine and oak timber originally grew. This land is hard to clear for planting, and is worth $200 to $400 per acre in the raw state. We asked Mr. Smith to say frankly if he thought one would be justified in paying $200 an acre for this land, then clear it and plant it to apples.

"When a single crop will net the owner more than the land cost, I don't believe the first cost of the land should be considered. Yes, sir, I think you can pay even more than that for this land, and still make good money from apples."

Later Mr. Shepard submitted some figures which seemed to prove the correctness of Mr. Smith's position. The writer saw a small orchard of 269 trees from which the fruit sold last year for $2,400, and there were many other similar cases.

Next day Mr. Shepard took The Fruit-Grower representative for a trip through the surrounding country. We wish every member of The Fruit-Grower family might take this trip, to see the care which these orchards receive. Not being able to do this, we present some illustrations made from photographs.

As stated before, strawberries are irrigated, and apple orchards are not. The former are planted close together in rows, and no runners are allowed to form. A runner cutter is used similar to the old-fashioned posthole digger. One of the best we saw was formed of an old saw blade, which is bent in the form of a circle. The lower edge is sharpened, a handle is attached to the top, and the cutter is placed over a hill of strawberries, and the runners cut on every side. These cutters operate just as a biscuit cutter does, and they vary in sizes. For newly-set plants, one eight or ten inches in diameter is large enough to cover a hill of strawberries, but for older plants a larger one must be used.

After fruiting season the planta-

THREE-YEAR-OLD SPITZENBURG APPLE TREE, HOOD RIVER, ORE.
(The Boy is 8-year-old Thurston Laraway.) Note Spray Mixture on Tree and Fruit.

THERE IS ONLY "ONE BEST KIND" OF READY ROOFING. THAT'S
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tions are allowed to rest a while; then the tops of the plants are cut off with a sharp hoe, a man goes along with this cutter shaped like a biscuit-cutter, and then the water is turned on and cultivation begins. Some of the strawberry patches are kept for five or six years, and no runners are ever allowed. It is held by some growers that to cut off the tops and apply the water immediately after the fruiting season will induce the plants to blossom in the fall. Early in the spring the plants are cultivated again. This plan will not work, of course, in localities where the rains would splash the soil on the ripening berries, but they do not count on having rains at Hood River when the fruit is ripening.

Asked as to the varieties grown at Hood River, Mr. Shepard said that only one sort is grown—Clark's Seedling, which originated near Portland.

"We have found that this berry is of good size, good color, and is firm, and it has driven out all other varieties," said Mr. Shepard. "We formerly grew the Magoon, but it is not so firm as Clark's Seedling, although it is more prolific. Occasionally we had a grower who had some Magoon berries, which he tried to ship with

HON. E. L. SMITH, PRESIDENT OREGON STATE BOARD OF HORTICULTURE.
The Limb of Apples Is Hyde's King of the West

Clark's Seedling, but the former berry invariably arrived in bad condition, and is not grown here now."

Berry-growers generally can learn a lesson from these Hood River growers, who have put away a prolific berry and have planted instead a very shy bearer, simply because it will carry well to market, and will not injure the reputation for Hood River fruit. Clark's Seedling is a very shy bearer, but it has firmness, and that is why it is profitable.

Mr. Shepard said the berries are not packed promiscuously in boxes in the field; instead, they are delivered by the picker to the packing shed, and the berries are then placed in boxes in rows and layers, just as Hood River apples are packed later in the season. This requires considerable handling, of course—but the top prices are secured, and that is what counts. Small, poorly shaped berries are not marketed at all, for with this system of grading and packing they cannot be placed in the boxes.

Most of the berries are handled by the association, and much credit is due Mr. Shepard for the splendid returns of the past season. With a large acreage and heavier crop than ever before, the net returns to the growers will be about $1.60 per crate of twenty-four boxes. This means lots of money to be placed in circulation among the strawberry men.

Mr. Shepard is also manager of the apple association, and was in position to give us many facts concerning this business. Last year the apple crop was unusually heavy, and the fruit was of very fine quality. The Newtown Pippins were sold at $1.75 a box, and the Spitzenburgs at $2.10, f.o.b. cars at Hood River, payment being made in cash. This was four-tier apples. This year the crop is not so large, and high prices are expected. While The Fruit-Grower representative was at Hood River two buyers from Europe were on the ground, looking over the field, with a view of buying the fruit for export. Most of the Hood River apples are exported, anyway, and these buyers were seeking to get the fruit at first hands.

All the apples are handled by the association, and we asked Mr. Shepard how the organization could guarantee the pack of its members.

"The association packs all its fruit," was the reply, "so that we know just the character of the fruit. The growers pick their fruit from the trees and deliver to the packing tables at their orchards, and our expert packers are there to do the packing. For this service the orchardist is charged a consideration, but as they own the stock of the association it is the same in the end. After the fruit is packed the orchardist delivers it at the warehouse in town, and it is sold with that of other growers. And under our system we have a uniform pack, and the association guarantees every box of the fruit."

We were told that the cost of the box, labor of picking, packing, hauling to town, etc., is estimated at about 50 cents a box.

Perhaps many of the persons have been of the opinion that, because the Hood River apples they have seen have been uniform in size; that apples there do not vary in size as do ours in the middle west. But they do. Apples of all sizes are grown and many styles of pack are made, such as four-tier, five-tier, etc., the boxes containing from 72 to 212 apples each. The fruit in a given box, however, will be all of the same size, and this careful grading and packing has made a reputation for Hood River fruit. The grading is done by the eye of the grader, who can tell at a glance whether an apple belongs in a four-tier or a five-tier box. This requires careful handling of the fruit, and this is where the expert help is required.

All fruit must be hauled to town in wagons with springs, so that it is loaded on the cars in the best possible condition. This all goes to help bring the price up to $2.00 per box, you see.

Mr. Shepard agreed with Mr. Smith that Newtown Pippin and Spitzenburg are the two varieties to grow.

"Frequently one of our members will bring in an apple and ask how I like it," said Mr. Shepard, "It may be a good apple, and the man will tell me he will plant a lot of trees. Then I reason with him like this:

"'Yes, this apple is a good one, but is it better than a Newtown?'

"'No, it is not better than a Newtown.'

"'Well, is it better than a Spitzenburg?'

"'Oh, no; nothing is better than a Spitzenburg.'

"'Then why not stick to these two varieties? If this new apple has no points of superiority, or if in growing it we will have to compete in the markets with the same sort as grown elsewhere, why not stay with the Newtown and the Spitzenburg, when we have almost a mononoply of the markets for these sorts?'

"All of our growers are coming to see that we must make our money with these varieties, which reach such a high state of perfection here."

The illustrations show some of the typical scenes in the Hood River fruit country. Apples and strawberries are the great crops, although sweet cherries do remarkably well. This year Bing cherries were shipped by express to the City of Mexico and arrived in good condition. Planting of cherry trees is being increased, and in a few years this fruit will be added to apples and strawberries, to call attention to Hood River. We visited the farm of Mr. Chris Dittman, one of the members of The Fruit-Grower Family, and found one of the prettiest orchards in the valley. One of the orchards which were grown by Mr. Smith is now owned by another member of The Fruit-Grower Family, Mr. Vanderbilt, who showed us Newtown trees from which he has picked eight boxes of apples, in the process of thinning the fruit. This fruit was picked while quite small and was thrown away.

That takes nerve, but the Hood River growers have lots of this quality. It takes nerve to pay as high as $200 per acre for land, clear it of stumps and trees at much expense, then plant apple trees thirty feet apart, and give the trees the whole occupancy of the land, with no crops planted between; then to add the expense of cultivating this soil once a week during the summer—all this takes nerve, but it has demonstrated that the expenditure of money and labor pays.

Hood River is well located for shipping its apples. Before the locks were built in the river, which allowed boats to come up that far, freight charges were 10 cents a box on apples from Hood River to Portland. Steamers now stop at Hood River daily, and the rate to Portland, where competitive freight rates can be secured, is only 5 cents a box.

Across the Columbia from Hood River is another fruit section, which is being developed rapidly. This is the White Salmon country, in Washington. White Salmon berries have the advantage of an earlier location, and berries from that point are on the market a week to ten days ahead of Hood River fruit. Fine apples are also grown over there, and orcharding in on the increase.

The Fruit-Grower is under many obligations to Mr. Smith and to Mr. Shepard and to Mr. W. F. Laraway. Mr. Shepard has one of the finest locations in all the valley, his farm consisting of forty acres. Eight acres of strawberries last spring were very profitable, and he is now growing a fine young orchard. We regret we could not use all the photographs secured in the Hood River valley, but we present a number, which will give one an idea of the conditions which exist there. We believe that nowhere else in this country are orchards uniformly better cared for, nor is the fruit crop more carefully graded and packed. This has something to do with the high prices obtained for the fruit.

Complaint has been made from different localities that grasshoppers are very destructive this year. Here is where a flock of turkeys or guineas would do good service.

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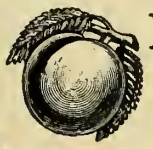

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In Eastern Oregon.

The first stop made by the Fruit-Grower man in Oregon was at Irrigon. This is a new town, in Morrow County, in eastern part of the state. It is familiar to Fruit-Grower readers, by reason of its having been advertised in our columns for several months.

Irrigon was laid out by the Oregon Land & Water Company, of which Mr. F. B. Holbrock is superintendent. Several years ago a ditch was put in, to irrigate some lands at this point, but the company at the head of the enterprise had not sufficient funds to carry the work to successful conclusion. The matter dragged along for a number of years, and finally the gentlemen at the head of what is now known as the Oregon Land& Wattr Company took up the work. The ditch has been extended, and now quite a tract of the land is "under the ditch."

The soil at Irrigon is very sandy, so very sandy that without water it will not produce any vegetation. But when water is applied, this black sand produces wonderfully. The gentlemen at the head of the enterprise had watched the development of the fruit industry at Lewiston, Idaho, and realized that the soil at Irrigon had wonderful possibilities in this line. Accordingly the ditch was extended, as stated, and the lands are now being sold to fruit and vegetable growers.

The special claim made for this place is that fruit and vegetables will be very early. Strawberries were ripe this year with the berries at Kennewick, Wash., and the first fruit in that country always brings very high prices. These berries come in two weeks before the Hood River berries, and have the market practically to themselves. Another profitable crop is melons. At the time of our visit watermelons were ripe at Irrigon, whereas in other localities visited up to this time they would not be ripe for several weeks. Shipments had begun at the time of our visit, and good prices were being received. We present an illustration of a portion of a watermelon field, not because this was an exceptionally good field, but because the lay of the land was such that a good photograph could be secured.

When the first ditch was put in one of the settlers planted some peach trees, which are now in bearing. We visited these trees, and found Crawford peaches ripe, of large size and of most excellent flavor. This fruit, if grown in quantities, would have brought very high prices on the markets at Portland, Tacoma and Seattle, for the only peaches on those markets at the time were from California, and were of indifferent quality.

The gentleman who showed us over the country at Irrigon stated that it was not the expectation that the soil was adapted to apple culture; it is likely too sandy. But for early berries and vegetables, for cherries, peaches and the European varieties of grapes he thought the spot had a great future. The land resembles some of the land at Lewiston, he said, and those persons who have inspected both propositions say that Irrigon has a very bright future.

Land is selling at $250 per acre, most of the settlers buying small tracts of about ten acres. An Easterner would hesitate to invest in this sandy soil at this price, for the proposition is something entirely new to him. But the lands are readily taken by growers who have had experience in the Western country and who have watched the development of the Lewiston country until lands are now worth as high as $1,500 an acre. Certainly the soil is very productive when once water is applied, and in the yards in town we saw some nice blue grass and white clover lawns, in this same black sandy soil.

It is claimed that Irrigon will produce the early berries for the Western markets, just as Texas produces the early fruit for the markets of the Mississippi Valley. If it will do this, the strawberry business there, as well as the melon and peach industry, will grow to large proportions.

EARLY WATERMELONS AT IRRIGON, ORE.

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Readers of The Fruit-Grower who need stoves of any kind will do well Kalamazoo Stove Company, Kalama-Kalamazoo Stove oCmpany, Kalamazoo, Mich., which appears in this issue. This firm has for many years been selling stoves direct to the retail purchaser at factory prices, freight prepaid. The company has sold stoves all over the country, with always the best of satisfaction. Every stove is sold on a positive guarantee, and so confident are the manufacturers that their goods will give satisfaction that they will send any stove on thirty days' trial. Certainly no proposition could be fairer, for the purchaser can then determine whether the stove is all that it is claimed to be. This method of dealing with its customers, together with the character of the goods sent out, is what has built up the wonderful business of he Kalamazoo Stove Company.

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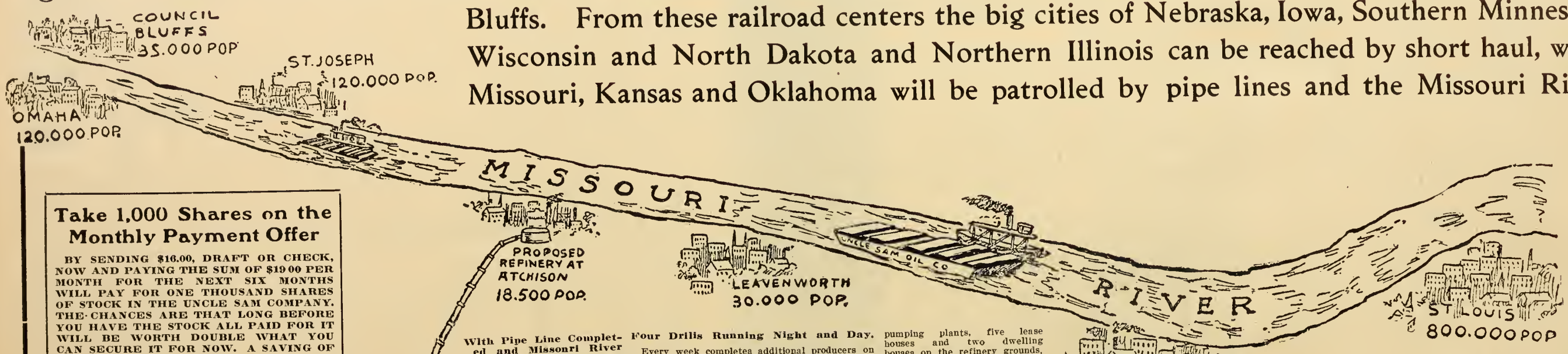

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Every week completes additional producers on the vast holdings of the Uncle Sam Company. Drill No. 1 is rigging up today for well No. 9. on the Uncle Sam central holdings just north of Cherryvale. There are seven producing wells within a quarter of a mile of this location. Drill No. 2 is within 100 feet of the oil sand on the holdings north of Peru. Drill No. 3 is at work right up against the Osage mountain south of Bartlesville. One of the largest flowing well in the Cherokee nation is within three-quarters of a mile of this location. Drill No. 4 is at work on lot 43, Osage. As before stated there are five producing wells already on this land, and only about 700 feet south is a well that started off at 200 barrels per day. There is bound to be found some big wells at some of these locations. The time to buy your stock is before they are completed. The company owns its own drill rigs, does its drilling at cost.

Special Offer of 10,000 Shares for $1,100.00

For a few days the company will make a special offer of 10,000 shares for $1,100. The stock can be issued to several different persons to suit purchaser in from 100 to 1,000 or a 10,000 share certificate. Better see a few of your friends and raise a club or pool and take this number of shares or send down your check or draft and secure them for yourself. This amount of stock in three years may mean a small fortune and pay you increasing dividends commencing at least in one year.

Can Complete 150 Wells Per Year.

With the drills now owned by the Uncle Sam Company we can drill over 150 wells every twelve months. The income from the two refineries and pipe line when completed will pay substantial dividends and run at least three

pumping plants, five lease houses and two dwelling houses on the refinery grounds, and a refinery completed at Cherryvale and now in full operation worth at least to the stockholders of the company a QUARTER OF A MILLION DOLLARS. (It's paid for, too.) They own a right-of-way franchise clear through to the Missouri river for a main trunk pipe line, and have forty miles of this pipe now on the ground at different points along the route. Workmen are now laying this pipe line and additional pipe is arriving daily. There are thousands of barrels of refined and crude oil in storage and thousands of dollars cash in the treasury. In addition to this there are over $120,000.00 subscribed on gilt-edged installment contracts for stock already allotted from the treasury. There are on a conservative basis oil rights and tangible assets, machinery, pipe lines, tank cars, drills, rigs and refinery back of this stock to the amount equal to more than 12 cents per share for every share now sold. There are now in the treasury over 38 per cent of the stock, which is now in good demand at prices offered in this announcement. The stock will all be sold in the next four months at prices ranging from 12 cents per share up to probably 30 cents per share, or will net the company close to $600,000.00 yet. This money will be used to complete the work mapped out and to develop the vast holdings of the company and will leave a good working capital in the treasury. You can figure for yourself what the earnings of this company must consequently be with the production from hundreds of its own oil wells, with two refineries and over 300 miles of pipe lines carrying the oil to the navigable waters, where, as before stated, we can reach the markets of the Central West, where we can secure a better price for oil than anywhere else in the world.

pipe line to the Missouri river and refinery number 2 on the banks of the Missouri during the year. It is running on schedule time. It has the pipe line well under way and work commenced on the refinery on the Missouri, and before the year ends will have them both completed. Now this is the kind of a company to invest with. It has kept its promise thus far and has gone past the doubtful stage, if there ever was one in its career. Hundreds of thousands of dollars have passed through the hands of the managers of the company and faithful accounting can be made of every cent. With great success already achieved and greater success in the future assured, the same old guard are in the traces working harder than ever. There are no swelled up guys connected with

principal cities of Iowa, Nebraska, South and North Dakota, Illinois, Minnesota, Wisconsin and Missouri, how long do you think it will be until the Kansas maximum freight rate law will be copied bodily and passed, word for word, in all of these states? As has been demonstrated, the people in all these states look with vengeance upon the aggression of the oil trust. The West does things. They will not stand idly by and see any band of robbers pillage one of the great industries in a sister state. The Western people know that the oil trust is practically stealing the oil from the independent producers in Kansas and Oklahoma. All that is needed to check these highwaymen is to place the Kansas maximum freight rate law and the anti-discrimination law on the statute books of the

Special Offer on 10,000 Shares, Monthly Payments

The company will accept a limited number of deals to one man or a club of men for ten (10,000) thousand shares at the lump sum of eleven ($1,150) hundred and fifty dollars on payment of $350 down, $350 in sixty day and $450 in 120 days. Contract binding company to fulfill its part of this offer will be sent by registered mail promptly on receipt of the first remittance. If you do not have the money right by you to make the first payment, send in a smaller amount to hold the deal for a few days, as this offer will not remain open long.

our company, no millionaire frenzied financiers; just the plain every-day, hard-working people, working for principle as well as financial gain and contending that any citizen has the RIGHT TO ENGAGE IN THE INDUSTRY OF PRODUCING AND REFINING AND SELLING PETROLEUM AND ITS BY-PRODUCTS WITHOUT THE CONSENT OF ANY FOREIGN THIEVING COMBINE. If you are willing to

completed. Two [illegible] already five producers, now going down on well No. 6, only about seven hundred feet from a well on lot 44 that started off at 200 barrels per day, and is now making over 50 barrels per day natural flow, and has been drilled in several months. On this lot 43 the company has room on proved grounds for 223 oilers. The oil is high grade, testing between 36 and 38, and is very valuable for refining purposes. The company will complete a pipe line from the Cherryvale plant to these holdings, going right through other large holdings of the company just north of Peru, where the company has something like nineteen thousand acres, three wells already completed and the drill down today within one hundred feet of the oil producing sand.

Thirty-Two Thousand Acres in All.

The Uncle Sam Company is pursuing the safe course of owning its own production. It has room for over six thousand wells on its different holdings. There are already NINETY-TWO (92) wells under the pump on properties owned and controlled by the company. We are independent. We have our own oil and when refined we can get what it is worth.

Uncle Sam Refinery No. 1 at Cherryvale Now Turning Out the Finest Grade of Oil Ever Manufactured in the West.

When you buy stock in this company you join a strong manufacturing concern. At Cherryvale Uncle Sam refinery No. 1 is now running full blast. This refinery is worth to the stockholders at least a QUARTER OF A MILLION DOLLARS. From this refinery are miles of lateral pipe lines connecting the bigger portion of the Cherryvale field. More lines are being completed. This refinery will he used to distribute the company's refined oils over the southern and central territory close by.

Storage and Distributing Stations for Kansas.

At Hutchinson, Topeka, Wichita, Salina and Concordia the company is putting large distributing and storage stations. In less than three weeks the company will be selling all the refined oil it can put out at Cherryvale and then some at these different points.

People Will Buy Uncle Sam Oil in Preference to Trust Inferior Goods.

The Uncle Sam Company is making a specialty of manufacturing a very high grade of oil. Our best oil tests 160 and better. From every section of the country comes in the report that the Uncle Sam Independent oils will receive a preference over the cheap trust oils. Don't wait until the company has everything complete and running like clockwork and then expect to buy stock at present prices.

Missouri River Refinery.

Few people realize the great work the Uncle Sam Company is hourly pushing nearer completion. In time the company will have a pipe line running clear across Kansas, pumping oil right to the doors of thousands of taxpayers of the state, besides reaching Topeka, a city of nearly fifty thousand people, and rapidly growing in manufactures. From the banks of the river the company can harge oil all over the Central West. An oil harge of 900-barrel capacity can be run clear to Omaha, where both refined and fuel oil brings a high price the year around.

Can Barge 900 Barrels to Omaha for $120.

To give you an idea of the great advantage of the river on which to deliver the oil, will say that upon careful investigation we find that an oil barge sufficient to carry 900 barrels can be run to Omaha and the boat returned for not over $120. Figure for yourself.

Can Pump Oil From Cherryvale to the Missouri River for Six Cents per Barrel.

The fact that we can pump the oil over our pipe line when completed for about one-fifth the present railroad rate and then from the river deliver it to about one-fifth of the population of the United States at very little cost ought to be argument enough to convince any fair minded man that stock in this company is a fortune maker. Suppose you did not buy over one thousand shares, you will have property that stands a good show of going to par, while you now can buy it for 12 per cent of par.

Forty Miles of the Pipe Line Now on the Grounds and Work on This End Has Commenced.

Every day will fiud this company nearer its goal. Work of laying pipe line is under headway. The pipe line will be completed as fast as the company can huild it without interfering with the huilding of refinery No. 2 on the hanks of the Missouri. We can pump the oil in the pipe line as far as we have it completed and tank car it the balance of the way in the event we should not have the entire pipe line completed by the time the refinery at the river is ready to receive oil.

Over One Hundred and Twenty Thousand Dollars Subscribed on Gilt-Edge Monthly Payments to Help Along This Work.

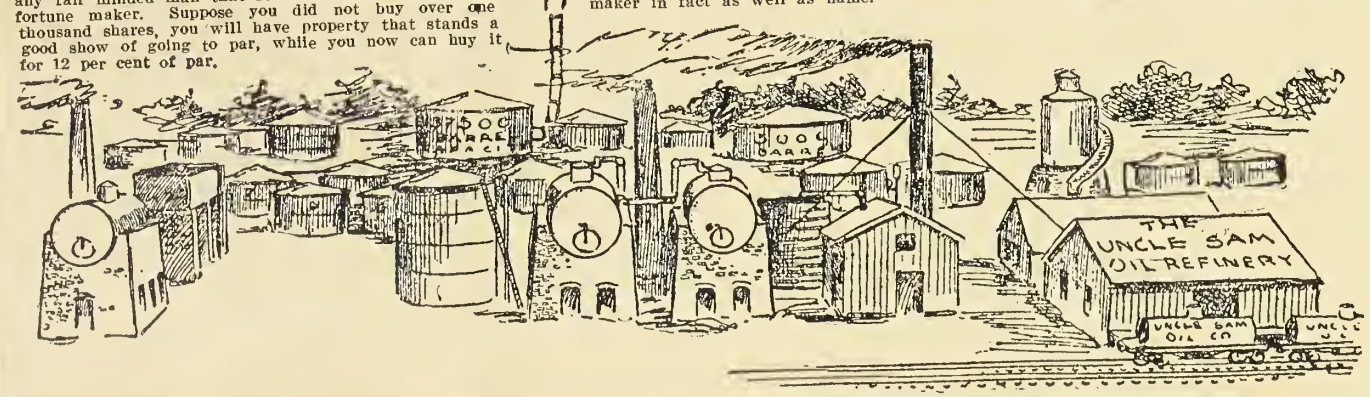
Besides the income from the refined oils sold from the Cherryvale refinery daily, the company has subscribed on gilt-edge monthly payments over $120,000. This money is coming in at the rate of from $900 to $1,500 per day. It will be but a matter of a few months until you will see another refinery completed and it will be hut a matter of time, in fact, until the pipe line is completed. Can you afford to let this stock get out of your reach with this great development walking right along? Just stop and think a minute where this company will be in a year. Don't you know, with this pipe line completed and two refineries and river barges that there will be very little of this stock to be had under $1.00 per share? Most everyone is looking for a good investment, and you will not have an opportunity very soon again to place your money where it will have an equal show to earn you great profits along with other small investors. This is a common man's company working for a good cause and hy securing this stock now your mouey not only will make you a good investment, but will assist to success the only independent company in the West that is strong enough to take care of itself and place its products on the markets of the world regardless of any combines or criminal rehate system.

Stockholders in Every State and Territory in the Union, Also Old Mexico, Canada and Philippine Islands.

When you join this company you join a band of over 5,000 strong, representing influential men from all sections of the country. From Maine to California, and from Canada to Old Mexico, unlimited financial aid is hourly pouring in for stock in this great company. The time to invest in an enterprise of any kind is while the work of development and construction is in progress. Now is certainly the time to secure your interest in this one.

Better Start Today Than the Oil Trust Had at the Beginning.

Stock in the oil trust oue time sold at $80 per share. It is now selling for over $600 per share. It is a well known fact that the Uncle Sam Company today has ten times a hetter start for the first seven months of its existence than the present oil trust had in the first two years of its existence. Refineries and pipe lines are not going to run away; they are valuable property. They will earn money while you sleep. Money invested in them is safer than in lots of trust companies of saving vaults. The stock cannot help hut double up in value by the time the Missouri river refinery is completed, while the chances are that it will treble, and with the pipe line completed it will put it close to par, or $1 per share. Then let a reasonable dividend be paid yearly for the next five years, and the greater part of the profits placed into developing our large oil territory, and you will find out that this stock will prove a fortune-maker in fact as well as name.



Second Pumping Station Will Be Near Topeka.

The second hig pump that will push the oil through the pipe line will be near Topeka. At this relay station plans are being made to run a hranch line into the Kansas capital city. The Topeka Commercial Club has promised the company assistance and Topeka will be one of the cities that will he furnished with fuel oil at right prices, as we can pump it right to the furnaces of her manufacturers from our Cherryvale plant. We can pump both crude and fuel oil over the same pipe line.

Fuel Oil Will Bring Good Prices at the Cities Along the Missouri River.

A trip along the river cities of the Missouri will convince any business man that fuel oil will command good prices. Within a half mile of where refinery number two will he hullt there are brickyards making brick with wood for fuel. Fuel oil is more practicable, is easier put under the furnaces and will readily find a market at such places as this. We can pump this oil from the Cherryvale plant to the Missouri river over our own pipe line now heing huilt for (6c) six cents per barrel. We can barge it anywhere from points on the Missouri river up to Omaha or down to St. Louis for 4 to 15 cents per barrel. We have plenty of this oil. Figure for yourself what the profits will he.

Will in Time Grow to Be the Greatest Independent Enterprise of Its Kind the West Has Ever Known.

It is not every day that the puhlic in general have the opportunity to invest with an enterprise like the Uncle Sam Compauy. It is the greatest independent oil organization ever launched west of the Appalachian mountains. It is hacked by public approval everywhere. It has stockholders enongh today to protect its interests. It does not depend as much on the dollar as it does upon the large number of its stockholders. Public sentiment in the West today is against the methods of the robber oil trust and the Uncle Sam Company depending upon the assistance of the common people in general is marching step by step to where it can place its products unhindered and free on the markets of the world at prices that will pay every shareholder. If you have not joined our hand, now over 5,000 strong, don't delay any longer, hut secure your stock now hefore an advance that is certain to come soon.

Financial Condition of the Comapny.

Authorized capitalization is $10,000,000. Divided into 10,000,000 shares of a par value of $1.00 each. There is no deadhead stock in the company. Every one who owns stock was compelled to huy it at a money consideration from the start. Every sharc of stock will draw the same amount of dividends as any other share. The stock is non-assessable. The company now owns and controls over 31,000 acres of oil and gas rights, which are rightfully termed in the oil belt. There are now ninety-two (92) oil and gas wells on different tracts of this vast acreage. There are oil and gas wells which have been developed on adjoining properties, too, several of these tracts in the last three months. The company owns outright three drilling rigs and owns 70 per cent of another. All four of these drills are being operated night and day, bringing in additional producers on the different holdings of the company. There are six or to take 5,000 shares at $500.00. This is a common man's company; the rights of the smallest stockholder will be fully protected.

Lines Will Reach Any Market.

Omaha, St. Joe, Kansas City and St. Louis will hurn twlce over all the oil that is being pumped from the wells in Kansas and Indian Territory. These are facts worth thinking over. Don't you see with the Uncle Sam pipe line and river harges we have a market that no trust on earth can interfere with and that our company will he free and independent and can secure for its stockholders the handsome profits that will naturally be earned?

The Size and Plan of Our River Barges.

The river barges will be built on the plan of the sand barges that you see every day along the river front, only considerably larger. They will draw two feet of water and will carry from 100 to 120 tons. Five flat tanks will he built crossways of the harge. The two center tanks will he larger than the end tanks. We will he ahle to load, say, 300 barrels of coal oil and gasoline, 75 to 150 barrels of lubricating oils, and about 500 barrels of fuel oil, and a few tons of wax and coke and asphalt. Our river boats that will tow these barges will also be loaded with products of the refinery, and can be built at a small expense. We will have our stations at St. Louis, Jefferson City, the two Kansas Citys, Leavenworth, St. Joseph, Nebraska City and Omaha and Council Bluffs, and fifty other good river points along the Missouri. Some people have hooted at the idea of the Missouri being navigable for this work. We know by investigation and experience that what we say here can be done, regardless of what any one says to the contrary. The Missouri river will prove to he the salvation for the oil producers and will raise the siege of the present oil trust oppression in Southern Kansas and Central Oklahoma. It is within our reach, and is a great and thickly populated territory, filled with people who love to see a sqnare deal and who will gladly purchase the superior qualities of refined oil from the Uncle Sam Company as soon as it can reach them.

Laying the Foundation for a Great Future With Hundreds of Stockholders All Over the Central West, the Kansas Maximum Freight Rate Law Will Go On the Statute Books of the Central West States.

With our refined oils laid down hy pipe line and river to within a few hundred miles of the are certain. Why not join the Uncle Sam company and do your part to help bring them about and realize the great profits that will be made and at the same time help a worthy canse?

Men Who Are On the Grounds and Can See What Is Being Done Buy This Stock.

Every day there are men from Cherryvale taking this stock at prices advertised herein. Every hanker in the town owns some of the stock. Most of the leading business men are investors in the Uncle Sam Company. Safe to say that it has more hackers at home than any enterprise of like nature in the United States. To the outside world there is not a single knocker against this company in Cherryvale, and that is saying a good deal, for there are generally some sore heads that plug every legitimate enterprise.

One of the Expert Still Men Took Five Thousand Shares Today.

As an additional confidence shown by those who are working at the plant we mention the ahove. One of the expert still men who just came from the East only a few weeks ago, unsolicited, walked into the office today and took 5,000 shares at $590.00. This man is an old refinery man and his judgment should certainly be good. If you will follow the example of this man you will probahly be glad of yonr investment in less than ninety days.

Within Five Hours' Run by River to St. Joe.

There are close to 100 barrels of refined oil being sold daily at St, Joseph, Mo. Besides this there are large packing plants and other manufactures that will be glad to buy fuel oil. We will have a pump right on the river harge and will pump oil ashore at our storage tanks at St. Joseph. We can reach St. Joseph in five hours over the river.

Keeping Its Promises and Completing Its Work.

Everyone who has followed the advertisements of the Uncle Sam Company from the start, now over six months ago, must admit that the company has "made good" from the word go. It promised to he selling refined oil from its Cherryvale plant in five months from the start, and did it. It promised to hnild a

Reasons Why the Company Can Sell This Stock at Practically a Sacrifice Price and Make Money by so Doing.

Most every successful enterprise that has in time paid handsome dividends has at some time in its career solicited the general puhlic to invest in its capital stock. You can readily see that with a few hundred thousand dollars more that this company can complete its pipe line and another refinery, and complefe its river harges and huild its tank station and drill adtional wells. We have the organization, have the work well under way, have thousands upon thousands of dollars already invested. $14 from this man, $33 from another, $60 from another, and from $100 to $1,000 from another, all added together, when you are drawing from the entire United States, soon runs into the thousands of dollars and makes it possihle to complete our great work and put our company on a dividend paying basis, where it can soon earn back all that it has sacrificed in letting you buy the stock at a price that is certain to make you good money. In other words, we need your capital to help make our properties more valuahle and offer you valne received.

Hundreds of Investors Have Paid What We Ask You to Pay.

When you buy this stock yon not only secure property that will greatly increase in valne, and in time pay dividends, hut you pay no more than hundreds of other investors who have fully investigated the merits of the company and purchased the stock at the same prices offered herein to yon. Bankers, merchants, laborers, farmers and professional men, who know the valne of a dollar, have during the last month purchased this stock at this price. If it's good property for them, why not for you?

PERSONNEL *of* THE COMPANY

JAMES INGERSOLL, President.
J. H. RITCHIE, Vice-President.
H. H. TUCKER, Jr., Secretary and Treasurer.

References: The Montgomery County Bank, the Cherryvale State Bank and the People's National Bank, all of Cherryvale, Kan.

Prices of Stock as Follows for Next Few Days:

100 shares, **$14.00**; 250 shares, **$33.00**; 500 shares. **$60.00**: 1,000 shares, **$120.00**; 5,000 shares, **$590.00**.

MONTHLY PAYMENT OFFER

100 shares, **$3.00** cash, six monthly payments of **$2.00** each. 250 shares, **$4.00** cash and six monthly payments of **$5.00** each. 500 shares, **$11.00** cash and six monthly payments of **$9.00** each. 1,000 shares, **$16.00** cash and six monthly payments of **$19.00** each. 3.000 shares, **$48.00** cash and six monthly payments of **$57.00** each.

Stock is non-assessable and the par value is $1.00 per share.

HOW TO SEND MONEY—Make all checks, drafts or money orders to the Uncle Sam Company or H. H. Tucker, Jr., and stock will be sent promptly by registered mail.

For Further Particulars Address

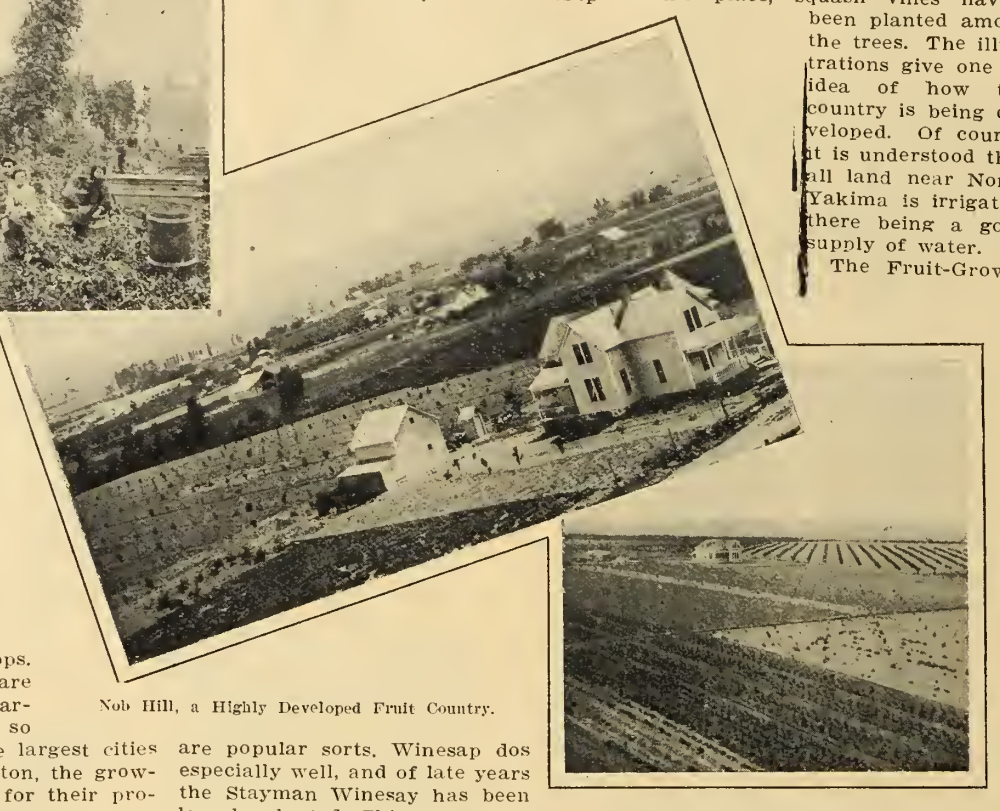
H. H. TUCKER, Jr., Secretary
Cherryvale, Kansas

The Yakima Fruit Country

When The Fruit-Grower representative arrived at North Yakima, he felt that he was among friends, for some of the best friends this paper has ever had are growing fruit in the Yakima valley. This locality is famed all over the northwest for the character and variety of its fruits. All kinds of fruits are grown there and all do remarkably well. Some of the best apple orchards are found there, and the same is true of peaches, prunes and pears, and cherries are also very profitable.

North Yakima is on the Northern Pacific railway, about 170 miles east of Tacoma and Seattle, and 230 miles west of Spokane. It is a town of about 9,000 inhabitants, and is one of the busiest towns of its size in the northwest. The country adjacent to the city is well improved, most of the farms being very small and all very productive. Fruit and hops are the most profitable crops. North Yakima fruits are in demand on all the markets, and being located so convenient to the three largest cities of the state of Washington, the growers obtain good prices for their produce.

Hop-Picking Scene.



Nob Hill, a Highly Developed Fruit Country.

One-year-old Ranch, Planted to Fruit.

Mr. T. W. Clark, one of the members of The Fruit-Grower family, who has written many articles for our columns, took our representative for a drive through the orchards nearest the city. Mr. Clark is perhaps a good specimen of the North Yakima fruit farmer. He went to North Yakima from the Dakotas, where he was a wheat farmer. He began to grow fruit in his new location, and has prospered. His farm is small—we believe he told us his home place contained twenty-eight acres—but it is all in fruit and produces good crops. In addition to this place Mr. Clark showed us several other tracts which he has bought within the last year or so. Most of this land cost as much as $400 per acre, and he told us it was bought for the rise in value.

"How do you expect to make money on land for which you pay $400 per acre?" we asked, for it was a new proposition to us to speculate in land at such a fancy figure.

"Why, the land is worth much more than that now," answered Mr. Clark, "and when I get some fruit planted on it it will be in demand at about $800 per acre."

We readily believed this, for shortly afterward we were shown ten acres of fruit for which the owner had refused $1,200 per acre.

Mr. Clark has a good crop of peaches and a fair crop of apples and pears. It was noted that the peach trees in the northwest are not cut back as they are in Georgia, Texas and in the best orchards in Missouri and Arkansas. However, Mr. Clark says he believes their trees would be better if they were pruned as severely as they are in the south, and he will experiment with some trees the coming season. Elberta is the most profitable commercial variety. Last year the crop was good, but no arrangement had been made to dispose of the cull and over-ripe fruit, but this year Mr. Clark and his sons have put in a canning factory, which will be used to can the smaller grade peaches, the bruised apples, and other fruits which may not be suitable for shipment. Tomatoes and other vegetables will be canned, the market for this class of goods being very good. Last year there was no market for small apples; this year they will all be canned.

We found that the strawberry crop at North Yakima was good this year, and prices were satisfactory. The growers here do not confine themselves to one variety, as they do at Hood River, and many sorts are grown. Nic Ohmer has been a good variety at North Yakima, and Senator Dunlap is reported as an absolute failure. Warfield is also worthless. Never before have we heard the Dunlap condemned as it was by some of the growers at North Yakima; this shows how varieties will vary in different parts of the country.

While Newtown and Spitzenburg apples are both grown, other sorts are not neglected, and Jonathan, Rome Beauty and Winesap are popular sorts. Winesap dos especially well, and of late years the Stayman Winesay has been largely planted. This variety, as a rule, attains a larger size than the old Winesap, but sometimes has not the deep, rich red of the older sort. Mr. Clark says that if the old-fashioned Winesap trees are not allowed to overear the fruit will be large and of remarkably fine color. Last year he thinned his Winesap trees, and when he showed some of the fruit at the fair he had to exhibit as Stayman Winesap, for the other growers would not believe the fruit was the old Winesap.

BARTLETT PEAR TREE AT T. W. CLARK'S FARM, NORTH YAKIMA, WASH.

L. B. Klnyon of North Yakima last year received a flag for having sent to the St. Louis Exposition the largest apple which was received there. The variety was Spokane Beauty.

Pears are very profitable. We were told of a sale of pears which was made shortly before the time of our visit. A grower named Nichols, living about nine miles from North Yakima, in what is called Parker Bottom, has ten acres of Bartlett pears. His crop of 8,000 boxes had been contracted at $1.10 per box, or $8,800 for the crop from ten acres. But this is not all: Bartlett pears are a short crop in California, and after this sale was made the price advanced rapidly, so that the crop could have been sold at the time we were there for $2.25 per box. Whew! $18,000 worth of fruit from ten acres! We will add that we did not see this orchard, but the story was well vouched for—in fact, we heard one story which was stronger than this one, but we hesitate to tell it, for fear it would be past believing.

The accompanying illustrations show typical scenes in the Yakima valley. We also present a picture of a part of a Bartlett pear tree at Mr. Clark's place, squash vines having been planted among the trees. The illustrations give one an idea of how the country is being developed. Of course, it is understood that all land near North Yakima is irrigated, there being a good supply of water.

The Fruit-Grower representative is indebted to Mr. Clark and to Postmaster Lemon for favors shown us during the stay at North Yakima.

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Cleveland as an Apple Market.

Cleveland, Ohio, has certainly been and is now one of the best apple markets in the country. The native crop in that part of Ohio is very light and the quality of the fruit not good. Early summer varieties, Astrachans, Duchess, Maiden Blush, Wealthies and apples of that sort have been selling up around $4.50 and $5.00 per barrel, with other grades and varieties ranging from $2.00 to $3.00 per barrel. MYERS, WEIL & DEUTSCH, General Commission Merchants, Cleveland, Ohio, are among the best firms in the apple line in the country and would be glad to hear from fruit-growers and shippers who will have either Fall or Winter apples to market. They also make a specialty of live and dressed poultry, eggs and game. Write or wire this firm when you want any information concerning Cleveland market.

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Fruit Trees on Credit.

The Gamble Nurseries, Oklahoma City, Okla., whose advertisement appears in this issue, are showing their faith in Oklahoma as a fruit country by arranging a plan whereby their customers can secure loans to pay for trees on ten years' time, not a dollar cash being required from the planter. This plan will enable any one to put out an orchard, and will interest many who have not felt able to plant trees. Mr. Gamble has had years of experience in the nursery business, and shows his faith in the future of the fruit industry by accommodating his customers in this way.

Wind Mills, Tanks, Etc.

The Leach Wind Mill & Tank Co., Joliet, Ill., whose advertisement has been appearing in The Fruit-Grower for some months, would like to hear from members of The Fruit-Grower Family who want wind mills or tanks of any kind. This is an old and well-known establishment, its goods are reliable, and those of our readers who desire anything in their line would do well to write them. Now is the time to fix up the water tanks before winter sets in. Write Leach Wind Mill & Tank Co., Joliet, Ill., today.

Attention is called to the attractive advertisement in the present number of The Fruit-Grower of the Omaha Cooperage Co., of South Omaha, Neb. This company are the recognized headquarters in the Missouri Valley and adjacent territory for all kinds of barrels and kegs. They turn out a tremendous lot of barrels every day, and can fill orders for apple barrels from one barrel to a thousand same day received. They employ a large number of men, and manufacture all their barrels by machinery, which enables them to fill orders promptly.

Irrigated Farms
In the Little Empire of the Western Slope

Profitable farm lands are scattered all along the line of the

DENVER & RIO GRANDE RAILROAD
"Scenic Line of the World."

In the valleys of the Grande, Gunnison, North Fork and Roaring Fork Rivers, and in the San Luis and Uncompahgre Valleys of Colorado, and the Farmington district of New Mexico—farming, stock raising and fruit growing are carried on in a way that is a revelation to the farmer in the East.

For those who desire to make new homes, there is no other region that offers more and better advantages than Western Colorado, a land of blue skies and sunshine, with a temperate and even climate, where the erstwhile desert needs but to be tilled and watered in order to verily "Blossom as a Rose." Several illustrated publications, giving valuable information in regard to the agricultural, horticultural and live stock interests of this great western section, have been prepared by the DENVER & RIO GRANDE RAILROAD, and can be obtained by addressing

S. K. HOOPER, G. P. & T. A.,
Denver, Colo.

EVERY CORN PICKER

should write for illustrations and descriptions of the largest line of WRISTLETS, FINGER PEGS, THUMB, CENTER and WRIST HOOKS, single or double, which are invented by an EXPERT HUSKER and also the kind which made Chas. A. Rennack famous by husking over 200 bus. in 10 hours.

R. N. THOMAS, Manufacturer,
Shenandoah, Iowa.

Prize Winning Canaries, Parrots, Dogs, Cats

All kinds of European and Domestic Animals and Birds on hand. Also full line of cages and supplies. Advice on sick pets free. Send for "Our Pet," published once a month by ourselves. Enclose a 2c stamp. Address

BIRD SUPPLY HOUSE
243 Adams St. Rochester, N. Y.

Fine Pecan Trees at Wholesale

TO PLANTER.

We have 15,000 finest quality, large, early-bearing, hardy, two-year-old Pecan trees, large, pretty size, only 10 cents each if order is sent now. Six trees free to any church; fine for yard. A fortune in Pecan orchard. Address

SQUARE DEAL NUT TREE NURSERY
Klondike, N. C.
Ref.—Com. Agencies, Ex. Co., P. M.

MONARCH Stump Puller

Will pull stumps 7 feet in diameter. Guaranteed for 12 months and a strain of 250,000 pounds. Catalog and discounts, address

Monarch Grubber Co.
Lone Tree, Iowa.

FOR CLOSE PRICES ON
Apple, Plum, Pear, Cherry, Peach and Grape Vines
WRITE
WOLVERINE NURSERIES
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Graves Peach

An early yellow freestone, ripening a week before Crawford's Early. Trees from the originator have seal attached. Prices free.

W. J. GRAVES, Originator
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FENCE *Strongest Made*

See how closely it is woven. Sold direct to the farmer at factory prices, on **30 Days Free Trial.** Your money back if not satisfied. Write today for free Catalogue.

COILED SPRING FENCE COMPANY
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The National Fruit Grower

ST. JOSEPH, MICHIGAN

A large, handsomely printed monthly magazine devoted to the fruit industry. Ably edited. Every issue full of good things. Latest and best methods of cultivation, handling and marketing all kinds of fruits. Articles from the best horticultural writers appear in its columns. WORTH TEN TIMES ITS COST.

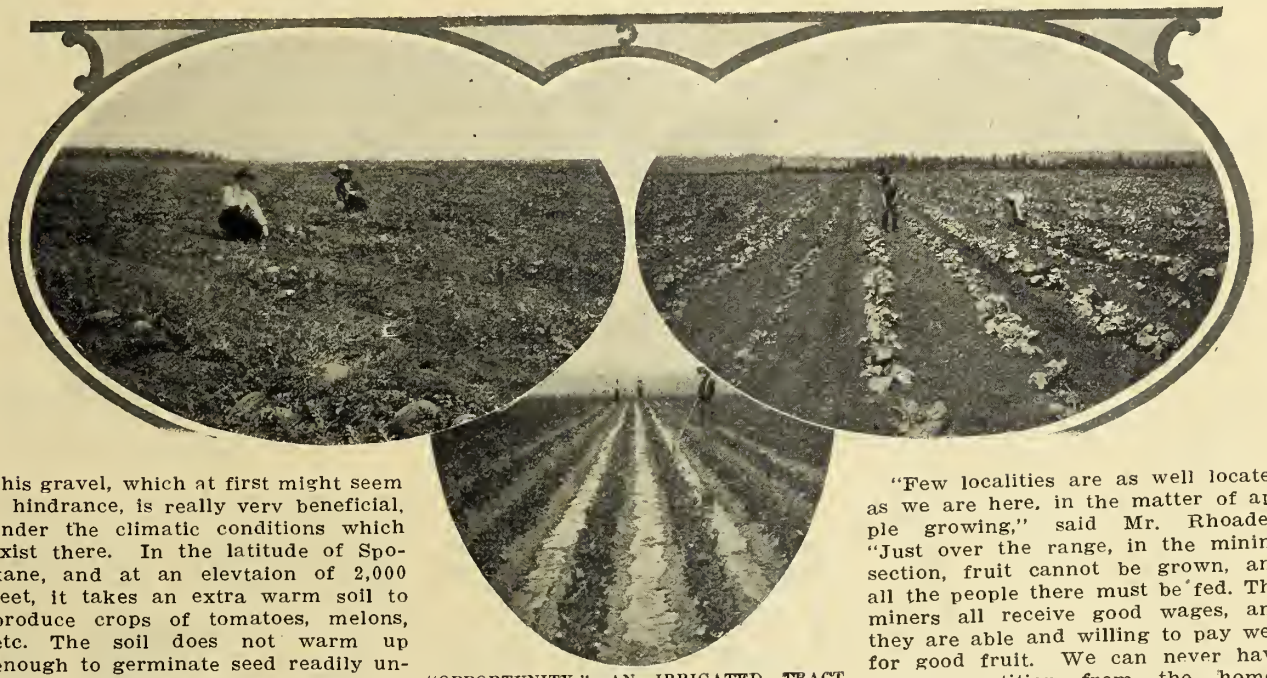
TERMS:—50c. per year; $1.00 for 3 years. Trial 3 months for 10c and 3 names and addresses of live fruit growers. Sample copy free.

Please mention paper in which you saw this ad.

Intensibe Farming Near Spokane, Wash.

While irrigation enterprises were being laid out all over the northwest, it seems that the country immediately adjacent to Spokane, Wash., was neglected, and attempts were made to grow fruits and vegetables with the natural rainfall. Little success attended this work, and several years ago Mr. W. L. Benham, at that time connected with the Great Northern railway, began to advocate the practicability of irrigating the valley by a gravity system from the lakes which lie in the foothills surrounding it. The idea was hooted at by many persons, but Mr. Benham and his engineer, Mr. McIntyre, persevered, and a small tract of land was placed under a canal which brought water about three miles, from Liberty lake. This was the beginning, and this work has been followed by other ditches.

The Fruit-Grover representative visited some of the fruit farms and gardens near pokane, and was surprised at the results which have been achieved in a very short time. The soil of the Spokane valley consists of a black, basaltic loam of exceeding richness and carrying enough gravel to conserve the heat and moisture.



"OPPORTUNITY," AN IRRIGATED TRACT NEAR SPOKANE, WASH.

This gravel, which at first might seem a hindrance, is really very beneficial, under the climatic conditions which exist there. In the latitude of Spokane, and at an elevtaion of 2,000 feet, it takes an extra warm soil to produce crops of tomatoes, melons, etc. The soil does not warm up enough to germinate seed readily until the spring rains cease, which occurs late in May. Gardens cannot be planted early, therefore, and must come on in a hurry when they start. The gravel becomes heated during the day and retains the heat during the night, so that plants of all kinds make a remarkable growth on this soil. In the season of 1904 the Spokane valley irrigators put their tomatoes on market on July 20. and the harvest continued uninterruptedly until October 1. Both watermelons and canteloupes came on about the same time and were available until the frosts of autmun.

This year the growers have abundant crops. Berries were good crop, and prices high. Indeed, the market is right at the door, for in addition to Spokane, with its 70,000 people, there are the mining towns in the immediate neighborhood, and Butte and Helena, Mont., only a short distance away. Although this land has just been placed on the market, and the proposition is an entirely new one, the following acreage has been planted this year:

Rocky Ford canteloupes, 136 acres; watermelons, 49; onions, 46; sweet corn, 119; string beans, 25; squash, 82; potatoes, 561; popcorn, 21; tomatoes, 64; cabbage, 46; miscellaneous, 205—a total of 1,354 acres planted where only a few years ago very little was grown.

At the time of our visit the canteloupe crop was very fine, and an expert had been employed to look after the handling of the crop. Tomatoes were ripening nicely, and selling at very high prices. The growers have made money, most of the tracts being small, and all well cared for. An electric line passes through the valley, leading to Spokane and to the Coeur d'Alene mines, so that the produce can be marketed more cheaply than it could be hauled to market by wagon.

This irrigated proposition, near Spokane, with its possibilities in growing small fruits, vegetables, etc., as well as the orchard fruits, was different from any we saw on the entire northwestern trip. But the most convincing proof that irrigation in the Spokane valley is on a solid basis is found in the amount of money being spent by the various companies in improving and developing their projects. The Spokane Valley Land & Water Co., the most of whose land is near Post Falls, Idaho, has about 1,800 acres under ditch, several hundred acres of which is now in crop and will be watered by a canal from Fish lake. They have near a quarter of a million dollars invested and their improvements are of the most substantial character. The Spokane Canal Co., has a large tract near Moab on the Northern Pacific railway on which they have spent a large amount of money in canals, ditches and other improvements. Several hundred acres are under cultivation this season and will be watered from Newman lake. The Modern Irrigation & Land Co., owns a tract of 3,000 acres four miles east of the city limits. This tract comprises the finest land in the valley and originally consisted of dairy farms. It is watered from wells; the water being raised by centrifugal pumps, driven by electric power. These wells tap the inexhaustible reservoir of water lying beneath the surface of the valley and which careful geological survey and tests have proven will furnish 40,000,000 gallons of water daily without decreasing the available supply. A large acreage of this land has been sold and much of it is in cultivation this season. Besides its productive value it has an attraction as a suburban home proposition in which every convenience obtainable in the city can be had. The Coeur d'Alene electric line touches the northern border and gives a good service; besides it is traversed through the center, its entire length, by the Sprague avenue road, the finest thoroughfare in the country, and will be served by a new electric line, projecting from the city to Liberty lake, and which will follow Sprague avenue road in a general way to the famous little pleasure resort.

It is hard to foretell the future of this favored section of the northwest, but it is an easy matter to imagine a prosperous and dense rural population in the Spokane valley as it is easily possible for the Spokane valley irrigated, to support a rural population of at least 20,000 people on its 25,000 acres of fertile soil now available for irrigation.

We present an illustration showing some of the gardens visited, which give an idea of the productiveness of the soil.

Wealthy apples sold for $2 per barrel, in the orchard, in the vicinity of St. Joseph, Mo.

J. W. Griffin, Warsaw, Ky., recently sent The Fruit-Grower a sample of his peach crop. The varieties were Chair's Choice, Diamond and Elberta. The fruit was of good size and well colored. Peaches are scarce in Missouri this year, and this fruit was much appreciated. Mr. Griffin says the Elberta crop was very fine this year.

Fruit-Growing in Montana.

Many persons are not aware of the fact that fruit culture in Western Montana is getting to be an important industry, but this is a fact nevertheless. West of the mountains, and protected by a range, is a section where apples are profitably grown. This year the crop there is good, and there is a large increase in the planting. While the apple crop in most of the Northwest is not as large as that of a year ago, in the section around Missoula, Mont., the crop is very heavy. In the valley adjacent to Missoula the trees are so heavily loaded that the fruit will be small in size. The few orchards near Missoula are not well cared for, but in the Bitter Root Valley are some very fine orchards, which receive the best of care.

At Missoula The Fruit-Grower met Mr. Rhoades, of the firm of Winstanley & Rhoades, who showed us about the surrounding country. Mr. Rhoades said that farmers who have cared for their trees have been making money growing fruit, the apples finding ready sale at near-by markets. Apples are packed in boxes, and the favorite varieties are Jonathan, Rome Beauty, Winesap, etc. The climate is adapted to apple culture, and this industry is growing. Hay and grain crops are also very profitable.

"Few localities are as well located as we are here, in the matter of apple growing," said Mr. Rhoades. "Just over the range, in the mining section, fruit cannot be grown, and all the people there must be fed. The miners all receive good wages, and they are able and willing to pay well for good fruit. We can never have any competition from the home-grown fruits over there, for they cannot grow any. In Butte, for instance, scarcely anything will grow, on account of the fumes from the smelters, and the people there must import everything they eat. Ordinarily it happens that where certain localities cannot produce the food supply needed by the inhabitants, they are also far removed from other places where the fruit can be grown, but not so in this case. It is not the distance which makes the difference in our case—it is the mountain range. We have to ship our produce only a few miles to get it into markets where very little can be grown. That is what makes our markets, and at the same time saves freight and transportation charges."

We found that buyers are in the Bitter Root Valley looking for apples this year. The apples grown there keep remarkably well, and are always in demand. The Fruit-Grower representative was there on August 15, and in some of the cellars apples of the 1904 crop were still in good condition. Only a couple of weeks before a carload of apples, which had been kept in an ordinary cellar built into the side of a hill, had been shipped East, where they brought fancy prices.

As we came east through Montana we found there were other localities where apple-growing is becoming quite popular. In the neighborhood of Billings, Wealthy, Duchess and apples of that class have been grown profitably, but the list of varieties which have been tested is not extensive. At Billings, however, a number of orchards which include all varieties have been planted, to test the climate. At this point an extensive country is being brought under irrigation by the Billings Land & Irrigation Company, which has some of the most beuatiful farming land one can find anywhere. Lands are advancing in price very rapidly.

The King David Apple.

Stark Bros. Nurseries & Orchards Co., Louisiana, Mo., announce in this issue of The Fruit-Grower their ability to handle large orders for trees of the King David apple. This is an apple which has been under test for several years, and has been commended by all who have seen it. While trees of the variety have been sent out from time to time, not until now has the company advertised the variety extensively, but now all orders can be accommodated.

The King David is a rich dark red apple, with yellowish flesh; flavor good, juicy and rich—indeed, the quality is of the very best. The apple is supposed to be a cross between Jonathan and Arkansas Black, and adds the quality of the former to the fine appearance of the latter.

The King David apple has been exhibited at a number of horticultural meetings, and several years ago was awarded the premium by the Illinois State Horticultural Society for the best new apple. Tree is hardy and vigorous, and great things are expected from the new variety.

In addition to the specialties which are carried by the firm, Stark Bros. announce that their general line of nursery stock was never better than at the present time. The growing season has been good, and everything is in first-class condition. The company grows stock at a number of different places, giving each line of stock the location, climate, and other conditions, which produce the very best growth. For instance, apple seedlings are grown at Atlantic, Iowa, grape vines at Portland, N. Y., etc.

The company reports that advance sales for fall and spring relivery have been very heavy, and the force of employes is now being increased, preparatory to the heavy business which will begin the latter part of September. Outlook for a record-breaking season is very bright.

Watsonville, Cal., has an exceptionally heavy crop of apples—one of the few localities sending this report.

A Great Fruit and Grain Farm in the Famous Bitter Root Valley in Western Montana

This great fruit aud grain farm contains 431 acres of very fertile land, all uuder a high state of cultivation, except about 30 acres of pine timber, which will cut about 100,000 feet of good lumber.

The land is located about 15 miles from Missoula on the railroad and good country road; railroad station on the farm. First class perpetual water right with farm; elegant, large, modern house; good spring water, fine barn and all kinds of first class farm improvements; splendid fencing; 13,000 bearing fruit trees of standard varieties. This orchard produced 8,000 boxes of apples and 500 barrels of vinegar in 1904. The grain land will produce 100 bushels oats or 60 bushels wheat to the acre. There is a meadow that will cut 100 tons of timothy hay this year (1905).

This farm could be cut up into several tracts and run profitably. It is a money maker and will pay 25 per cent on investment. The price is only $75 per acre, which is much less than it is worth; it is a bargain at this figure. The 13,000 fruit trees alone are worth the amount we are asking for this great farm.

Get together, a company of you, and send your representative here, and if this is not better than we claim, we will pay all expenses.

The famous Bitter Root Valley, in which this immense farm is located, is one of the greatest fruit sections in the west—fine fruit and splendid markets.

Write us about this great farm and we will give you all the particulars.

Winstanley & Rhoades

REAL ESTATE DEALERS :: MISSOULA, MONTANA

Western Irrigated Grain and Fruit Farms a Specialty

Questions and Answers

J. B., Polk City, Iowa.—(1) What are Marianna plum cuttings, and how are they made? (2) Is the Marianna plum good for market, or what are they used for?

Marianna plum cuttings are made as follows, the method being taken from booklet No. 1 of the Brother Jonathan series: "In early winter the twigs of the last season's growth may be taken and cut into sections about six or seven inches long and stored away in green sawdust like apple scions. The cuttings are planted in spring in a well-drained soil. A furrow with one straight side may be opened up with a small turning plow and the cuttings planted therein by standing them up, leaning slightly toward the south against the perpendicular wall of the furrow, and have the earth packed tightly around them, especially near their base. The cuttings should be planted with only one or two buds left above ground. They will take root and make a growth large enough to bud the same season." (2) The Marianna is not a good plum to plant for market.

J. B., Hillsboro, Ill.—How can I distinguish between a fruit bud and a leaf bud, when budding? The buds live, but do not start a sprout. I cut the top off early the following spring. What is the trouble?

Fruit buds are usually more plump than the leaf buds, the latter running more to point. In budding peaches it will usually be found that at least one of the buds, where two or more occur together, is a leaf bud, so that there should be no trouble on this score. If the buds live, a shoot should be put forth the following spring.

U. G. S., Stanberry, Mo.—Will someone report their experience in favor of or against the practice of allowing hogs to run in their orchards?

This plan is generally condemned, although some orchardists have had no injurious results. The arguments against the practice are that the animals pack the ground in the orchard, causing it to evaporate its moisture very rapidly. Then, too, young trees are often injured by the hogs rubbing against the trees. Those who favor the practice claim the hogs will do little, if any, damage to trees which have become well established, and that the animals destroy many insects by eating the fallen fruit. Generally speaking, hogs are not allowed in the orchards of the best growers.

J. C. B., Saluda, N. C.—Will someone give me a plain, comprehensive formula for preparing fungicide and insecticides, by the dry process, through the best horticultural paper on earth?

We would like to hear from some of the advocates of the dust process, giving the latest information obtainable on this subject. Some time ago this question was asked of one of the manufacturers of a dust spraying machine, who has claimed that great success follows his use of the dust process, but it developed that his formulas are not to be made public. The experiment stations are at work on dust formulas, and we would like to hear from them and from growers who have had experience which is satisfactory.

To Keep Cider Sweet.—In the July number of The Fruit-Grower, W. H. H., Cotopaxi, Colo., wants to know how to keep cider sweet. I have kept cider from fermenting without using any poisonous drugs, nor is the cider injurious to any one. I could send a sample of cider made last fall if you wish. I have the only method of keeping cider sweet—and I have tried many—that is, the only method that will do this effectually, without injuring the juice for the most delicate person. Any one interested can write me.—John Heise, Hamlin, Kan.

J. S. M., Fulton, Ill.—Two years ago last spring I planted a dozen cherry trees, and one year later I planted three dozen more cherry trees, together with a dozen apple trees and a dozen plum trees. They are all on good land and have made remarkable growth. Everyone who sees them says they are a fine lot of trees. The older cherry trees had a few cherries on them last year, and fewer this year, although the trees are much larger. A nursery agent says the trees have too much top. Do you think they really need pruning? And if they do, when should it be done?

Cherry trees two years planted will not bear much fruit, and you need not feel disappointed that they did not fruit this season. Cherry trees require very little pruning—only enough to cut out crossed limbs—and it is hardly likely that your trees need any great amount of pruning at this time.

A subscriber of The Fruit-Grower writes to ask if any of our readers can tell how to make "turnip kraut." We confess that this is a new one on us, but perhaps some of our readers know about this. Can any one furnish the information? This subscriber says he ate it when he was a boy, and that it was good.

A. L. P., Kansas City, Mo.—I have some raspberry and blackberry plants, set out this spring, which are making a luxuriant growth, but are spreading out on the ground, and are sending up a lot of branches—perhaps twenty to a plant. Is there a way to make them grow up straight and to concentrate their growth in the original stalks? Should they be trimmed now or wait until danger of winter-killing is past? How should the plants be trimmed?

Raspberry and blackberry canes are usually pinched off at a height of eighteen inches to two feet, to make them branch, for growers do not want them to grow up tall. This pinching causes the plant to throw out laterals, making many fruit-bearing canes for the next season, where otherwise there would be only one. Failure to pinch out this top would allow the canes to grow longer. Most growers prefer to wait until spring to cut out the old canes of the berry plants, although others do the work either in the fall or immediately after fruiting time. There is usually little time after the fruit is gathered, however, so that most growers do the pruning in fall or early in spring.

R. McK., Loomis, Neb.—The question has been asked me as to whether the trunk of a tree grows longer or not That is to say, if a tree has a fork four feet from the ground at six years of age, will that fork ever be any higher from the ground? Some say it will, others say it will not.

The fork will never be any higher. Trees make their growth at the end of the branches, and the trunk is not lengthened as the tree becomes older. If this were not so, an orchardist could head his trees low at planting time, and in a few years the limbs would have grown beyond his reach. And this, as everyone knows, is not the case.

W. M. C., Rocky Ford, Colo.—I have the Lucretia dewberry, but it doesn't seem to do well in this climate. The leaves turn yellow as if blighted, or like some plants look when too much water is applied. This is the fourth year; have had two very good crops. Plants commence to blight the second year, and have been growing worse, until this year scarcely any berries matured. Do you know of any method to prevent this? Or is there any other variety which will not be affected? How about the Austin dewberry of Texas?

We would suggest that specimens of the leaves be sent to the Colorado Experiment Station, Fort Collins, Colo., where the disease may be identified. The editor of The Fruit-Grower saw Lucretia dewberries doing well in irrigated sections of the Northwest, so that perhaps the trouble is not due to irrigation at all. Other varieties might be better able to resist the trouble than Lucretia.

I. L. W., Gardiner, Maine.—(1) Is there any merit in the plan of selecting scions from bearing trees for top-working purposes, and does this apply to tardy bearers, like Spy, particularly to secure early bearing? (2) Will an early-bearing stock, like McMahon, if used for top-working, produce fruit sooner than a tardy-bearing stock like Spy, used for the same purpose? (3) If the answers to questions 1 and 2 are affirmative, then why should not McMahon be the best possible stock for top-working to Spy, in order to make Spy an earlier bearer? (4) What are the defects of McMahon as a stock for top-working?

Answer by E. H. Favor, Missouri Exp. Station: (1) Scions selected from trees which are known to produce well will, on the average, give more fruitful trees than if the scions are taken year after year from trees which have for generations never borne. (2) If it means to use McMahon and Spy for stocks, where top-worked, I would say that there would be no difference in the time the scions would begin to bear, if the scions on the two stocks were of the same variety. It is still an unsettled question whether the stock influences the fruitfulness or time at which the tree comes into bearing. (3) If Spy were top-worked on McMahon stock it is doubtful whether it would come into bearing earlier than on any other stock. (4) McMahon as a stock for top-working has no more defects than any other fast growing kind. If it were worked over with some slow-growing kind an unshapely tree might be the only bad result.

J. A. M., Romance, Mo.—(1) What plum is used by the Southern Illinois fruit-growers to dry as a prune? (2) Is there a raisin grape that will stand this climate? If so, what variety? (3) Will English walnuts stand this climate? (4) Will any of the thin-shell pecans stand this climate? If so, what varieties?

Answer by E. H. Favor: (1) I do not know what plum the Southern Illinois growers use to dry as a prune. (2) None of the true raisin grapes such as are grown in California will thrive in our Missouri climate. They may grow for a while, but are not profitable. (3) English walnuts are hardy as far north as New York and in the middle and southern states often bear well, but their cultivation on a large scale has never been attempted outside of California. (4) Pecans will grow readily in your climate. Among the thin-shelled sorts Century, Paragon and Jewett are promising kinds.

W. M., Goodenow, Ill.—(1) I would like to hear from someone who has had experience in laying down blackberry canes and covering them for protection during the winter. What is the best material to put on top of them? (2) The grasshoppers are eating up a great deal of my garden stuff; they have cleaned up all young lettuce plants, have about finished the watermelon vines, and have taken the bark from the asparagus brush and the young leaves from young fruit trees and shrubs. There seems to be millions of them. Can anything be done to check their ravages?

Who has had experience laying down the plants? But is it necessary that they be covered, in Illinois? The Ne-

Over 300 Acres of Young Nursery Stock

Indianapolis and Plainfield Electric Cars pass our office hourly, 30 minutes' ride from Indianapolis.

A full line of general nursery stock for Fall, 1905 and Spring 1906.

Apple, Peach, Pear, Plum, Cherry, Carolina Poplar, Box Elder, Catalpa, Silver Maple, Norway & Hard Maple, and other Shade and Ornamental Trees—in car load lots or assorted car loads. Also large stock of Ornamental Shrubs, Vines, Evergreens, Roses, Small Fruits, Apple, Pear, Plum, Cherry and other Seedlings, Forest Seedlings, Etc.

Shipments from Bridgeport, Ind.; Topeka, Kan., or Dansville, N. Y.

We invite your *personal inspection of grounds, packing houses, stock, etc.*

Packing and shipping facilities are the *best.* Stock stored in fall for winter or early spring shipments. Our *spades* are the *best and cheapest* made. *Excelsior* (baled dry), the best packing material either for storage or shipping.

We hope to have chance to price your list of wants.

Trade List ready. Send for copy.

ALBERTSON & HOBBS

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and we will make good any dissatisfaction that could arise. Our sales are enormous—and growing larger every year. We are manufacturers and can sell high quality buggies at about one-half the price you would pay your local dealer for the same goods. YOU NEED NOT SEND US ONE CENT. Use the buggy for thirty days and if you are not entirely satisfied return it at our expense. We manufacture a large number of different styles and can furnish any particular style desired. Send for large, free, illustrated buggy and vehicle catalogue which tells how to get an OLD HICKORY BUGGY on THIRTY DAYS FREE TRIAL, and will prove to you that we can SAVE you ONE-HALF ON YOUR PURCHASE.

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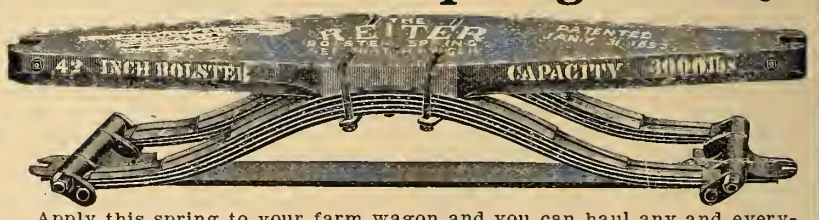
Reiter Bolster Spring

Best in the world
See that Hanger?



Apply this spring to your farm wagon and you can haul any and everything equal to a spring wagon and at one-half the cost. Every fruit-grower should have one. For prices and full particulars write the inventor and maker. **W. C. REITER, Franklin County, WAYNESBORO, PA.**

Vincennes Nurseries

Vincennes, Ind.

W. C. REED, PROPRIETOR.

Apple, two and three year. Special prices on large orders of Ben Davis and other commercial varieties.

Standard Pear, one and two year. Fine lot Keiffer.

Cherry, one and two year.

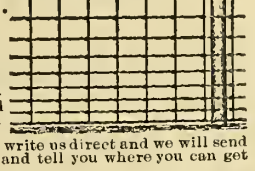
Catalpa and Black Locust Seedlings.

Roses, Shade Trees, etc.

Send us a list of your wants. Personal inspection invited.

AMERICAN FENCE TALKS
By the Makers

There are many fences on the market. Some tell of their wonderfully hard wire; others speak of new form of construction that make all other forms look ancient and worthless. But through all this it remains a fact that more miles of American fence are in use than of all others combined, and will continue so.



American fence is for sale by the dealer in your town. You can find it there, examine the different styles and make a selection to suit your requirements. Or, write us direct and we will send you a catalogue and tell you where you can get the fence.

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NURSERY STOCK
Of All Kinds at
WHOLESALE.
Send us a list of your wants for prices. We will save you
MONEY.
Write Us Today and Be Convinced.
Agents wanted everywhere.
Hart Pioneer Nurseries
Ft. Scott, Kan. Box 1.

The Mondamin or Good Luck Pin
Nobel, Neat and Attractive
Better than Gold or Diamond. The young man wants it. The young lady wants it
Made of the traditional maize ear. Symbolizes American Independence.
Send 25 cents, in stamps or money order, for one of these Good Luck Pins. You will also get the pin's complete history. Rich with sentiment.
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Nursery Stock
We can fill your wants in Strawberry, Raspberry and Blackberry Plants; Grapes, Currants, Gooseberries, Trees, etc., for Fall or Spring delivery. Write us your wants and we will endeavor to please you.
ELMHURST NURSERY,
M. E. Chandler, Prop. Argentine, Kan.

Hardy Northern Grown Trees and Shrubs
Healthy, vigorous, productive and free from insect pests. NONE BETTER or cheaper. No traveling salesman can compete with us in price, quality considered. Get Free Catalogue.
GEORGE H. WHITING NURSERIES,
Lock Box No. 1110, Yankton, S. D.

GINSENG
All unsold stock of the Gentry Ginseng Gardens to be closed out at greatly reduced prices. Correspondence solicited.
W. S. GENTRY, SEYMOUR, MO.

300,000 CARDINAL
300,000 Cumberland and Haymaker Raspberry Tips. Fifty varieties of Strawberries. Send for wholesale prices to
G. S. CHRISTY, JOHNSON NEBRASKA

Fruit Plants
Strawberry, Blackberry, Red and Black Raspberry, Grapevines, etc. Well rooted plants for Fall and Spring setting. We have nice stock of Aroma Strawberry Plants, one of the best late varieties grown. Prices reasonable. Catalogue Free.
E. MAUDLIN'S NURSERY,
Bridgman, Mich.

Grafted Pecan Trees
Best paper-shell varieties. For price and descriptive list write
C. FORKERT, OCEAN SPRINGS, MISS.

braska Experiment Station, as well as other stations, has used a "hopper doser" to get rid of grasshoppers. Write Nebraska Experiment Station, University Place, Neb., for report of experiments.

H. H., St. Marys, Kan.—When is the best time to trip arbor vitae hedge? (2) How far apart should I plant currants, raspberries and blackberries?

Answer by E. H. Favor: (1) An arbor vitae hedge may be pruned at almost any season of the year. If it is desired to keep the hedge looking at its best throughout most of the season, the pruning should be done just after it has finished making its season's growth, as then the shape which is given it will be retained till the growth starts next year; but this has a tendency to weaken the shrubs slightly. Pruning early in the spring is not open to this objection, but the hedge will not appear as shapely throughout the summer season and following winter. (2) Currants are planted from four to six feet apart each way. The latter distance being preferable, as it leaves plenty of room between the plants for cultivation, picking and pruning. In a hedge row they may be planted closer together in rows. Raspberries and blackberries are set three feet apart in rows which are from five to ten feet apart, depending on the vigor of the variety.

C. E. R., Zionville, N. C.—I would like to have a recommended list of grapes for this section; want six varieties, two black, two red, and two white. Want varieties which are adapted to market. (2) Is the King grape, which was described in a recent issue of The Fruit-Grower, as free from rot as the Concord?

It is hard to recommend a list of varieties for your section, on account of the difference in soil, markets, etc., and other conditions which govern the Mississippi Valley. Would suggest that you write the horticulturist of the North Carolina Experiment Station, Raleigh, N. C., for a list which has been tested.

C. H. C., Kangley, Ill.—Will you please describe the Cardinal raspberry so that I could recognize it if I saw it growing? (2) And will you tell me what the "orange rust" of blackberries is like? My plantation seems to be all right during the picking season, but after the foliage seems to get blistered. It does not cover all the leaf, but makes a round spot larger than a silver dollar. It has done this last year, and is commencing this year. (3) Our Cumberland raspberries look all right, and bore very well, but some of the canes withered before the season was over and spoiled lots of berries. I suppose it is anthracnose. As I have had no trouble before this year, I cannot tell what is wrong.

Answer by E. H. Favor: (1) The Cardinal raspberry is one of the purple cane red raspberries, similar to the Shaffer. It is usually a strong grower, producing a fairly hardy cane. The fruit is roundish and somewhat flattened, of a dull purplish red color, quite soft and juicy, with a sprightly flavor, but not altogether pleasant; it has a peculiar aroma similar to that of Shaffer. Considered to be somewhat inferior to Shaffer in fruit, but is more hardy. (2) Orange rust of blackberries and raspberries attacks the young canes of the plant, producthe young canes of the plant, producblisters between the ribs of the leaves. These blisters are of an orange yellow color and filled with the powder-like spores. The fungus causing this disease is perennial in its nature, living within the heart wood and pith of the canes, and reappears each year in the new wood. Plants which are attacked by this fungus seldom recover; they should be dug up and burned as soon as discovered and no young plants should be removed from them, since the mycelium of the fungus extends down into the roots and new underground shoots. Keeping the foliage of the plants covered with Bordeaux mixture early in the spring will help to keep other plants from becoming affected. (3) Anthracnose attacks the older canes and finally the young shoots of the raspberries, producing a spotted appearance. These spots are at first purplish, finally becoming whitish in the center and sunken. They often run together when numerous, and will encircle the canes. During the second season the spots dry out, producing cracks in the wood and causing the bark to scale. Treatment for anthracnose should consist of cutting out all affected canes and spraying the plants thoroughly early each season. This will reduce the amount of damage, but not entirely check it the first year.

F. F., Hagerman, N. Mex.—(1) Please describe the plant nasturtium, and where can I get seed of it? (2) Also what kind of a weed is this inclosed, and does the root live over winter here, and how can it be got rid of easiest?

(1) Nasturtium is a verry common ornamental plant, seeds of which can be obtained from any dealer in flower seeds. There are both dwarf and tall climbing varieties, both of which bear a profusion of bright yellow or red flowers. The foliage is of a delicate bright green color, forming a beautiful contrast with the many colored flowers. (2) The weed which you send is one of the common tick seeds. It is an annual, and where very numerous will undoubtedly be troublesome. The only thing that can be done to thoroughly rid a field of it is to keep in good cultivation for two or three years. It will then be killed out; but unless the neighboring fields can also be kept clean it will be only a year or so until all is reseeded again. In case the field cannot be plowed the weeds can be kept in check by mowing two or three times during the summer just as the plants are coming into bloom.

W. K. M., Horatio, Ohio.—(1) Can the testing of Bordeaux mixture with ferro cyanide of potassium be relied upon as safe? (2) Should the 6-6-50 Bordeaux injure the foliage or fruit if properly neutralized? (3) Which is preferable, making currant and gooseberry cuttings in the fall and planting them at once, or heel them in a trench until spring, with coarse manure over the butts? (4) Are the cuttings of poplars best planted in the fall or spring; also blackberry and raspberry root-cuttings? (5) Which method of propagating red raspberries is best, suckers or root-cuttings? (6) Give best distance for planting currant, grape and blackberry cuttings in nursery rows. (7) Can the hardy roses be propagated by the use of hardwood cuttings in the fall and handled the same as currant and grape? (8) What is the best length for making rose cuttings? (9) Give best method for propagating the quince. (10) Which makes the largest tree at two years, piece-root graft or bud, reckoning the age from the beginning of the growth of the bud? (11) Is the height of nursery stock reckoned from the crown up or from tip to tip? (12) Is it advisable to cultivate nursery stock late in the fall? (13) Should nursery trees be headed-in in the fall or spring? (14) How is the barberry propagated? (15) About what is the average height for the heading-in of apple, plum, cherry and dwarf pear? (16) What are "cut-backs," as referred to nursery stock? (17) Are they inferior? (18) If nursery stock fails to make enough growth the first year for the forming of the head, should it be cut back to the ground, and then form the head the following year?

Answer by E. H. Favor: (1) The ferro-cyanide test for Bordeaux mixture can be relied upon as safe, providing the necessary amount of lime is mixed with the copper sulphate. If there should be carelessness in mixing the lime and copper sulphate, the ferro-cyanide test would not be entirely correct. (2) The 6-6-50 Bordeaux should not injure the foliage of apples to any extent, but will injure that of the plum and peach, as these fruits are more sensitive to copper sprays. However, you will experience less injury for all fruits if you reduce the strength of the mixture to 4-4-50. (3) It is usually thought best to put hard wood cuttings in a callous pit, as you suggest, during the winter. The cuttings will then have become calloused before spring and make a better growth than if planted directly in the field after being cut from the parent plants. (4) Cuttings of poplars may be made during the early part of the winter, before freezing weather, and stored in a callous pit or green sawdust during the winter, then planted in early spring. Blackberry and red raspberry root-cuttings can be handled in the same way, or not made till ready to plant in the spring, the planting in all cases being done as soon as the soil becomes into workable condition. (5) Plants of red raspberry or of the blackberry are thought to be better when produced from suckers rather than root cuttings, although the difference is very slight, if any at all. (6) A good distance for currant, grape and blackberry cuttings in the nursery row is from six to ten inches; this allows plenty of room for the young plants to grow, and also for cultivating. (7) Cuttings from the hard wood of the hard yroses can be handled in the same manner as for the currant or grape, although the difficulty of getting well-rooted plants is considerably greater. (8) The length of a rose cutting will vary with the kind of rose and manner of treating the cutting. The cuttings are generally made so as to include at least three buds. Where hard wood cuttings are to be grown out of doors, they may be made longer than this. (9) The quince can be propagated from hard wood or root cuttings, from mound layers, by root-grafting or budding. All of these methods are used, although those propagated are liable to sprout more or less when planted in the orchard. (10) Budded trees will make a larger growth than grafts, but it is a disputed question as to which are best for general planting. (11) The height of nursery stock would be reckoned from the crown to tip of longest branch. (12) The danger of cultivating nursery stock late in the fall would be in stimulating the trees into too late growth, thereby making them liable to suffer damage from hard freezes during the winter. (13) The heading in of nursery stock can be done at any time during the winter or before growth starts in the spring. If done in the winter those branches which have been winter killed can be removed. (14) The barberry is propagated from seeds or hard wood cuttings, the cuttings being handled in the same manner as any other hard wood cutting. (15) In Missouri the height for the head of the apple tree is considered best at about two feet, in your location it is made somewhat higher. (16) I am not familiar with the term "cut-backs" as applied to nursery stock. (17) If it means the removal of the top from unsold trees so as to make them form a new head, it might make as good a tree as one with a normal head, but there may be some difficulty in disposing of such stock to a careful buyer, owing to the unshapeliness of the trunk. (18) I cannot answer this question.

Subscriber, Indiana.—(1) Is the trifoliate orange mentioned on page 224, 1904 year book, department of agriculture, identical with the osage orange? (2) In farm forestry strip plantations (page 261, year book) walnut and catalpa are to be planted four by six feet. Is this permanent or to be thinned when a few year's growth has been made. Also, what do you think of the fence row idea there set forth? What effect will either strip or row plantings have on adjacent orchards? Are not forest trees bad neighbors? (3) What is and who handles the "Thompson seedless" grape mentioned (page 376, year book)? Neither Stark, Green, Storrs, Henderson, nor Maule list it in their catalogues. (4) Is there any hardy, good quality, seedless grape that will grow in Indiana? (5) Are the ordinary Concord, Clinton, Niagara, Diamond, Worden, etc., family types of grapes considered to be stocks resistant to phylloxera? If not, what grapes are (speak English or American, please, not Latin in answering this question!)?

Answer by E. H. Favor: (1) The trifoliate orange is not identical with the osage orange, the latter being our common hedge plant. (2) The catalpa and walnut plantings mentioned in the year book are undoubtedly to be thinned when they begin to crowd each other, removing the weaker and less desirable trees. In windswept sections of the country where it is necessary to have a wind-break of some sort, the fence row idea of planting is a good one, and is quite extensively used in some sections of the West. Forest trees are sometimes troublesome for neighboring orchards, but if kept clean, as they should be in the fence row system around an orchard, they will not cause any serious damage, compared to the amount of good they will do as wind-breaks. (3) The "Thompson seedless" grape is one of the raisin grapes of California. It can probably be obtained from any California nurseryman. (4) I know of no seedless grape that is grown in your section. (5) The grapes you mention are of American origin and when growing on their own roots or on roots of other American grapes are not subject to damage from phylloxera. Only the European grapes on their own roots are injured to any extent from this insect.

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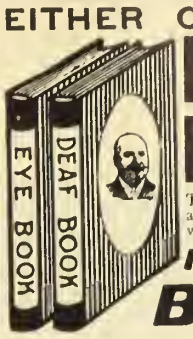

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Prosser, Washington.

Yakima county, Washington, used to be a very large county, but recently it was divided and a new county formed, with Prosser as the county seat. This little town is in the center of a good country, and is growing rapidly. It is on the Yakima river and the Northern Pacific railroad, and has the benefit of much of the trade from across the Yakima country, under the Sunnyside canal. Prosser has the benefit of splendid water power from the falls of the river, and arrangements are now being made to utilize this power, in furnishing electricity for lighting and for the operation of electric railroads out into the densely populated country.

Besides the land which is under the two large canals, thousands of acres of wheat are grown near Prosser without irrigation. The methods of handling this soil for wheat are very interesting. Early in the spring there is plenty of rain to prepare the ground and at that time the soil is prepared for planting. With little or no rain during the summer, this soil is allowed to lie as summer fallow until the following fall, when the grain is planted, and it germinates when the fall rains come on. This rainfall and that of the next spring will be sufficient to make the crop, which amounts to from fifteen to twenty-five bushels per acre. This crop was being cut when we were there, the middle of August. After growing this crop, many farmers get what they call a "volunteer crop" the next season. This is a crop which comes from the seed which has dropped during the previous harvest. Sometimes a small quantity of seed will be drilled in the stubble, for fear there will not have been enough grain dropped, and the next summer this volunteer crop will amount to perhaps ten bushels ptr acre. Then the soil is allowed to rest until the following spring, when it is plowed, and lies as summer fallow until the following autumn. By this plan the farmer gets two crops in three years.

This yield of wheat does not sound like the yield of sixty bushels per acre from irrigated land, but it must be remembered that this land, which cannot be brought under irrigation, is very cheap, and most of the farmers have immense tracts. Perhaps a man will have a section or two of land, so that while half is summer fallow, the other half is yielding a crop. We heard of a farmer who has been offering his farm for $15 per acre, and yet his crop of wheat this year amounts to $12 per acre, so that it would seem that it is not a bad investment, after all. The wheat crop is harvested by combined harvesters, which not only cut the wheat, but thresh it at the same time. About thirty-five horses are required to haul the harvester, and four men look after its mechanism. The harvester goes out in the morning, and brings home the wheat in sacks at night. Here, at last, is a place where things are done on a large scale.

New irrigation enterprises are being projected about Prosser, and shortly there will be many new orchards. At Zillah and Sunnyside are many very profitable orchards—indeed, the quantity of apples grown there is larger than at the other places in the valley, but we were unable to visit either place on this trip.

Mr. C. G. Baker, who used to live in Missouri, welcomed us at Prosser, and made us feel at home, and we are under obligations to him.

Southern Nurserymen Meet.

The seventh annual convention of the Southern Nurserymen's Association was held at the Monticello, in Norfolk, Va., Aug. 16. In the absence of the president, J. C. Miller of Rome, Ga., was elected to preside. The southern nurseries were well represented. Almost every nurseryman of prominence in the South, east of the Mississippi was present.

A good program was presented and the leading questions before the nurserymen were thoroughly discussed. Specialists from the experiment stations and from the national departments were present and contributed valuable addresses. It was a meeting of unusual interest to the nursery trade.

The following papers were delivered and thoroughly discussed:

"Crown Gall," by Prof. G. G. Hedgcock of the Mississippi Valley laboratory of the Bureau of Plant Industry. After thorough and exhaustive experiments it is shown crown gall in apple is not infectious or contagious, and not specially harmful to the tree, though it is found almost universally in orchards and nurseries.

"Co-operation," by Mr. Orlando Harrison of Berlin, Md., was an interesting and timely paper on the need of co-operative work amongst nurserymen.

"Where to Draw the Line in Nursery Restrictions," by Prof. W. M. Scott of Bureau of Plant Industry of Washington, D. C. He treated of the relations between the nurserymen and the state, as regards legislation. Prof. Scott has had long experience as an entomological worker and is thoroughly conversant with the subject. He suggests more uniform and reasonable legislation as affecting the nursery industry.

"Fumigation of Nursery Stock," by Prof. J. L. Phillips, state entomologist of Virginia. He has been making some exhaustive experiments along this line, of which he gave the nurserymen present the benefit.

"San Jose Scale," by Prof. R. I. Smith, entomologist of Georgia. His paper gave valuably information on the subject and advised how best to keep clear of it. The scale has ceased to be an object of much fear amongst nurserymen since the introduction of successful methods of holding it in check.

"Transportation," by J. C. Miller of Rome, Ga. He told of the woes of the shipper and means were suggested for lessening these troubles.

Legislation and other subjects were touched upon. The papers were well prepared and gave much valuable information. Great interest was manifested in the proceedings, and nearly every one present took an active part in the discussions. It was a splendid meeting.

Officers elected for ensuing year are: Orlando Harrison, Berlin, Md., president; J. A. Young, Greensboro, N. C., vice-president; Chas. T. Smith, Concord, Ga., secretary and treasurer. Next year the convention will meet in Chattanooga, Tenn.

After adjournment most of the members accepted an invitation to visit the Harrison Nurseries of Berlin, Md., and become the guests of those good people for a couple of days. Transportation and every accommodation had been provided and it proved a most enjoyable trip. The immense size of this nursery came as a surprise to some of the visitors, but notwithstanding its great size, every part of it showed the most careful cultivation, spraying and attention, and finer blocks of apple, pear, peach and other stock would be hard to find anywhere. The offices and packing houses were well arranged and equipped for handling their immense business, and the thorough organization which was apparent on all sides created a very favorable impression. It is a splendid nursery and is an object lesson to every tree grower, showing what can be done by earnest and zealous application.

Not content with the handsome entertainment thus far furnished, they gave the party a trip to Ocean City, where all the pleasures of a day at the seaside were enjoyed as the guests of the Messrs. Harrison and their charming wives. It was a great treat to the visitors, who now regard the Harrisons not only amongst our greatest nurserymen, but also amongst our cleverest entertainers.

CHAS. T. SMITH.

Concord, Ga.

Prospects for Apples.

The apple crop of 1905 will not be large, and it is generally believed that good red fruit will be scarce. The Baldwin crop in the east, and the Ben Davis and Jonathan crops in the middle west are short, and this fruit is in great demand. Within the past few weeks The Fruit-Grower has received letters from apple buyers asking where they can secure good Johnathan apples to supply their established trade. In Colorado the crop is perhaps more than half crop, and in the northwest perhaps it is even better than this. But the crop, taking the country as a whole, is short, and the tendency is toward high prices.

Buyers are very slow taking hold, and growers are stiff in their demands. It should be considered that apple buyers lost money last season, and many of them had the same experience the year before, so it is reasonable to suppose they will buy very carefully this year. There is danger, therefore, that the grower who is holding off for bonanza prices will be disappointed, for none may be willing to pay the fancy figures.

In New York apples have been falling badly, and the crop has steadily deteriorated. The same is true through the middle west, where the prospect was not very bright at the beginning of the season. In parts of Virginia the apple crop is good.

The grape crop is generally good, and the fruit which is being marketed in the middle west is bringing good prices. New York crop will be good, although there has been some damage by rot. New York's plum and peach crops are also good, and the Connecticut peach crop is exceptionally heavy.

Georgia's peach crop was unsatisfactory, except in north Georgia. The south Georgia crop was about half of that of a year ago, and much of the fruit shipped was unprofitable, on account of the fruit rotting. Excessive rainfall caused the damage.

Michigan's Fruit Crop.

Michigan expects a banner crop of peaches this year, and as most of the peaches were killed in sections which compete with Michigan, good prices are expected. Many of the trees were thinned, so that the quality is expected to be extra fine. The state over expects 84 per cent of a full crop—and that means lots of peaches.

Michigan's apple crop has steadily declined, and only about 25 per cent of a crop is expected for the state as a whole. Prices are steadily advancing for choice fruit.

Pears are a short crop, plums are a little better, with considerable rot reported. Grapes promise about three-fourths of a crop, but rot has appeared in some sections, and this estimate may be too high.

Mr. C. E. Bassett, secretary of the Michigan State Horticultural Society, issues ones of the best crop reports sent out by any of the state societies, and it has helped to attract buyers to the state.

Iowa's Fruit Crop.

A summary of the reports on the condition of the fruit crop for August in this state gives the following percentage for the different sorts:

Summer apples, 42 per cent; fall apples, 44 per cent; winter apples, 30 per cent.

Pears, 14 per cent; American plums, 44 per cent; grapes, 78 per cent.

The apple crop will be about 20 per cent less this year than in 1904, and 5 per cent better than in 1901. Apples promise to be about one-third of a crop in the Mississippi Valley. Plums are rotting badly, and possibly not more than a third of a crop of these will be gathered. Grapes are still promising.

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Facts Gleaned from the Strawberry Field.

Although it is rather late, I am going to report on the strawberry crop, as it may interest someone. The land on which my berries grew was a rich, moist loam, well cultivated for several years previous to setting strawberries, then fertilized with about 1,500 pounds of "Bradley's Potato Manure" to the acre. The season was nearly an average one, but rather wet at first and rather dry later on.

Nearly all the varieties tried for the purpose of testing were of little value. Of these the following were found to be either worthless or not equal to the standard varieties:

Texas was very early, large and good, but of so short season as to bear only one-half crop. Climax is larger still, but not as early; nothing to recommend it. Lovett's Early proved to be a moderate bearer of small berries, except the first, which were of fair size. Seaford set a big crop, but were not very large, not nearly as valuable as Sample and the buds easily frost kill. New York set a big crop and perfected about one-third of it; worthless. Miller was better, but the season is short and the crop not large. Kansas are just right to fill the blueberry box, but being red they will not pass muster for blueberries. Mark Hanna seemed worthy of future trial, but not equal to Sample in any respect. Commonwealth is very late, but its season is so short it produces but half a crop. This seemed to me to be of no value except for extra late fruit for the home garden. Brandywine again proved to be utterly worthless. Rough Rider comes a close second, both being unproductive. Morgan's Favorite is just about like Uncle Jim, but less productive, hence not its equal. Challenge failed utterly in foliage, thus ruining its large crop of berries on dry land last year, while on moist, rich land it produced a big crop of foliage and very few berries this year.

Now for the varieties that have proved good after repeated trials: Sample I consider the safest of all to plant, yet I dislike it. The berries will not grow above a certain size, and there are lots of small ones. Pocomoke is the best pollenizer for Sample. The berries are much larger if given decent culture. Although my plants blighted this year for the first time, yet they produced a fair crop, and when conditions are favorable the crop is immense. Dunlap is the best early berry I have found, quality best, moderate bearer, size of berries varies greatly. On heavy soil no good, but on light soil the Dunlap gave me a good crop, and right beside Climax near a wall where the sun roasted the Climax berries, the Dunlaps were not affected. It is best to allow both Dunlap and Texas to form wide matted rows for a large crop. Uncle Jim is the best of its kind, yields heavy pickings through a short season, and rots badly in wet weather. This is my first trial of Bubach. It was the best berry by far of any I tested this year. Large, heavy bearer, good to the last picking. The best berry in quality I ever tasted is Wm. Belt. Mine bore well, and as to rust, the "Bordeaux" took care of that all right. One favorite remains, and even this dismal rainy day cannot obliterate the smile that comes when I think of those Glen Mary that began to ripen at early midsummer and still bore huge berries the latest of all. Pollenize them well, just like a pistillate variety, and they will bring you the smooth dollars, even if the berries are rough. Big berries, big crop, big fun raising and bigger fun picking them.

On July 4 I visited the grounds of B. King, Tewksbury, Mass., where I saw and took notes on about thirty varieties. The following varieties were to me the most noticeable:

Hero was early, good size, deep red clear through, fine. Ridgeway seemed to be a good medium-sized berry, large bearer, fine to respond to high culture; very safe berry to set. Marie was good except for quality, which was so sour and poor as to condemn it altogether for me. President was a fair bearer of very large, rough berries. Uncle Jim and Climax were just about like my own as described above. Uncle Sam proved to be Brandywine, either through a mistake in plants or else in reality. Mead seemed poor, nothing to recommend it. One of Mr. King's best varieties was a seedling called by him No. 5. Large, early and great bearer, apparently a very safe berry to set.

A. F. TENNEY.

Ipswich, Mass.

Berry Crop of 1905 in Nebraska.

Our spring of 1905 was very discouraging. We had plenty of "May" weather in March, and on the 1st day of April Excelsior strawberries were in bloom. The most of the varieties were in bloom a week or ten days ahead of their usual time of blooming, and all varieties except the Gandy type were white with bloom when the hard freeze in April came and killed all blooms and berries in sight. The later blooms came on, set well, and made a good crop of all except the very early varieties. Late varieties received but slight damage. On the 10th day of May we picked the first excelsior and Warfield. August Luther, Johnson's Early and Bederwood were only a day or two later.

Bisel, Senator Dunlap, Crescent and Splendid ripened berries on the 16th, but not in quantities to market until May 22d. We continued to market berries until June 24, while Gandy and Commonwealth furnished a few berries as late as the 10th of July.

August Luther, Johnson's Early and Excelsior yielded but little more than 50 cases per acre. Warfield, Bederwood, Ridgeway, Parson's Beauty and Gandy 200 cases per acre; Bisel 225, and Senator Dunlap, 300 cases per acre. Uncle Jim, Yant, Sample and Joe all did well, while New York, Wm. Belt, Kansas and Oom Paul were practically failures. New York made a few very large berries, some of them six inches in circumference.

Cumberland, Cardinal and Haymaker raspberries were the winners this year. Kansas, Gregg and Nemaha were seriously injured by the hard winter; Columbian killed to the ground, Turner and Louden were injured, but made one-half crop. One-year-old Cumberlands yielded 38 cases, Cardinals 83 and Haymaker 102 cases per acre. The supply was not equal to the demand at $2.50 to $3.00 per case.

Blackberries were all more or less injured during the winter, and with two weeks of dry weather at the time of ripening, the crop was cut very short, many varieties being entire failures. Snyder still stands at the head of the list, with 60 cases per acre to its credit this year.

The Loganberries came through the winter in almost perfect condition, although the thermometer registered 34 degrees below zero. One-year-old vines gave a light crop of very fine berries.

Altogether the berry crop was very good and prices satisfactory.

G. S. CHRISTY.

Johnson, Neb.

Arranging for the 1906 Nurserymen's Convention.

The Texas Nurserymen's Association held its annual meeting in July, and among other matters considered the subject of arranging for the meeting of nurserymen at Dallas next year was taken up. The Texas nurserymen are determined that the visitors shall have a great time next year, and to this end the following committees have been appointed to work with the committees from the American Association of Nurserymen:

Committee on Finance—C. C. Mayhew, Sherman; O. K. Phillips, Rockdale; Sam H. Dixon, Houston; J. B. Baker, Fort Worth.

Committee on Attendance—E. W. Knox, San Antonio; Jno. Watson, Brenham; B. L. Adams, Bonham; J. A. Lopeman, Enid, O. T.

Committee on Arrangements and Entertainment—Stanley H. Watson, Houston; Wm. B. Munson, Denison; F. T. Ramsey, Austin; A. K. Clingman, Keithville, La.; M. G. Black, Mt. Pleasant.

Committee on Exhibits—F. W. Mally, Garrison; Jno. F. Sneed, Tyler; Jas. Nimon, Denison; C. Falkner, Waco; Roland Morrill, Morrill.

Reception Committee—Mr. Nicholson, Dallas; E. J. Kyle, College; W. A. Yates, Brenham; D. H. L. Bonner, Omen; six other members from the city of Dallas.

Ladder for Fruit Pickers.

J. T. Swan, Auburn, Neb., has applied for a patent on a portable extension platform ladder, which is claimed to be just the thing needed in picking fruit. Mr. Swan describes his ladder as follows:

"It is in the shape of a triangle, with an eight-foot base, or any size desired. The uprights are made from gaspipes, one sliding into the other, and the ladder can be run up twenty feet high if desired, and the ladder cannot be upset, on account of braces at the corners. One of the points of the triangle is placed toward the tree, and a plank can be run out for ten feet, into the center of the tree, and the fruit can be picked without bruising a limb of the tree. The ladders can be made any size or height desired, and can be taken apart or set up in a few minutes."

Top Vines and Peach Trees.

Much rain this fall caused a big and tender growth of vines and fruit trees and thus made them more susceptible to winter injury. Blackberry canes made a big tender growth and should be cut back or the tops pinched off. This will check growth, harden cane, and they will endure more cold and bear more fruit. The same is true of black cap raspberries, where tips are not wanted to grow plants. The same treatment should be given the top ends of peach limbs. This trimming should be done about the first of September. I would advise a non-believer to trim some and watch results. I would not neglect this trimming had I to pay well for the work.—Jacob Faith, Vernon county, Missouri.

Phenomenal Berries Planted.

J. F. Littooy, who has recently been reappointed fruit inspector of Snohomish County, states that the Snohomish Berry & Fruit Co. has planted thirty acres with the new Phenomenal berries. The fruit is said to be larger and better flavored than the Logan, red in color and of a more decided raspberry appearance. The Logan is very lame as a shipper, but the Phenomenal is said to be firm.

A test shipment from Santa Rosa to Everett found this fruit to carry that distance in good condition. Luther Burbank considers this the best berry in this class of fruit anywhere known. The yield is said to be equal to or greater than Logan, which is from 5 to 10 tons per acre. This company also has 16 acres Cuthbert raspberries and will put in another 10 acres this fall. Adjoining a track will enable them to load cars at the ranch.—Northwest Agriculturist, Tacoma, Wash.

It is said that $4 per barrel has been refused for a block of handsome King apples in Duchess County, N. Y.

The Fence That Sells.

We are printing in another part of this issue a very attractive advertisement issued by The American Steel & Wire Company, manufacturers of American Fence. It is headed American Fence Talks by the Makers, and sets forth some very interesting statements.

We are inclined to believe that this company is correct when they say that the American Fence is the standard of all the world. They certainly have an immense sale on this fence, which goes to show that it is universally liked throughout the country.

There is quite a satisfaction in buying it, in that it is well-known and the world's standard. There is a feeling of security that you have purchased the best that can be had and that you surely got your money's worth.

There is not a question of doubt but what The American Steel & Wire Company are very progressive and up-to-date, and they have every facility for turning out the best fence that it is possible to manufacture.

With their immense capital—which enables them to manufacture American Fence all the way from the digging of the ore ont of their own mines into the finished product—surely puts them in a position to offer a reliable fence at the very minimum of cost.

With their vast amount of experience in manufacturing fence, they are also in a position to know what is best in the way of wire, just as to temper, and are also in a position to know the best form of making fence.

Their sales are all made through respousible dealers.

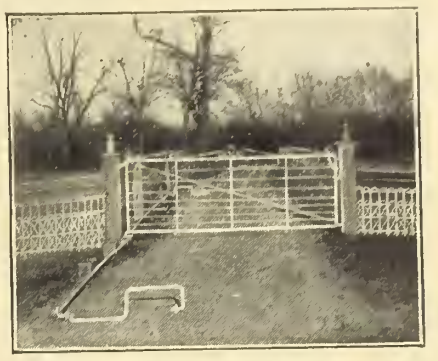
Undoubtedly one of these dealers handles American Fence in your own town.

We certainly recommend that you read carefully the advertisement of the American Fence in this issue, and we assure you that you are absolutely safe in buying a fence that is so well known and that is manufactured and sold by such a responsible concern.

If you don't find a dealer in your own town that handles this fence, we suggest that you write The American Steel & Wire Company direct and they will send you a catalog and direct you where you can get their fence. Their address is The American Steel & Wire Company—your letter should be sent to their nearest address to you—Chicago, Denver, New York or San Francisco.

The Manlove Self-Opening Gate.

The accompanying illustration shows the Manlove Self-Opening Gate, and one can tell at a glance just how the gate operates. As the wheel of a vehicle passes over the rod, the gate is opened, and it is closed after the vehicle passes through. The mechanism is very simple, and, as shown, is operated entirely without



use of the hands of the driver. This feature will be appreciated by those who recall the numerous runaways which have been caused by the driver of a vehicle getting out to open a gate, or relaxing for a time his hold upon the lines to permit the use of his hands in pulling at a rope. Fruit-Grower readers should be interested in this gate, and they should write to Manlove Gate Co., 272 Huron street, Chicago, Ill., for a copy of catalogue telling all about the gate, its price, etc.

A Man Who Sells Things.

A. P. Tone Wilson, Jr., the real estate specialist of Topeka, Kansas, is today the largest real estate dealer in the United States; advertising in over 2,500 different papers and magazines and having 2,000 branch offices and agents to assist in handling his large volume of business. He is an energetic, original and successful young real estate specialist, who makes a business of selling things, and sells them. He pays cash in advance for all his advertising, therefore he must make sales. If you want to buy or sell property or business of any kind anywhere in the United States it will pay you to write to him and mention this paper.

Senator Edwin Taylor of Edwardsville, Kan., in sending a crop report recently, said the apple crop is practically a failure, and adds: "But you ought to see the wheat, oats, and hay, and corn." These crops, as a whole, have never been better.

GOLD MEDAL awarded us by Louisiana Purchase Exposition for

Small Fruits

PRINCIPAL FEATURE

Cumberland Raspberry

All leading varieties of small fruits on hand. Send for prices.

Holsinger Bros.

ROSEDALE, KANSAS

Farm For Sale

120 acres, 40 acres fruit, 2½ miles from Romeo, Mich., ½ mile from electric road and school. two hours' from Detroit. Fine for shipping. Well watered; ample buildings. Will sell with all stock, tools, crops, etc., or without, to suit purchaser. Reasons for selling, age and failing health. Terms to suit purchaser. Bell telephone. Address SILAS NYE, Romeo, Mich.

FOR SALE—163 acres, 6 miles southwest of Sarcoxie, 3 miles to a railroad station; good 9-room house, barn 36x62, with large hay mow. good well and orchard; 143 acres in cultivation, mostly valley land; 20 acres in timber; close to good school and church; on rural route. Price $50 per acre.

PIERSALL LAND CO., SARCOXIE, MO.

SITUATION WANTED.

By a thoroughly reliable man of 25 years' experience as orchardist and truck farmer; up-to-date in peach culture; understands the care of all fruits grown in Ohio valley; preparation and fertilizing of soils for orchards, pruning, spraying, thinning of fruits and packing for distant market. Age 39, married, no children; temperate; capable of handling large force of hands. Would like a position with some gentleman starting a new orchard or truck farm. The best of references. Can take charge of place on short notice. Expert melon grower. Wesley Griffin, Orchardist and Gardener, Box 770, Warsaw, Ky.

No More Blind Horses

For Specific Opthalmia, Moon Blindness and other sore eyes. BARRY CO., Iowa City, Ia., have a sure cure.

Best Water Elevators and Pumps.

In this issue appears the advertisement of the St. Joseph Pump & Manufacturing Co., St. Joseph, Mo., which should appeal to everyone who desires pure water. This company makes the Perfection Water Elevator and Purifying Pump, which is not only a pump, but also a purifier of water in cisterns, wells, etc. This pump is so constructed that as the buckets descend they thoroughly aerate the water, keeping it pure and sweet. Where this pump is used water cannot become stagnant, for a bucketful of fresh air is discharged into the water for every bucket of the water which is taken out. The action of this air upon the water will prevent its becoming stagnant or impure. Messrs. Irvine and Campbell of The Fruit-Grower Company have each used one of the Perfection pumps for more than ten years, with the greatest satisfaction. Thousands of these pumps have been sold, with never a complaint, but the manager of the company recently told The Fruit-Grower that farmers had not learned the value of the Perfection pump. The advertisement, therefore, is to get Fruit-Grower readers acquainted with the pump, which is most heartily recommended. Write the St. Joseph Pump & Manufacturing Co., St. Joseph, Mo., for circulars describing the Perfection pump, and they will give the name of a dealer through whom you can purchase it. Write today.

The Weber Nurseries.

were established at St. Louis, Mo., in 1867, by H. J. Weber on a very modest scale, on leased property, gradually increasing from year to year. In 1899 the elrest son, Frank A., was taken into the business and the firm name changed to H. J. Weber & Son. A few years later the son, Henry C. (now deceased), was admitted and the firm name changed to H. J. Weber & Sons. Since then the sons Wm. A., Walter T. and George A. were admitted, and in 1903 the firm was incorporated under the laws of Missouri, with a paid up capital of $50,000, as the H. J. Weber & Sons Nursery Co. The incorporation owns 170 acres of valuable land near St. Louis, and with leased lands now has almost 250 acres under cultivation. This year a new range of rose houses were constructed for the exclusive growing of roses. The firm does a general nursery business, mostly by mail orders and to the trade. They employ about twenty-five regular salesmen. We believe there are few nurseries in the United States, if any, where every member of the family has remained in the business and is a worker in same.

The officers are: H. J. Weber, president; F. A. Weber, secretary and treasurer; Wm. A. Weber, vice-president and general superintendent; Walter T. Weber, superintendent floral department; Geo. A. Weber, assistant superintendent.

Death to San Jose Scale.

"Kill-o-Scale" is the name of a new insecticide which is guaranteed to kill San Jose scale, which is being placed on the market by Griffith & Turner, Baltimore, Md. Realizing that San Jose scale is one of the hardest insect pests to combat, eminent chemists have perfected this preparation, which has been thoroughly tested and found effective. Kill-o-Scale is a concentrated liquid, which is shipped in barrels or cans. When used, one gallon of Kill-o-Scale is diluted with twenty to twenty-two gallons of water, and it is then ready to apply. It will mix with water in any proportion, either hot or cold. The preparation dissolves the wax which cements the scale to the tree, and contracts the scale covering the insect, thus exposing the insect itself to the direct action of the insecticide. Griffith & Turner, the firm which is placing this preparation on the market, are seedsmen of Baltimore, and one of the best firms in the country. The company stands behind Kill-o-Scale with its guarantee, and as the preparation is economical, easy to apply and is effective without injuring the tree, there should be no reason why it should not have a wide use. Write Griffith & Turner, Baltimore, Md., asking for circulars, stating that you do so at the recommendation of The Western Fruit-Grower.

The Sellgman Nursery grow a general line of nursery stock, but make a specialty of small fruit plants, of which they, no doubt, grow the greatest variety and largest quantity of any firm in the United States. They guarantee every plant to be free from disease and true to name. They being located on the Ozark mountains, can ship early in the fall, which means much to northern nurseries. If you need anything in their line, now is the time to write them. See their advertisement in this issue.

The Year to Plant Grapes.

Foster & Griffith, Fredonia, N. Y., located in the midst of the grape industry of Western New York, would like to send a copy of their catalogue to Fruit-Grower readers. The firm makes a specialty of grape vines, and their stock is extra fine, but all kinds of nursery stock can be furnished. If you want grape vines or any other kind of nursery stock, write them, mentioning The Fruit-Grower when you write.

B. R. Robinson Nurseries, Lawrence, Kan.

Four years ago Mr. B. R. Robinson of Lawrence, Kan., decided to go into the nursery business in addition to his small fruit farm. His planting that Spring consisted of four bushels of peach pits and 10,000 apple grafts.

Since that time his business has been growing at a rapid rate. At the present time he is growing about 650,000 apple and peach alone, besides a general line of other nursery stock.

Mr. Robinson grows stock on contracts for other nurserymen, besides doing a general wholesale and retail business.

"Honest dealing and fair treatment" is bringing his business to the front. Most of his stock is growing at Baldwin, Kan., but his headquarters are at Lawrence, Kan.

Western Nurseries, Greenwood, Mo.

The Western Nurseries, Greenwood, Mo., W. H. Ghormley & Co., proprietors, report that they have an excellent line of nursery stock for the fall and spring trade. This firm has built up an enviable trade in the nursery line, having made a specialty of supplying trees and plants to commercial growers. The company has a proposition to furnish trees on the crop plan which has been found very attractive; this will be explained to any one who asks for particulars. Free catalogue will be sent to those who ask for same, mentioning The Fruit-Grower.

Prof. E. N. Guckert, of the Guckert Music School, has devised a new and simple method of teaching music, piano, organ and violin, by mail, without the aid of a teacher. The small cost of the full course puts it within the reach of all. The professor is authority on music in its various branches, and his musical productions are famous. See ad of his school in this issue.

GOOD improved 40-acre farm for sale; 4 miles north of Monett. For full particulars address W. R. Blackshear, Monett, Mo., Route 3.

FOR SALE—Fine fruit and garden farm, 120 acres; all bottom land; near Wichita, Kan.; 3,000 bearing fruit trees; well improved; a bargain. J. R. MEAD, Wichita, Kan.

FOR SALE—Fine, rich Current River bottom land, $1,300.00. For particulars write E. E. Lawrence, Doniphan, Mo.

FOR SALE—20-acre Celery and Onion Garden—Located in Central New York. Good shipping point and good market for crops. Crop has never failed. Address X. Y. Z., this office.

FOR SALE—At a bargain, 40-acre fruit farm, 7 miles from Jonesboro, Ark. Five acres in Black Ben Davis apples, 5 acres in peaches, all commenced bearing. Will sell crop, stock, wagon, buggy, harness, plows, all for $2,000. D. H. Berry, Herndon, Ark.

WELL IMPROVED FRUIT FARM FOR SALE. Eighty acres, of which between 40 and 50 acres in orchard; 3,000 peaches, of which there are 800 bearing (Elbertas); 1,200 apples (400 bearing); 2 acres in vineyard. $50.00 per acre.

FRUIT FARM of 110 acres. Ten acres apples now bearing. Six thousand four-year-old apples. All in fine condition. 1½ miles of Tecumseh. Price $30.00 per acre.

Other fruit farms for sale at from $20.00 to $40.00 per acre. For information, write to E. J. DICKERSON, Tecumseh, O. T.

FOR SALE—Farm of 320 acres, one and a half miles from Winchester, Kan.; either quarter section will be sold separate if desired. On the southwest quarter is a house of 8 rooms, a cottage; a barn 24x40, corn crib 10x40, driveway between, all under shingle roof; hog pens, smoke house, five-ton scale, two wells, cistern, corn crib; 500 Missouri Pippin, 250 Gano apple trees, sent out nine years ago; 550 Jonathan, set out two years ago; 12 acres in strawberries, blackberries, red and black raspberries; 800 peach trees, set out this spring; two packing sheds. On the southeast quarter are 6,000 Ben Davis, 1,800 Gano apple trees, set out ten years ago; 500 Gano, set out two years ago. Living water the year round on every 40 acres if wanted. Timber on the two quarters. For particulars write Wm. Booth, Winchester, Jefferson County, Kan.

FOR SALE—40-acre fruit farm, 2 miles from Olney, Ill.; 25 acres in good bearing apple trees, besides other fruit; near school and church; good 6-room house and cellar; new barn and outbuildings, all in first-class condition; plenty of good water. Price, $2,650. W. A. WHEELER, Lock Box 299, Redlands, Calif.

We are the largest dealers in real estate in Grand Valley, the famous peach, apple and pear growing section of Western Colorado. Orchards here 8 years old net the growers from $500 to $700 per acre. The climate is the best in the world and is a specific for lung and throat troubles and asthma. Write us for information. The Home Loan & Investment Co., 357 Main St., Grand Junction, Colo.

A Few Good Things in the Safe West

No. D-3 is 160 acres, one-half cult. and in corn, one-third of which goes to purchaser. Seven miles to Eustis in Frontier county. Price $2,000; $800 or more cash.

No. D-4 is 160 acres, 110 acres smooth and cultivated. Fenced and cross fenced; fair house, large frame barn, granary, crib, hog house, well, windmill; 12 miles from Eustis, and price for 30 days is just $2,300. (Ought to be $3,200.)

No. D-10 is 320 acres, all perfectly level but 10 acres; extra large frame improvements; 20 rods to school; in Frontier county. Price $6,600.

No. D-1 is 160 acres, perfectly smooth; small improvements; well located; all cultivated but 15 acres. Very cheap at $2,500. North of Holbrook.

We have many others where wheat yields 30 to 40 bushels, oats 65, corn 40 to 60 and other crops in proportion. Write us at once for Lists, Maps and other information.

CORNELIUS & BROWN, Hastings, Neb.

REED & EVANS

Room 202, Baker Blk., Springfield, Mo.

REAL ESTATE AGENTS

Our specialty is the best improved farms in Greene and adjoining counties.

LANDS CHEAP.

Large bodies of land and ranches; timber land, fruit and truck farms in Kansas, Oklahoma, Texas, Old Mexico, Louisiana, Arkansas, Southern Missouri, Colorado, New Mexico and California. Tell me what you want and where you want it and how much money you will invest if suited, and I will send you list of bargains of the kind you want in that locality. I also have small farms and ranches in all parts of said states. I am working above mentioned territory thoroughly. Write me and see how well and how promptly I will serve you. I have land at 35 cents to $35 per acre.

GEORGE W. MORRIS, LYNDON, KAN.

DO YOU WANT A HOME IN CALIFORNIA FOR $900.00?

If so, and you have $225 in cash to make your first payment, we can place you on 20 acres in our 20,000-acre Colony, where you will be kept busy every day in the year gathering and marketing your crops. Where you can make as much money on 20 acres as on 80 in any Eastern state. Water is the key to successful farming in California, and we can truthfully say and prove that we have the best water system on the Pacific coast. Our colonists today are raising the finest kind of corn, broom corn, potatoes, sweet potatoes (no uncommon thing 175 sacks to the acre), all kinds of truck farming, alfalfa; all kinds of fruits can be raised in abundance; dairying is very profitable in our Colony. Write us today for booklet. Good neighbors, good schools. Improved and unimproved properties in all parts of the state.

PACIFIC REAL ESTATE AND COLONIZATION COMPANY,

Successors to Renfro Peck.

604 Crossley Bldg., San Francisco, Cal.

Fruit Farm for Sale

Within four miles of Neosho, county-seat of Newton County, Mo., (Neosho has two large cold storages). Good improvements; good water. 160 acres; 5,000 pedigreed apple trees just at bearing age. Also some peach and pear trees, etc. All choice market varieties. Reasonable price and terms. For further particulars, address DANIEL SHANK, Clayton, Ill.

BUSINESS OPPORTUNITIES—Special representatives in country wanted for all or part time. Dignified and profitable work. Previous experience not necessary. Address Journal of Agriculture, Publication Department, 204 Olive Street, St. Louis, Missouri.

The Coast Country

For Wealth and Health—Corn 140 bushels per acre; onions $800 per acre; potatoes $525 per acre. Splendid cattle and hog country; cholera unknown. Cooler summers and warmer winters. Three crops each year. Land equal to best in the United States at $5 to $25 per acre.

HILAND P. LOCKWOOD,
102-3-4 Bryant Bldg., Kansas City, Mo.

"TEXAS"

The low price of land in Texas is attracting the attention of the land investor and farmer. I can sell you from one to four thousand acres, ranging in price from six to fifty dollars an acre. Land that is netting per acre in strawberries and peaches, twenty-five to one hundred dollars. Also good for all kind of farming. Write for list.

GEO. T. REYNOLDS, Longview, Texas.

CASH For YOUR FARM

Farms of All Kinds Sold Quickly for Cash. Send description and lowest cash price. DO IT NOW—Don't Wait. Address

HOMER E. KENT, Des Moines, Ia.

Virginia Homes

You learn all about Va. lands, soil, water, climate, resources, products, fruits, berries, mode of cultivation, prices, etc., by reading the VIRGINIA FARMER. Send 10c for 3 months' subscription to

Box A54 FARMER CO., Emporia, Va.

The D. McNallie Co., Sarcoxie, Mo., growers of strawberry plants and small fruit, have a reputation for selling stock true to name. They are located in the Ozarks, the natural home of the strawberry, and where plants and fruit are grown to perfection. They will have an interesting catalogue about the strawberry ready for mailing in December.

CASH

For your farm, ranch, home, or business, no matter what it is worth, or in what town, state or territory it is located. Our facilities are such that we can sell it, and sell it quickly.

Many years of experience in the real estate business, together with our extensive advertising in all parts of the country, enables us to quickly furnish cash buyers. Besides, we have special representatives throughout the country and in many of the larger cities who are at all times working in connection with us. Through our special facilities, combined with our thorough system of advertising, we get quick results, and in order to meet the heavy demand upon us by people who want to buy we must have more property listed with us at this time.

DO YOU WANT A QUICK SALE FOR CASH?

Then list your property with us at once. It matters not what kind of property you have, whether large or small, what it is worth or where located—if you want it sold quickly, write us, giving a brief description of what you have for sale, with your lowest cash price. Upon receipt of your letter we will immediately write you, telling you how and why we can quickly sell your property, together with our terms for selling it. Do not wait but write today.

TO YOU WHO WANT TO BUY

If you want to buy a farm, ranch, home, business, or property of any kind, anywhere, tell us what you want and where you want it. We can satisfactorily fill your requirements, do it promptly, and save you time and money. Furthermore, should you buy a property through us, and at any time within one year you find that it is not just what you want, we will re-sell it for you and not charge you one cent for our services. Write us your wants today.

N. B. JOHNSON & CO. 520 BANK OF COMMERCE BLDG. KANSAS CITY, MO.

If You Want Cash For Your Real Estate or Business, I CAN GET IT

No Matter What Your Property Is Worth, or in What City, Town, State or Territory Located.

If I did not have the ability and facilities to sell your property, I certainly could not afford to pay for this advertisement. This "ad" (like all my other "ads") is practically sure to place on my list a number of new properties, and I am just as sure to sell these properties, and make enough money in commissions to pay for the cost of these "ads" and make a good profit besides. That is why I have so large a real estate business today.

Why not put your property among the number that will be sold as a result of these "ads"?

I will not only be able to sell it—some time—but will be able to sell it quickly. I am a specialist in quick sales. I have the most complete and up-to-date equipment. I have branch offices throughout the country, and a field force of men to find buyers.

I do not handle all lines usually carried by the ordinary real estate agents. I MUST SELL real estate—and lots of it—or go out of business. I can assure you I am not going out of business. On the contrary, I expect to find, at the close of the year, that I have sold twice as many properties as I did the past year, but it will first be necessary for me to "list" more properties. I want to list YOURS and SELL it. It dosn't matter whether you have a farm, a home without any land, or a business; it doesn't matter what it is worth, or where it is located. If you will fill out the blank letter of inquiry below and mail it to me today, I will tell you how and why I can quickly convert the property into cash, and will give you my complete plan FREE OF CHARGE and terms for handling it. The information I will give you will be of great value to you, even if you should decide not to sell. You had better write today before you forget it.

If you want to buy any kind of a farm, house or business, in any part of the country, tell me your requirements. I will guarantee to fill them promptly and satisfactorily.

A. P. TONE WILSON, Jr., 413 Kansas Ave., TOPEKA, KANSAS.

A. P. Tone Wilson, Jr., 413 Kansas Ave., Topeka, Kan.
If you want to sell, fill in, cut out, and mail this blank today.

Please send, without cost to me, a plan for finding a cash buyer for my property, which consists of.....
Town..... County..... State.....
Following is a brief description.....
.....
Lowest cash price, $.....
Name..... Address..... (W.F.G.)

A. P. Tone Wilson, Jr., 413 Kansas Ave., Topeka, Kan.
If you want to buy, fill in, cut out and mail this blank today.

I desire to buy property corresponding approximately with the following specifications: Town or city.....
County..... State.....
Price between $.....and $..... I will pay
$.....down and balance.....
Remarks .....
Name..... Address..... (W.F.G.)

Texas Horticulturists Meet.

The twentieth annual meeting of the Texas Horticultural Society was held at College Station the last week in July, with good attendance. This meeting is held each year in connection with the Farmers' Congress, and draws together many of the best men of the state. Some of the sessions are held jointly with the Texas Nurserymen's Association, the two organizations being very closely affiliated.

President Gilbert Onderdonk presided, and his address on "Grape Growing in Southwest Texas" was one of the features of the meeting.

One of the most interesting numbers of the convention was an address by Mr. T. V. Munson, of Denison, Texas, "Some Notes on World's Fair Fruits." Mr. Munson acted as one of the judges, and while his address was mostly from memory, it was full of valuable information. Among other things, Mr. Munson said:

"The first item I will give you will be in reference to the character of the fruits from the different sections of the country. Take as an example the Kieffer pear. There were very fine exhibits from near Galveston, from eastern Texas and from northern Texas and some further west in Texas, as well as from other portions of the country. Just within Texas there was such a marked difference that one not familiar with the variety would pronounce them three separate varieties. The Galveston samples were very large, but they were exceedingly dull, showing very little coloring of any kind, excepting the fungus color over the surface, making the fruit very unattractive, except in size. The quality likewise, so far as I could judge, was not good. From eastern Texas the specimens were not quite so large, but were much better color. From northern and northwestern Texas the specimens were still not quite up to the Galveston specimens in size, but decidedly handsomer in color, rich yellow, and scored higher than either of the other exhibits on this account. Such facts as these would indicate to the person desiring to plant a commercial orchard to produce that fruit that will be most attractive in the market, should not seek the moist lands of the coast where the fungus diseases are very prevalent.

"Coming now to the Jonathan apple, specimens from east Texas were handsome, as Jonathan is everywhere, but from northern and northwestern Texas they were much more attractive. The Texas Jonathan compared very favorably in size and attractiveness with Jonathan from anywhere. I found Jonathans from Missouri, Colorado, Arkansas, and in fact nearly all sections of the country, but more especially from the west, and I mean by the west, all west of the Mississippi in comparison with the eastern states. Jonathan is a great commercial apple and some of the larger apple growers regard it as best. There is quite a difference between Colorado and Texas Jonathan. Colorado probably produces quite as good quality of fruit as any section of the United States. The north Texas Ben Davis is a great deal larger than the Colorado Ben Davis, but not quite so bright, but I believe on account of its greater size, it will outsell the Colorado Ben Davis. From Michigan the Ben Davis was large, but not nearly so bright as from Texas. I do not believe either that the quality is as good. Ben Davis is at its prime in northern Texas, northwestern Arkansas, southern Missouri, and the finest come from these regions.

"From Carolina and southern portions of Georgia, where there is a great deal of fungus growth, the fruit was dull. You all know what makes the dull fruit. It does not destroy the fruit but it discolors it. West Virginia fruit is bright, but on the eastern slope of the Adirondack mountains in Virginia southward, the fruits were more or less dull. Now, what conclusion can be drawn? It would be to select the brightest varieties in preference to the duller ones. Take a yellow apple and it will present a very dull, unattractive appearance if bruised in shipping, and unless attractive, they will not sell. Bright fruits will sell at a fine profit. We see at once that the northwestern country has a great advantage over the other. The region having the purer air and less moisture will produce the brighter fruit. We are suffering in that respect, especially in eastern Texas.

"With reference to varieties, I will confine my remarks just to the commercial varieties. There is an immense difference even in the varieties which are classed as commercial. People will buy the most attractive looking fruit; will buy, in spite of everything, fruit that is attractive to the eye. There is a saying that some people select fruit with their eye rather than taste. Anything that appeals to the eye is bought in preference to the other. In the large cities you will find that much of the fruit is sold on account of its ornamental appearance on the table. A basket of fruit is selected with as much care as the most exquisitely selected stand of flowers on the table. To go into the large retail fruit establishments you will find many baskets already prepared. They select specimens and put them in baskets with flowers and these baskets are sold at a very fancy figure. The housekeeper selects such and such baskets and orders them sent home and they must be in perfect condition. The fruits are used largely for decoration, as well as the flowers. So that in planting a commercial orchard you should take into consideration the characteristics of the fruit.

"Take the Elberta peach; it is known to every one. It fills the bill completely in size; in some places it is quite sufficiently colored, in other places not so well. I saw Elbertas from near St. Louis that were as handsome as any I saw from any region in the entire display. They were in great demand in the markets on account of their fine size and beautiful color. They came from the bluff regions along the river. However, the Elberta from the damp regions of the south is not nearly as well colored, and if they were to come in competition with Elbertas of high color, they would have to take a second place in selling. Experience has proven, though, that Elbertas from any region are the commercial peach. It is a profitable peach, if a season like this does not strike it, when the brown rot carries off the crop. You can plant the Elberta safely. At any rate there is no peach that can compare with it that is known extensively. In selecting commercial varieties of peaches, perhaps a few of the extra earlies, such as Alexander, Sneed, Triumph, Dewey, Mamie Ross and Carman. The Alexander represents a class in which there are forty or fifty different varieties very little different, a bright peach, but a poor peach in quality. The Mamie Ross, Carman, Ray and several others of the Chinese type combined with other varieties are excellent market peaches, so long as they do not meet their brighter competitors, but in that season we need a class of peaches with more color than they have. Some are being introduced. The Gold Drop, largely grown in southern Missouri, is a good shipping peach. It was originated by myself and sent to Missouri under another name. It is much superior to the Yellow St. John. There are other peaches being originated, the Guinn peach is one of these. Yet there is room for careful tests and comparison of those that have been introduced. If you can get such a peach as the Gold Drop in color, size and quality, that will bear as well as the Carman, you have a fortune, because there is no other early peach that will do this. There were some peaches shown at the exposition promising in this direction, but not sufficiently tested yet to recommend largely.

"Among apples there were some wonders, in size especially. The Wolf River is a large apple, grown quite extensively in Iowa, but an unprofitable apple notwithstanding its size. When you get above certain sizes, then the extra size is a detriment. When you lose one specimen by bruising, you lose value and measure. They do not sell any better, if as well, as a moderate size one. In apples, especially in middle to south Texas, plant no late apples. Plant the early varieties. The Red June is one of the best. The Red Astrachan is not desirable on account of off years of bearing and also owing to the fact that its quality is not the best. It is not nearly so desirable as Red June of the same period. Following Red June, we have a new apple introduced by Dr. Ragland, now known as San Jacinto, erroneously called at first Mrs. Brown. San Jacinto is a very bright apple, larger than Red June, very much like it, better, stronger tree and hangs on the tree as well or better than Red June. I consider it a most promising commercial variety. The Fanny is an excellent apple, more flat than San Jacinto. Red June has been well tested in northern Texas and more or less in eastern Texas and has proven very successful. The Gravenstein is also a fine apple and good bearer; does well in the south. Following this we have American Summer, better in quality, about medium size, slightly larger than Summer Queen, possibly not quite so good in quality. After that the Jonathan, and there I will quit, excepting in regions where the Ben Davis, Kinnard and some others of the Winesap family do well. The Kinnard I put at the head of the Winesap family. Arkansas Black and Mammoth Black Twig are both seedlings of Winesap and the Kinnard, so far as I have been able to judge, is the choice of the lot."

Mr. Sneed: "Have you ever tested the Texas Red apple?"

Mr. Munson: "Yes, sir, it is a fine tree and beautiful, good apple. There is another apple which is also a Texas apple, the Doyle, that is doing remarkably well, follows the Jonathan. I saw the Doyle on the tables, and as far as my knowledge goes here in Texas I would say the Doyle would be a most excellent apple where it does well. I give you these varieties as those that struck me most forcibly."

This subject was discussed by Mr. J. S. Kerr and others.

The subject of commercial peach growing, fertilization of nursery stock, etc., were discussed, and the meeting was accounted a success in every way.

E. C. GREEN.

College Station, Texas.

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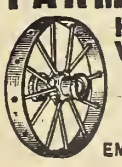

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Effect of Cold Storage on Apples.

The above title does not refer to the effect of cold storage while the fruit is kept at a low temperature—while it is in storage—but to the effect of this low temperature after the fruit is removed from storage and placed on sale. For a long time many persons have claimed that while cold storage would preserve apples from decay, up to a certain limit, the apples would deteriorate very rapidly in quality when removed from the low temperature. These persons have claimed, in short, that the apples would decay more rapidly when removed from cold storage and placed on sale, than other apples would which had never been kept at a low temperature. Accordingly, it has been recommended that apples should first be removed from the low temperature of the storage house to a room where the temperature would be higher, but still not so high as that of the room where they are to be offered for sale—thus allowing the fruit to gradually rise in temperature.

This matter is of importance to apple growers and apple handlers, and anything new on the subject will be of interest. Mr. F. Walden, who has charge of the exhibit of Yakima County, Wash., at the Portland Exposition, has observed the behavior of certain varieties when removed from storage. Mr. Walden gives it as his opinion, based on his experience, that apples from cold storage will hold up as long when taken from storage as will fruit which has been kept in any other way. He says:

"It is true that fruit kept in cold storage goes down pretty quickly, in most cases, after being taken out, if the weather is hot, but it is the hot weather which causes this, and not the manner in which the fruit has been kept. Take your apples out of your cellar and put them in a hot room and they will not last long. Cold storage, if properly attended to, does not injure the fruit at all."

While this is true, Mr. Walden says it is also true that some varieties will last longer when taken from storage than will other varieties which have been subjected to the same treatment. He adds:

"At this writing, during the hot weather of August, we have on our tables at the Lewis and Clark fair some apples that have been out of cold storage for more than a month. It is worth something to know what apples will keep longest under such conditions. If an apple will go down in two or three days after coming out of cold storage, it will not be worth much to the trade. Such varieties as will keep for a week or two, or even longer, will be much more valuable. The Rome Beauty, Arkansas Black, Winesap and White Winter Pearmain have held up remarkably well when taken from cold storage. Such apples can very properly be kept for the hot weather trade. The Yellow Newtown will not hold up in some cases, if the weather is very hot, for twenty-four hours. We have put apples of this variety on our tables, and in less than a day they were turned black. They were still solid, and might be used for cooking, but they would not sell—indeed, we could not give them away. This behavior of the Yellow Newtown occurs only in hot weather. In moderate weather, such as prevails in the spring months, this apple keeps quite well, but any one will make a mistake who attempts to keep it in cold storage for the July and August trade. The Rhode Island Greening, the Bellflower, and the apple known as the Mammoth Black Twig cannot be kept in cold storage for the summer trade. In fact, there are some apples that cannot be profitably kept in cold storage at any time of the year, and I would most certainly name Mammoth Black Twig as one of that class. The quality of the apple is good, but it will not keep well, in cold storage or in any other way. My advice to people who think or raising this apple for commercial purposes is 'Don't.' I had over 1,800 boxes of this apple last year, but I pushed them on to the market at a low price, for I knew it would not keep without cold storage, and now I know it will not keep even that way."

These notes are interesting and helpful, and are in line with the experience of other persons, except that we hardly believe the charges against Mammoth Black Twig will apply to that variety as it is grown in the Middle West. This apple has kept well in many cellars, as well as in cold storage. Perhaps the variety is not adapted to the Western country as it is to the Mississippi Valley. The editor of The Fruit-Grower saw apples at Portland and also at St. Louis which held up for more than a month after being removed from sold storage, although of course the fruit ripened considerably during that time. At Portland specimens of Gano, Arkansas Black, Stayman Winesap and apples of that class which had been out of storage for a month were found in good condition, as stated by Mr. Walden.

Death of D. McNallie, Sarcoxie, Mo.

Dennis McNallie, of Sarcoxie, Mo., one of the leading strawberry men of the Southwest, died on July 30, 1905, in his fifty-eighth year. Mr. McNallie was one of the best-known men in the strawberry business, and had done much to build up the industry. He was a good grower, and a good man. The Fruit-Grower feels a personal loss in the death of Mr. McNallie, for he was a steadfast friend of this paper. Several years ago, when the controversy between Mr. R. M. Kellogg of Michigan and Mr. McNallie waxed warm, the latter was one of those who charged that Mr. Kellogg owned The Fruit-Grower, because he used so much advertising space. Yet later he acknowledged to us his error, and was one of the best friends we have ever had.

At the meeting of the Missouri State Horticultural Society, two years ago, Mr. McNallie was on the program for a paper on strawberry culture. Mr. Kellogg attended the meeting unexpectedly, and had been assigned no place on the program, but when Mr. McNallie's time came he very thoughtfully gave his time to the visitor from Michigan, who made an excellent talk, in which he explained his theories of plant propagation and cultivation. Mr. Kellogg appreciated Mr. McNallie's courtesy, and so expressed himself, and the two gentlemen, who had been engaged in a war of words, enjoyed each other's acquaintance, and there was no more bitterness. Mr. Kellogg died shortly afterward, and now Mr. McNallie has also gone. Truly, a short time works many changes.

The plant business which was conducted by Mr. McNallie will be continued by his sons, who were associated with their father before his death. The firm name will be the D. McNallie Company, and the business will be continued along the high plane established by the founder.

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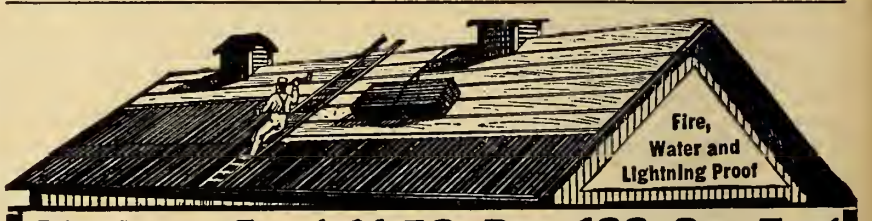

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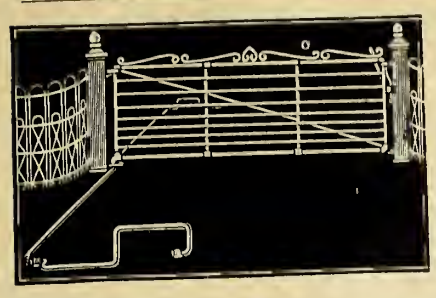

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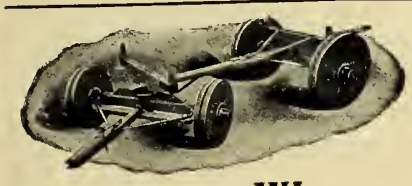

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The Apple in Oregon.

The above is the title of a very interesting bulletin issued by the Oregon Experiment Station, the author being Prof. E. R. Lake. The bulletin will be of great help to those who are planting new orchards in Oregon, and some of the facts developed will be interesting to growers everywhere. In this bulletin the author discusses the subject of pollination of blossoms, and quotes from the bulletins by M. B. Waite of the Department of Agriculture, and from the Delaware Experiment Station. The bulletin calls attention to the fact that the Italian prune trees in Oregon frequently have heavy crops, even where large blocks of this variety are planted together, but it very often occurs that trees of this variety planted in this way, have very light crops, and the suggestion is made that the lack of cross-pollination is the cause, rather than rains. late frosts, etc., which are often charged with the failure of the crop.

The bulletin recommends that attention be paid to the blossoming time of varieties of apples, and also to those varieties which seem to be most effective in cross-pollination. The author adds: "Varieties generally considered self-fertile, that is, safe to plant alone, are: Ben Davis, Rome Beauty, Jonathan, Baldwin, Fallawater, Oldenburg, Rhode Island Greening, Astrachan. Varieties that are considered more or less self-sterily are: Spitzenberg, Northern Spy, Gravenstein, Winesap, Bellflower, Willow Twig. The above list is only tentative at best. Investigations are a unit in declaring that, other conditions being favorable, nearly all varieties are more or less improved by cross-fertilization, hence a liberal mixing of varieties in a plantation is to be recommended, provided they are capable of inter-pollination. For it must not be forgotten that not only are varieties self-sterile, but that they are also cross-sterile. Until much more information is obtained in detail as to the conduct of particular varieties under the varied conditions to which they are subject, implicit confidence cannot be placed upon the reputed behavior of other than a few of the varieties most widely grown, as Ben Davis, Winesap, Jonathan, Rome Beauty."

The bulletin quotes from the published report of investigations in Delaware: "Investigations made in 1900 indicated that Stayman Winesap, Paragon, York Imperial and Missouri Pippin are self-sterile varieties. That Stayman and Paragon will not interpollinate; that Stayman can be fertilized by Missouri Pippin or York Imperial; and that Missouri Pippin and York Imperial will inter-pollinate. In 1901 investigations were made on a larger scale. The following varieties, located in three different orchards, were observed: Astrachan, Sweet Bough, Early Harvest, Early Ripe, English Russet, Fanny, Gilpin, Gravenstein, Grimes, Fourth of July, Lily of Kent, Missouri Pippin, Nero, Paragon, Red Streak, Stark, Stayman, Strawberry, Williams' Favorite, Winesap, Yellow Transparent. Only two varieties of this list proved to be fully self-fertile, Sweet Bough and Fourth of July, and these are of no practical commercial value. It was noted also that of this list the early varieties were the more self-fertile. Where duplicate trees of the same variety were observed, it was noted that there was a difference of degree of self-fertility between the individuals.

"In conclusion the author notes: 'It is essential that varieties blossom together if they are to be planted for inter-pollination. Apples are more stable in their blossoming habits than other fruits, especially plums. The length of the blossoming period of a given variety may vary with the season and with the care of the trees. The treatment of the soil has a considerable effect upon the blossoming period, for example: Light soil devoid of humus and lacking in tillage shortens the blossoming period. Good tillage, plenty of humus and fertilizing material in the soil prolong the blossoming period. Spraying to preserve the foliage is also a factor in lengthening this period. It appears that the blossoming period is apparently very largely governed—other things being favorable—by the length of the flower-forming period of the previous summer and fall.'"

Later in the bulletin the statement is made that "if fruit is wanted next year preparation for it must be made this year, while the tree is growing, and particularly while it is storing food during the latter part of the vegetative period. Feed the tree well this year; keep it clean and free from pests, and other conditions, as climate, being favorable next year, the tree will yield a crop in return for your judicious care."

That part of the bulletin which refers to cover crops will be appreciated by growers everywhere. Here, again, the bulletin quotes from the reports of the Delaware Station, as to the functions of a cover crop, as follows:

"What does a cover crop do?

"(1) If sown at the proper time, about August 1, if weather conditions are favorable, it competes with the trees for soil moisture and plant food. The supply of moisture and food to the trees is lessened and their growth is checked. This is desirable, because at that time the trees should stop growing and ripen their wood for winter. (This statement refers more particularly to young trees.)

"(2) It catches soluble nitrates late in the fall, when root action of the trees has nearly or quite ceased, thus much plant food is saved rather than allowed to escape in drainage.

"(3) It prevents erosion of the surface soil by catching the rains as they descend and by conducting them into the soil. This is in contrast to streams of water flowing over the bare surface and cutting channels for the escape of surplus water. It also holds the snow of winter, which adds to the efficiency of the protection.

"(4) It protects the ground from frost to a certain extent, that is, actual tests have proven that ground protected by live cover crops during the winter does not freeze so deep as does bare ground.

"(5) In the spring it catches soluble nitrates that might leach out of the soil before active root action of the tree begins.

"(6) It pumps the surplus water out of the soil early in the spring, so that the ground warms up and may be plowed earlier than if no cover crop were used.

"(7) When plowed under these crops add enormous amounts of vegetable matter, or humus, to the soil. The humus improves the mechanical condition of the ground by loosening up the soil particles; it increases the water-holding power of the soil, provides a favorable home for soil bacteria, furnishes elements of plant food in available form, and assists in breaking up chemical compounds of plant food which would otherwise remain unavailable.

"(8) Experience has shown that the continued use of cover crops will, to a certain extent, make heavy land lighter and light land heavier. This is an immense advantage in practical orchard operations."

Cover crops may be grouped into two—possibly three—classes: The leguminous, as peas, beans, alfalfa, clovers, vetches, cow peas, and the like; the potash gatherers, as turnips and rape and probably kale, and the non-leguminous, as rye, wheat, oats, barley, mustard, buckwheat, rape, millet, corn and others.

The first class are the so-called nitrogen gatherers, and may be considered fertilizers as well as cover crops. One of the most important materials used in plant growth is nitrogen. This material bought as a commercial fertilizer or applied with barnyard manure compost is quite expensive. It abounds in the air as one of the principal gases, and, so far as we know at present, this gas can be used directly only by leguminous plants. Or, in other words, this free nitrogen of the air, which is inexhaustible, is made available as plant food through the agency of leguminous plants, while other plants must get the nitrogen required for their growth from the supply in the soil or that set free by decomposing plants or animals. Then, since nitrogen is one of the most valuable of plant foods, it is evident that any plant which is able to get its supply of this element from the inexhaustible stock of the air must be doubly valuable as a cover crop.

By recent analyses it is made evident that certain plants, cowhorn turnips and rape, are rich in potash. It thus appears that such crops used for cover purposes might put the potash supplies of the soil within easy reach of the tree. If the soil in an orchard is rich in humus and nitrogen, a cover crop of potash-gathering plants, if from such knowledge as we have of them, we may call them such, would be the logical one to use. In this connection it may be well to note the fact that Scotch kale, a plant closely related to the turnip, has been giving remarkable yields in Western Oregon, as a forage plant for dairy purposes. It seems probable that this plant would do efficient service as a cover crop in soils in good tilth and well supplied with humus.

The bulletin recommends vetch as one of the best fertilizers for Oregon, if one of the nitrogen-gathering class is desired.

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Gardening Department

The Cabbage Corner in the Trial Grounds.

I suppose the members of The Fruit-Grower Family often wonder what the trial grounds look like that I am always telling you about, so I give you here a photo of the corner of it where I have the trials of cabbage. I wish you could all come and see me and see the stuff growing, but as that is impossible for most of you, the photo is the next best thing.

This is the lowest corner of the grounds and the richest ground, so I put the cabbage there, planting the seed in the hills right where it was to stand, May 15. There are about 30 varieties, a row of about 20 plants of each variety. If you look close you can see some of the stakes that I have at the head of each row to show the name of the variety, the test number, and other particulars. This picture was taken July 15, just two months after sowing the seed. The

end of the patch shown is the late cabbage, which at that time had made no heads, but the early varieties up at the other end were pretty well headed up, and some ready to cut.

The earliest varieties were the Jersey Wakefield and the Eureka. They came in right together, with nothing to choose in the way of earliness. The Eureka is a flat head, and is earlier than any other flat headed sort I have ever grown. It is small but very solid, and coming in so early it is very popular. I shall plant heavily of it next year. It has small leaves and will stand closer planting than any other sort. It will take the place of the Jersey Wakefield in markets that prefer a flat early cabbage. In some markets, however, the pointed shape of the Wakefield will be preferred.

Following these two came the Charleston Wakefield and the Early Spring, the latter flat headed and much like the Eureka, but later and larger. They were perhaps four or five days behind the first cabbage. The Allhead and the Winningstat came in next, about eight days after the earliest. The Allhead is as large as a late cabbage and is a hard one to beat. It is very solid and of perfect form. The only trouble is it sometimes grows almost too large to sell well in a home market. Allseasons is much like it, but a week or two later. The Winningstat is an old favorite and is the solidest cabbage I ever saw, but not very large. It is very pointed.

The new Volga came in between Allhead and Surehead in time of ripening. It is a good cabbage, solid, low to the ground, deep, and fine grained. It will take a permanent place in the

list. Cornbelt came in with Surehead and as usual is hard to beat. Both are big, sure to head, and good every way. Flat Dutch, Ideal, and three strains of Drumhead came in together, the last of the standard sorts, about five weeks after the earliest. All are big flat late cabbage, a little coarse, but good for winter use and for kraut. Three sorts have not yet headed, the Houser, a kind from North Carolina, and one from Turkey. All are very late, wide spreading, and coarse.

After looking them all over, my list for my own planting next year will be Eureka, Wakefield, Allhead, Volga, Cornbelt, and Flat Dutch.

The New Greenpod Bean.

I show above a good photo of the new greenpod bean I told you about last month, as it stands in the row in the trial grounds. This was taken about 56 days after planting, after we had been picking on them for a week. This bush, however, has had none picked off. It shows the shape of the pod well. The next row, beyond the hat, is Early Refugee, which does not show a pod yet. I expect to distribute this bean next spring, but if any of the Southern readers have time to make a crop yet this fall, I will be glad to send a sample for trial. It will be worth while to try it, for I believe it is the best new greenpod bean I have seen for years.

Seasonable Garden Work.

You can make great progress on your next year's garden right now. Many crops do as well or better sown in the fall, and this month is the time for it. In the Southern states a great deal of gardening is done in the fall, but even here in the corn belt there is much that can be done.

Lettuce, spinach, kale, mustard, and onions can be sown in the open the last part of the month and with a little protection will live over all right and come on in the spring away ahead of spring-grown seed. Try it. If it fails you will be out nothing but a little for the seed, as you can seed it over in the spring easily. It is almost certain, however, that the little plants will live over and come on all right. It is a very common practice too, to sow onion and other hardy tice, too, to sow onion ond other hardy they will not sprout till spring. Then the first nice weather that we have in the spring, up they come. Often the ground will be wet for a long time in the spring so that it cannot be worked, but if your seed is sown in the fall in this way, it is there and growing all the time. I expect to put out a good bit of early garden this month, and more in November.

By All Means Fall Plow.

If you possibly can get any land cleared off between this and freezing, plow it up ready for next spring, whether you plant it or not. All kinds of garden stuff does better on fall plowed land. It is ready to work much sooner in the spring, and is in better condition, fine and nice.

For potatoes it is especially important to get the land plowed in the fall.

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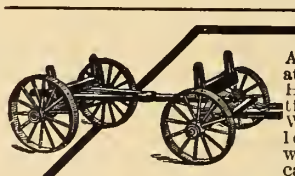

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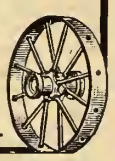

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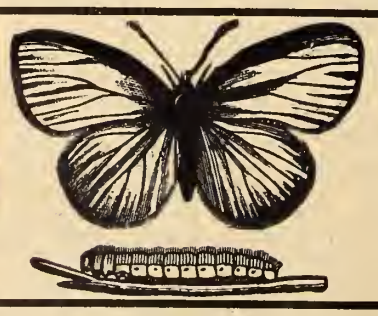

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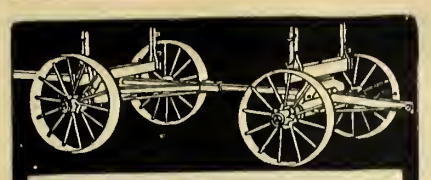

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A Cure for Cut Worms.

It is a fact that cutworms do not work on fall plowing that was plowed fairly early, say by the middle of September. The moth lays the eggs in weeds or grass in September and the little worms live over to bother us in the spring. Fall plowing gets away with them and I have never been bothered with cutworms on land that was plowed early in the fall. Next spring when the cutworms are taking your plants, remember this. Better to remember it now.

Set Asparagus Plants Now.

Asparagus plants can be easily set in the fall, any time before freezing weather and do better than when set in the spring. They are hardy things and start very early in the spring and if you have them there ready they will come on with a rush. Get the ground in nice order and set the plants just like you would raspberry or strawberry plants, only possibly a little deeper. Set tolerably thick in the row, and the rows as wide apart as will be convenient to tend. We make our rows about 3 feet and tend with a horse. In the garden, less would be better.

Get Ready for Strawberries Now.

Strawberries should be set very early in the spring, the earlier the better, and you must have the land ready in the fall so there will be no delay in the spring. Pick any convenient place in the garden (be sure it is big enough), manure it heavily, and plow and harrow it till it is in the best of shape. Then sprinkle a little well-rotted manure on top to make a thorough job of it. You can't get the ground too rich for strawberries. In the spring, as early as you can, get some first-class young plants of good varieties (Splendid and Senator Dunlap are my favorites) and get them in. They are almost certain to live. If set at the right time of the year a strawberry plant is hard to kill, if the roots are covered with dirt.

Time to Set Peonies Now.

Now is the time to set out those peonies you have been wanting. They can be set in the spring, but much better now. Get some of the best new named sorts, put them in rich soil, and you will be surprised at the wealth of beauty and fragrance you will have.

The Sweet Corn Trials.

I had in the trial grounds this year all the varieties of sweet corn I could find that I thought would be of value. All were planted on May 25 in hills three feet apart each way and were later thinned to two talks to the hill. I was specially anxious to find some good corn earlier than the Cory. I failed to find anything earlier, but two or three are a little nicer looking corn. The first roasting ears picked were on July 25, just 60 days from planting, but they could in t pinch have been counted as ready a few days sooner. The Cory (both white cob and red cob), the Premo, Malakoff, Peep 'o Day, and a white Squaw corn, all came in together. Malakoff was the smallest ear of the lot, but nice form, and a good ear. Premo was the longest ear. Cory was uniformly good size and is hard to beat for first early.

White Mexican came in about two days later, and was much better than any of the others I have named, being a longer, larger ear and sweeter. For main crop early, after the first two or three days, it is the best of the lot. There is an earlier strain of it that is as early or earlier than the Cory, but I have been picking for a larger ear and higher quality, and have let it get a few days later, and I think it is a good improvement.

Black Mexican, Early Champion, Early Minnesota, Shaker's Early, and Early Evergreen, came in together about a week after the earliest. All are good corn, an dit is hard to make a choice among them. I think, however, that my preference would be Early Champion.

A good early corn was sent in by the North Star Plant Farm of Cokato, Minn. It is about the same season as White Mexican, but a shorter, heavier ear, and the stalk does not sucker. It is good corn. A corn very similar to it was sent in by C. M. Elder, Baring, Mo.; it is a few days later, but is very fine. It is more in the class of Champion.

I had a half a dozen strains of Everygreen sweet corn, from various sources. All were good, coming in about two weeks or possibly 20 days after the earliest. The best of the lot is the White Evergreen. The ears are not overly long, but are very deep grained, and generally two on a stalk. It is the best main crop sweet corn we have and it is hard to say enough good things about it. I expect to discontinue the regular Stowell's entirely and I note that many of he canning facories are doing the same.

Of the very late corn, I have several strains of Country Gentleman all good and all small. H. H. Cummins & Son, of Bernardi, Okla., sent me a pink Country Gentleman that is very fine. When at the eating stage the ears are perfectly white, but as the seed drives it turns pink. It is fair size, sets generally three ears to a stalk, and is of splendid quality.

A Pink Evergreen Sweet Corn.

G. H. Cummings of the Sioux City Seed Co., who, by the way, is the originator of the White Mexican, sent me an ear of a pink or rose colored Evergreen corn that gives promise of being very valuable. He tells me that it is the product of an ear that he found among some Stowell's Evergreen, and saved it on account of its beautiful color. The ear is of the typical Evergreen type, but is much earlier, coming in with Champion. It will come in exactly to follow White Mexican or Cory, and besides being quite large, it is deep grained (much more so than Champion, small cob, and exquisite flavor. The pink color

I suppose by now you have the onions and onion sets pulled and piled. does not show till it is ripe, and then the top of the grain turns to a delicate rose color. As soon as my stock of it is dry enough to shell, I will be pleased to send a small sample of it for trial to any of the Fruit-Grower people who are interested in sweet corn.

Care of Onions.

They will keep well, all winter, if necessary, if they are kept dry and cool. They must be piled thin best not over 4 inches deep, and they must be kept fairly cool and well ventilated. When it comes severe freezing weather, get them inside, but leave them out as long as you possibly can.

Best Time to Dig Potatoes.

If potatoes are to be stored for winter use, you had better leave them out in the ground as long as you can without danger of freezing. They are better off in the ground than in the cellar. Of course if the ground is very wet and soggy they will not keep, but the chances are that if they were grown in that kind of ground they would not keep in the cellar either. We generally begin digging to put in the cellar about the first of October, as we have lots of them to dig and want to get done that month. Don't be in any hurry to dig, unless you have to get them out early for some reason.

Does Climate Affect Earliness?

I have always heard it said that seed of any vegetable grown in the south would be later in ripening than seed of the same variety grown north, but I am beginning to rather doubt it. The two earliest watermelons are the Cole's Early and Phinney's Early. This year in my trial grounds I have seed of both from South Dakota, Nebraska, Iowa and Oklahoma. On the theory given above one would naturally expect them to ripen in that order, but the fact is that the first melons ripe and the best ones are on the row from the Oklahoma seed. Last year the results were the same. The only way I can explain it is that Oklahoma is the natural home of watermelons and the seed from there is better developed and stronger. Certainly the vines are stronger, the melons more plentiful and the quality better, besides being earlier. It was a surprise to me, as I would have gambled on the northern seed being the earliest.

I would like to hear from any of you who have had experience along this line with melons and other garden crops.

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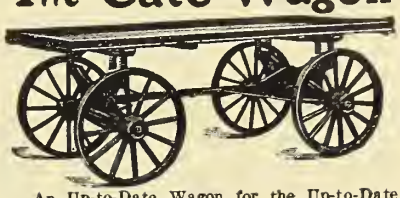

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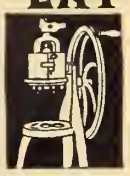

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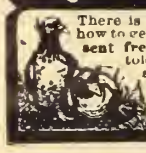

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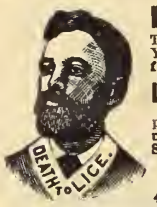

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Poultry Department

Egg Production on the Farm.

Poultry Success recently published some letters from general farmers, giving their experience in raising poultry for egg-production on the farm. No farmer can better afford to care for his poultry than the one who grows fruit, and therefore we publish one of the articles published in the paper referred to. It is by Mr. J. C. Cramer, Allegan, Mich., and is as follows:

No branch of farming pays the percentage of profit on the capital and labor required as does poultry raising and egg production on the farm, especially the latter. The cost of producing eggs is from 4c to 7c per dozen, according to circumstances, conditions and care given them. A farm of 20 acres, stocked with good laying hens and properly managed, will make the owner more money than a farm of 200 acres worked as the average farms of this country are.

The capital invested is much smaller and far less labor is required to care for them.

First—Get some good laying variety of hens, such as the Wyandottes, Plymouth Rocks or Minorcas, which lay a fair-sized egg of good color.

Second—Keep but one variety of fowls and keep them pure-blooded.

Third—Never cross breeds, as that has a tendency to lower the quality of the eggs produced.

Fourth—If you do cross them, be sure to cross with some variety that lays the same colored eggs. Never cross a hen that lays a brown egg with one that lays a white one, as that makes a mongrel egg, which never sells for the highest price in the large cities, where we must look for our best customers on high-priced eggs. They want either chalk-white or deep brown, of good size, strictly clean, and as fresh as possibly can be. They are willing to pay good prices for them.

Fifth—Always market your eggs every week in summer, and at least every two weeks in winter. Eggs held several weeks by the farmer become shrunken, and have to sell for No. 2 or culls, which keeps prices down at your country stores, for no dealer will pay full price for a lot of held, shrunken or often rotten eggs, and the storekeeper cannot pay high prices unless he gets clean, fresh eggs from the farmer. So, Mr. Farmer, it rests wholly with you whether you get low prices or high ones for your eggs, the same as it does with your apples, potatoes, or any other crop. Quality counts every time.

Sixth—When you have started to raise the right quality do not spoil it by letting your hens have to hunt nests to lay their eggs in weeds and such places, but provide them plenty of clean, dry nests, where they can go and deposit their eggs at will. Straw is cheap; so use plenty of it and keep the nests clean and free from vermin, and your eggs will always be wanted by those who are willing to pay good prices for them—for, as yet, the supply of fine stock has never been equal to the demand, and probably never will be.

Seventh—Never wash a dirty egg, as water on the shell opens the pores and allows the air to penetrate the egg, soon spoiling it. Scrape off the dirt with a knife, and if too dirty keep it at home, for dirty and small eggs mixed with others is like putting small potatoes or apples in with good ones when you take them to market.

Eighth—Raise your chickens with a good incubator, as it is no more trouble to raise 500 chicks with a good incubator and brooder than it is to raise 100 with hens. Then you can keep the hens laying and earning you money while the chicks are growing. The percentage of loss is much greater in raising them with hens than by the incubator process.

Small chicks require a balanced ration of small fine seeds during the first two months of their existence, which feed can be had at low rates. Hatch chicks early with the incubator and they will begin to lay in September or October, and will lay all winter when eggs are worth from 20c to 30c per dozen.

Ninth—In fall and winter feed your laying hens as follows: In the morning feed one quart of small grains, such as wheat, millet and buckwheat and cracked corn, etc., in about one foot of clean, dry straw, in a scratching or feed pen, which can be cheaply made. This makes them work for their breakfast and keeps them warm. It also prevents them taking on too much flesh, which is very important if you want plenty of eggs. Then at noon give them a warm mash feed of balanced ration, which is gotten up by our agricultural colleges expressly for your farmers so your hens will lay in winter, when prices are high. It is composed of different egg-producing cereals, also meat-meal, bone-meal, sunflower seeds, oil meal and other egg-producing feeds containing plenty of protein and phosphates, making a perfect balanced ration without any spices or stimulants which are used in nearly all egg foods and which are detrimental to the growth and health of the hen. It causes the eggs in the hen to develop and when developed the hen must lay them, no matter how cold the weather is. A hen kept in a healthy condition, laying all winter, is in far better condition for a summer layer than on that is improperly fed and over-fattened during winter months by feeding corn all the time, for when she gets to the fresh green grass in the spring she is starved for green feed and over-eats, causing bowel trouble, which often kills whole flocks and is many times mistaken for cholera, when it is nothing but improper feeding which caused it. In the afternoon in winter feed them what corn they will eat, in the same straw you fed the morning ration. This keeps them warm through the night.

When marketing your eggs care should be taken to cover them up well to prevent them from getting wet, or too hot in summer or too cold in winter. Keep your eggs, when at home, in some cool, dark place, such as a cellar or cellar-way, where the temperature is cool and even, for warm and uneven temperature, sunshine or water on the shall soon spoil the best of eggs.

In cold weather warm the drinking water, and be sure it is clean and fresh every day; also provide them with all the oyster shells they will eat. Give them plenty of raw vegetables, such as cabbage, potatoes or turnips, and last, but not least, a good supply of clover leaves or hay once

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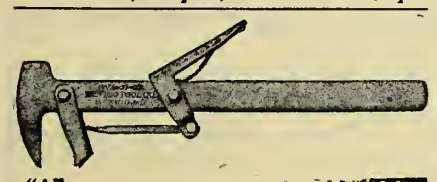

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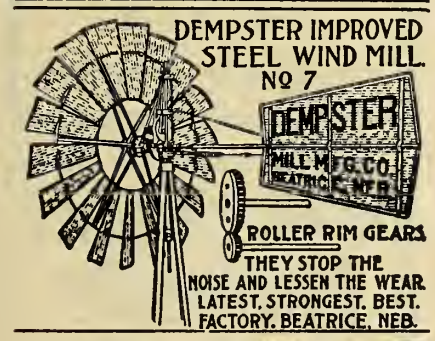

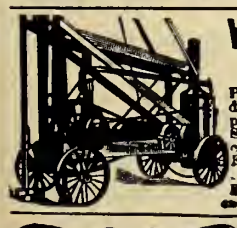

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every day to substitute the grasses they eat in summer.

Lastly, keep your hens free from lice.

The Art of Moulting and Its Value.

The experienced poultryman early learns that in the art of moulting his hens large figures may be added to his profit account, and that there is much in learning how to have his hens moult properly to his greatest advantage; all of which is within the control of intelligent treatment. The two essentials that must be sought are:

1. Moulting early.
2. Moulting so as to leave the hens in good health.

Early moulting brings many fall and winter eggs, and healthy moulting many more eggs and the saving of many hens that are otherwise ruined or die from unhealthy moulting.

Hens kept in vigorous and healthy condition will usually moult so gradually as not to be noticed, and are correspondingly unaffected by their moult. I could not have known when my hens moulted last year except by the amount of feathers left in the chicken house.

Early moulting can be secured in two ways, viz: by hatching early (according to my experience February hatching for the larger breeds brings the best results), and proper feeding for egg production, and by a treatment as to feeding just at moulting time, early, this consists in lessening the feed for about a week, the latter part of August, then followed by good rich feeding (not cramming) composed of mash in the morning, made hot, mixed of bran, shorts, ground bone or meat, fresh if obtainable, or oil meal; bran and shorts in equal parts, green cut bone at the rate of a half ounce per day, oil meal one-third; every other day substitute cooked crushed oats instead of shorts and mix enough bran to prevent it from being mushy; the mixture should be as dry as it can be made to stick together, yet not in such condition as to allow the hens to cram it down too rapidly; mix a little salt with it every day and all the red pepper that is safe every other day. The evening meal should be varied between oats or barley soaked in boiled water so as to soften it, and wheat or other grain mixed largely with sunflower seed, In fact they should have all the sunflower seed they will eat. Continuous feeding of mashes often causes loose bowels, that can be stopped or prevented by substituting grains or other dry feeding for a few days, or by making the proportion of shorts larger, or by using some cooked rice in the mash. No feed is equal to fresh cut bone or fresh meat; I prefer the meat cooked, as cooking makes it more digestible. I use the rich water or gravy in which it is boiled to moisten the mash, and thus save all the strength of the meat. Great care should be used to avoid feeding tainted or impure meat, as nothing will kill hens quicker. At no time of the life of laying hens is plenty of exercise more essential than just at the time of moulting. Great activity at this time not only wards off disease, but also enables them to shed feathers vigorously; for it is the feather that hangs on when the life of it is gone that saps vitality and causes sluggishness and disease. Look well at this time also that they not only have sufficient sharp grit at hand, but that they be induced to eat more than usual, for they can be taught to eat more when good fresh grit is frequently placed before them. In this their digestion will be greatly aided, and good digestion at this time is more important than at any other time. See also that their houses and dropping boards are kept unusually clean now, and that they get plenty of fresh air and water, for the moult season is a critical period in the life of a hen, and unfailingly develops any lurking disease or weakness, and without looking well to the essentials here pointed out, many fine hens will be lost to the poultry yard and the income from egg production will be very materially lessened, especially at a season when eggs command the highest prices. I have had less difficulty with my Orpingtons than with any other breed in moulting, for the reason that their disposition to set during the summer months saves their vitality for laying and moulting in the fall and winter. I do not break up their setting disposition promptly because it pays to let them rest in the summer time when eggs are cheap. They lay almost constantly when not setting, and begin laying a week after they commence brooding a hatch of chicks. In fact I have quit giving chicks to young pullets because they show a disposition to commence laying again with their young chicks too soon.—Geo. Venable Smith, Port Angeles, Wash., in N. W. Horticulturist.

Poultry in the Northwest.

On the recent trip of a representative of The Fruit-Grower through the northwestern part of the United States he was impressed with the fact that poultry-raising is very much neglected in that country. On few farms could be seen the large flocks of poultry which are found on the farms of the Missouri Valley. Yet it would seem that everything should be in favor of poultry raising in the Northwest. The climate is suitable for poultry raising—in fact, more satisfactory than in the Middle West, where excessive rains in spring often cause great loss of newly hatched chicks. Summers are dry in the Northwest, and if shade is furnished the fowls should do well. Feed is plentiful, and markets are very good, so that poultry-raising should be profitable. And yet the farmers do not seem to have appreciated this fact as their brethren have done farther East.

Feeding Green Bone.

Green cut bone has great value when used as an addition to the poultry ration. It is good both for eggs and for growth of chicks. A moderate feed of green cut bone has been known to start egg production when everything else fails, says Farm Stock Journal. The quality of the bone makes considerable difference. The more scrap meat that is included the better the feed, provided the meat is fresh and wholesome. Raw bone with a liberal sprinkling of meat scrap fresh from the block is the most valuable form in which it can be obtained. Boiled bones that are extracted after the meat is cooked for other purposes are not so good, because the boiling extracts most of the soluble food elements. The smaller bones contain more scrap, cartilage and other food particles in proportion than the big beef bones. It seems to make but little difference whether the bones are from cattle, sheep or hogs, but the smaller bones in any case are to be preferred. Bones that have been boiled and exposed to the weather are of little value except for the lime they contain. One reason why some poultrymen are more successful in the feeding of cut bone than others is that they are more particular to have them fresh and feed in quantities, according to the needs of the fowls. Judgment, of course, is necessary in this respect as well as in all other live stock matters.

The White Wonders.

At your request will describe the White Wonders. They very much resemble the White Wyandottes, about the only difference is that they have a few feathers on their legs. They are not admitted to the Standard as a variety of fowls. They are an offshoot from some other variety, no doubt from the White Wyandottes. The White Wyandottes, the White Plymouth Rocks and a number of other Standard varieties very often throw off what is termed shoots. That is the featherless legged chicks very often have a few specimens that have feathers on their legs, and no doubt in this way the White Wonders were established. Looking at it from my point of view, I would not advise any one to adopt that variety. I see no advantages in them whatever over any of the other Standard varieties. The truth is, as it appears to me, there are already too many kinds of poultry. After all there are only about four kinds. The Plymouth Rocks, Wyandottes, the Brahmas and the Leghorns are the four kinds, all other kinds are a modification of these kinds. These four kinds are not the only good kinds. The Black Minorcas and a number of other varieties are good, but it is very doubtful if any are better than the four Standard or leading varieties.

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I can give you many valuable pointers as to locations and business chances. If this interests you, write me to-day, telling me what you want, how much you have to invest and I will assist you. Write for "The Coming Country." It will interest you.

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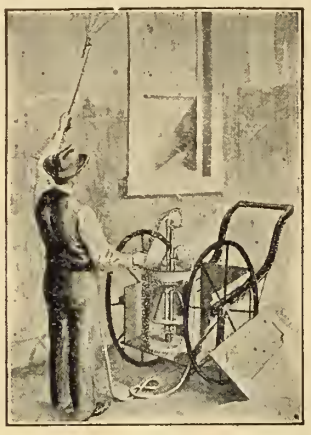
The well known firm, Rippley Hardware Co., Grafton, Ill., manufacturers of sprayers, etc., have favored us with a cut of one of their latest combination machines for spraying and whitewashing, and when not in use for this purpose the cart can be used for hauling around the farm. By the use of this machine a great deal of money can be saved, and it is a pleasure to whitewash with it. One man can do as much and better whitewashing in one hour than five men could do in the same length of time with brushes. The pump is made of brass and has brass ball valves. The reservoir is made of galvanized steel, brass and copper. The cart is steel, with the exception of sides and bottom. The machine is fitted with 10-foot hose and 8-foot bamboo extension rod, and trees or buildings 50 feet high can be whitewashed or sprayed. We advise our readers to send and get a copy of their catalogue, as they manufacture many labor saving machines. Any order entrusted to them will be promptly filled.



Pull the Stumps.

After harvest is a good time for those who have stump fields to get the land in readiness for next year's crop. In many cases these stump fields are the best acres on the farm. There are a good many of our readers who would get good from such a piece of machinery as the Hercules Stump Puller, manufactured at Centerville, Iowa. It is a strong machine that will pull any sized stump. The farmer needs no additional help to operate it. There's many a time when he can take his team and lift half a dozen or a dozen stumps and not miss the time. This operation several times repeated will tell in the spring. It pays, for the extra land he gets, and it pays for the easier working of the remainder. Pulling stumps with a Hercules machine is a far better method than the dangerons one of stump blasting. Using powder in quantities is not in the average farmer's line. Stump pulling is an operation he knows all about. He will hardly wear out a Hercules Puller in his lifetime. It is a good piece of property for a man who owns a stump field to buy and keep on his farm. Prices and all particulars as to duty, etc., can be had by writing the Hercules Mfg. Co., Centerville, Iowa.

Cutting the Green Bone for Hens.

As the fall season approaches poultry keepers who have not acquired the green cut bone habit should determine to get in line. They are working at a disadvantage. So much has been written, all to the same purpose, that there can be but one opinion as to the advantages of its use.

The only question open for discussion is the machine to reduce it with least trouble to right feeding form. This seems to he very well solved by the F. W. Mann Co., Box 000, Milford, Mass., with their Latest Model Bone Cutter. It has several points of advantage over ordinary bone cutters, chief of which are its easy running and its grinding of all kinds of bone with meat and gristle without clogging or other trouble to the operator.

A peculiarity of the Mann machine is that it adjusts to suit the strength of the operator. It has long been, if not the best type of bone cutter made, at least one of the first to be considered by any one going to buy. It is sold freely on trial and shipped anywhere without any advance payment. There can be no question but that an intending purchaser will be serving his best interests by writing the Mann Co., and learning all about their machine and terms before placing an order.

We invite the attention of our readers to the new advertisement of Cornelius & Brown of Hastings, Nebraska, in another column of this issue. While this pushing firm has some very finely improved farms in the vicinity of Hastings, Adams county, they are making a specialty of good farm lands and improved farms in the western part of Frontier county. Some phenomenal yields of all kinds of crops are reported from that section, and investments can be made out there for the next sixty days that will surely bring the investor 25 to 50 per cent profit in a short time. All this firm ask of you is to come and be shown. The lands and crops do the talking.

The advantages of a thorough business conrse is of more real value to the farmer's son than to almost any other boy, for nowadays it is the farmer who combines brains with brawn who succeeds in life. Brawn alone will not do it. At the National Business College, Quincy, Ill., students are given a thorough training in the courses they may select, by competent teachers, and fitted for their struggle for fame and money.

Ten cents is a small price for complete instructions upon the killing, dressing, cooling, packing and shipping of market poultry, but the Stapler Poultry Supply Co., of Pittsburg, Pa., offers to send their valuable booklet, "How to Dress Poultry," upon receipt of five 2 cent stamps. This subject has been woefully neglected np to this time, and as this book is so comprehensive, and shows photographs of the dresser at work, we would suggest that all our interested readers send for a copy. Their offer appears on another page.

We call attention to E. Maudlin's nursery ad. in another colnmn of this issue. His prices are resaonable, and yon may be snre of getting good plants. He has a nice variety to select from, and wants every one interested in fruit to send for his catalogne.

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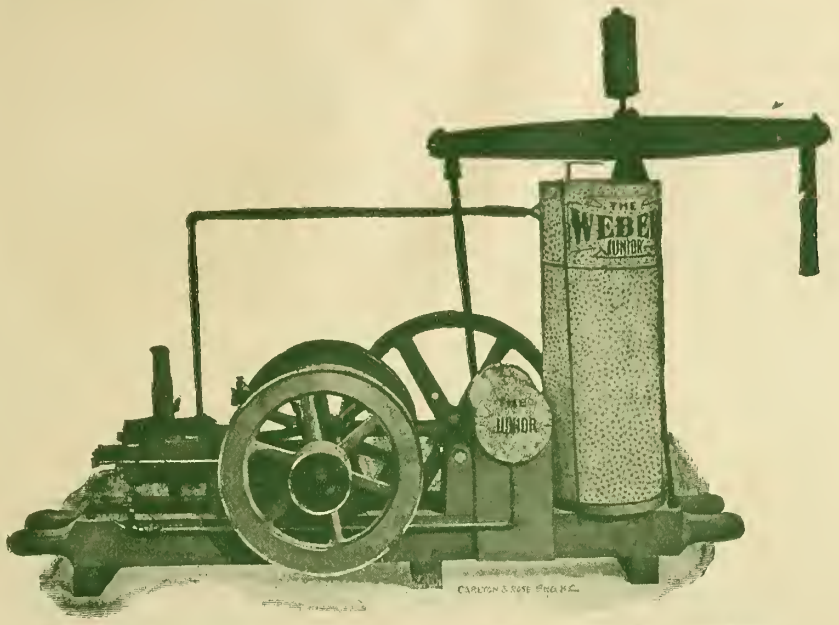

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Farm and Stock will be published monthly—daily papers give farmers the market quotations, and current news, and Farm and Stock will devote its space to keeping its readers posted concerning developments in the agricultural world. In other words, Farm and Stock will be modeled along the line of The Fruit-Grower, except that it will be devoted to general agriculture, paying particular attention to the breeding of live stock, improvement of corn and other farm crops, etc.

Subscription, $1 Per Year

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Special rate of $15, $30 and $60, for Quarter, Half, and Full Page Advertisements, Respectively.

The Fruit-Grower Company will have general oversight over Farm and Stock, and the same policies which have made such a success of The Fruit-Grower will be adopted for the new publication.

For any further information concerning the new paper, address

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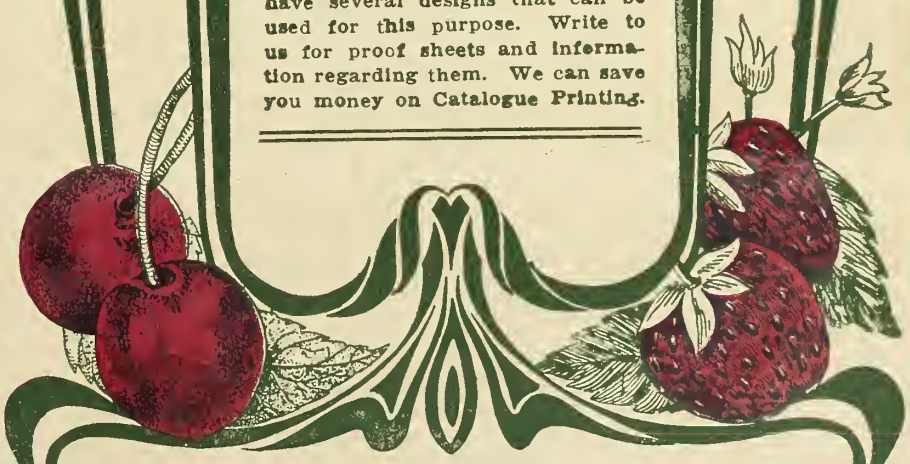

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BECAUSE, we are constantly on the watch, not only for valuable new varieties of fruits, but for the best strains as they are developed. As soon as an improved strain is found it is propagated and the inferior discarded;

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October, 1905

Volume 16 Number 10

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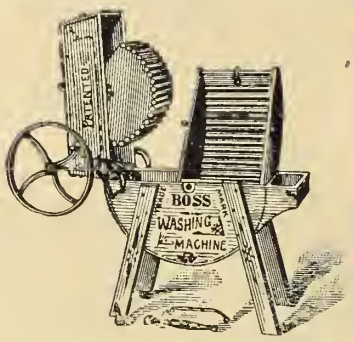

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The Western Fruit-Grower

An Illustrated Monthly Magazine For Progressive American Farmers.

Volume Sixteen ST. JOSEPH, MISSOURI, OCTOBER 1905. Number Ten

American Pomological Society Meeting

The thirty-ninth biennial meeting of the American Pomological Society was held at Kansas City, Mo., September 19 to 21, and was a very enjoyable meeting, although the sessions were not up to the standard of the last previous meeting. While the attendance from the West was good, many of the Eastern members who have been present in other years, and who have done so much to make the society what it is, were absent, and they were missed. Among those who were absent, were President J. H. Hale, W. C. Barry of Rochester, N. Y.; Prof. F. A. Waugh of Massachusetts; Prof. L. H. Bailey of Cornell University; Wm. A. Taylor of the United States Department of Agriculture; Hon. Charles W. Garfield of Michiga ; Prof. Lazenby of Ohio; M. Crawford of Ohio, and many others. The absence of these gentlemen was felt, for they have helped to make the meetings a success in other years, and particularly the meeting of two years ago.

One feature of the meeting which was a success was the arrangements by the local committee. Everything was in good order, and the visitors were royally entertained. A complimentary banquet was tendered the visitors the opening evening, the next day a trolley excursion was provided, and after adjournment a complimentary excursion through parts of Southern Missouri and Western Arkansas was provided by the Kansas City Southern and Frisco railways. The local arrangements were in charge of the local members of the Missouri State Horticultural Society, headed by Secretary Goodman, assisted by the members of the Missouri Valley Horticultural Society, and the members of the Kansas and Arkansas State Horticultural Societies.

The following officers were elected for the ensuing two years: President, L. A. Goodman, Kansas City, Mo.; Vice-President, T. V. Munson, Denison, Texas; Secretary, John Craig, Ithaca, N. Y.; Treasurer, L. R. Taft, Agricultural College, Mich.

The display of fruit was very creditable, considering the shortage of the apple crop this year. The fruit in a number of the exhibits was not up to the standard of the society in quality, however, for many apples showed the work of insects, etc., and should not have been displayed. Features of the exhibits were the exhibit of pears made by Ellwanger & Barry, Rochester, N. Y.; exhibit of apples by the Missouri State Horticultural Society, part of the apples having been shown at St. Louis a year ago and kept in storage until now; exhibit of grapes by Fabian Garcia, Mesilla Park, N. M., which was very fine; very fine apples grown in Washington, exhibited by Stark Bros. Nursery & Orchards Co.; cross-bred apples exhibited by C. G. Patten, Charles City, Iowa; exhibit by Nebraska Horticultural Society, including many varieties of summer apples; exhibit of mixed fruits by C. E. Bassett, Fennville, Mich.

Wilder medals were awarded by a committee consisting of Col. G. B. Brackett of the United States Department of Agriculture, Prof. S. A. Beach of Iowa, and Prof. N. E. Hansen of South Dakota, as follows:

Silver medals to Missouri State Horticultural Society for exhibit of apples; Ellwanger & Barry, for exhibit of 127 varieties of pears; C. G. Patten, Charles City, Iowa, for forty-five plates of cross-bred apples.

Bronze medals to Stark Bros. Nursery & Orchards Co., for exhibit of Black Ben and Delicious apples; Nebraska State Horticultural Society, for exhibit of varieties of apples; Fabian Garcia, New Mexico, for exhibit of grapes; C. E. Bassett, Fennville, Mich., for exhibit of mixed fruits.

These medals, as is well known, are provided from the interest received from a fund left to the society by the late Marshall P. Wilder. In awarding the medals the judges are naturally very strict, and only exhibits which are very good receive the medals. This is indicated by the fact that exhibits by Olden Fruit Co., A. T. Nelson, Ozark Orchard Co., and others were given awards of honorable mention, but received no medals, although in ordinary cases these exhibits would have been very creditable indeed. The care with which these medals are awarded naturally makes them the more appreciated by those who receive them.

The meeting was called to order Tuesday evening, Sept. 19, by Secretary John Craig, who explained that President J. H. Hale could not attend the meeting, on account of his fruit crop in Connecticut. C. L. Watrous of Des Moines, Iowa, an ex-president of the society, was called to the chair, and presided during the entire meeting.

Mayor Neff of Kansas City, welcomed the visitors, and H. M. Dunlap of Illinois responded. Reports of Secretary Craig and Treasurer Taft were submitted, the latter report showing the society to be in good finan ial condition.

The first session adjourned early for the banquet room, in another part of the building. At the banquet C. H. Dutcher of Missouri, presided as toastmaster, and short talks were made by E. W. Kirkpatrick of Texas, N. E. Hansen of South Dakota, S. B. Green of Minnesota, W. H. Ragan of the United States Department of Agriculture, H. M. Dunlap of Illinois, John Craig of New York, E. M. Pollard of Nebraska, and L. A. Goodman of Missouri. The latter, on behalf of the students of Park College, presented the society with a gavel, made by the students from a very old apple tree and bound with silver bands. Earlier in the session William H. Barnes of Kansas had loaned to the society the gavel which was presented to the Kansas State Horticultural Society by Marshall P. Wilder, and which was made from one of his pear trees.

Wednesday morning Albert Dickens of the Kansas State Agricultural College read a paper on "The Americana Plum in Kansas." Mr. Dickens told of the early struggle in Kansas to get fruits which could be grown successfully, and of the gradual improvement of the Americana plums. This class of plums offers great possibilities. Some of the varieties need thinning, being inclined to overbear, but they are not so bad in this respect as are those of the Chickasaw type. Wyant has been more largely planted perhaps than any other variety. Bixbee and Rollingstone are the shyest bearers. Wounds made in pruning Americana plum trees do not heal as readily as wounds in trees of the other types of plums. As to the rotting of Americana plums, Mr. Dickens said that this is governed largely by the weather; some years, when there is excessive moisture at time of their ripening, they rot worse than the other plums which may ripen earlier, during a dry season, but in other years the conditions are reversed, and the Americana plums, ripening later will escape the rains which may cause the loss of the entire crop of early-ripening plums.

S. H. Marshall of Wisconsin spoke of the marketing of this class of plums. Twenty-four quart crate or 10-pound grape baskets are desirable packages to use.

Prof. S. B. Green of the Minnesota Agricultural College spoke of this class of plums in that state. Americana plums do well there, and he believes that in the Surprise plum Minnesota has produced the best plum for the North.

Mr. Wyman Elliott of Minnesota reported that Wyant, Hawkeye, De Soto, New Ulm and others do well in some seasons, but the great trouble is the foliage is subject to rust. Surprise, as stated by Prof. Green, leads them all. Ocheda is one of the best plums for quality.

E. W. Kirkpatrick of Texas reported that the Japanese plums and their hybrids are the plums for that section. Gonzales is one of the best of the hybrids; large and of good quality. America is another good one, very similar to Gonzales. Burbank, Abundance, and all of this type of plums do well in Texas.

T. V. Munson, also of Texas, said he had tried the Americana plums in Texas, and this type, strange as it may seem, winter-kills with him. This statement by Mr. Munson was rather startling, following the statements by the gentlemen from Minnesota to the effect that only the Americana plums are hardy there. Mr. Munson explained this condition, however, as follows:

"The Americana plums are brought from the North down into Texas; in their native country this type of plum naturally starts in spring at a very low temperature; a very little heat will start the sap. Down in our country we frequently have a warm spell in February, which will start Americana plums; they are then caught by a sudden freeze. This same degree of heat or weather conditions will not start the plums of other types, and they are safe. The best of the Americana type for Texas is called the Newton; this should not be confused with the Newtown or with the Newman, which are separate varieties. Miner is a good one, and does not winterkill."

Mr. Munson agreed with Mr. Kirkpatrick, in saying the best plums for Texas come from the Japanese. Some varieties, however, are subject to the "gum disease" and others bloom too early. Red June, Abundance, Burbank, Norman, Chabot, are the best varieties. Satsuma blossoms too early, but otherwise is satisfactory.

Of the Chickasaw type, Mrs. Clifford and Whitaker are good. Some of the Chickasaw plums have been frozen while very small, and still matured a crop. Of the hybrids, Apple and Climax are weak in tree and cannot be recommended. America is a very good plum; it is yellow until fully ripe, when it has a beautiful blush. Gold resembles America, but has not the blush, and is subject to rot, while America does not rot. Of the European varieties, all are failures; brown rot and the curculio get the entire crop.

Mr. Marshall of Wisconsin said that those growers who are troubled with curculio evidently have not sprayed and cultivated their trees. He has cultivated his trees thoroughly and sprayed with arsenites, and the curculio has not been destructive. Asked as to how he poisoned the curculio, Mr. Marshall said he did not know how it was done, but he did know that results had been satisfactory. He has used Disparene at rate of three pounds to 100 gallons of water and cultivated the trees until the middle of August, and has had success.

C. G. Patten, Charles City, Iowa, said he has been impressed with the fact that a very short distance makes a great difference in the behavior of trees. For instance, he is about 125 miles south of Mr. Elliott of Minnesota. This gentleman had recommended the Surprise plum most highly, but with Mr. Patten this variety has been a failure; the fruit cracks just at maturity. On the other hand, the Rockford does well with Mr. Patten and fails with Mr. Elliott.

"There are many excellent plums among the Americana type," said Mr. Patten, "and I have come to the point where such plums as Hawkeye, Wyant, Stoddard, etc., cannot be eaten with satisfaction any more, for we have many other varieties so much better. These other varieties are Americana seedlings, and in Northern Iowa great improvement will be made with these plums."

E. A. Riehl, Alton, Ill., said the America is one of the very best of plums, so far as beauty and productiveness are concerned, and it does well over a wide extent of territory.

Parker Earle of Roswell, N. M., said the European plums are very fine in the Pacific states and the irrigated sections of the semi-arid regions. They are of good quality, fine appearance, and sell at good prices.

W. S. Coburn, Hotchkiss, Color., said that on the eastern slope of the mountains of Colorado the native plums are largely grown, but on the western slope all kinds can be grown. Ogon, Satsuma, Botan and all the Japs do well. The Domestica plums also do well, and among them he recommended the Peach plum, of the Domestica type, which originated in California. The plum crop is not very profitable. Some plums are grown for canners, but when it comes to shipping the fruit, the growers neglect the plums for winter apples, for the plums have to be shipped in refrigerator cars, and the apples do not.

In closing the discussion of this subject, Chairman Watrous called attention to the variations owing to climate. He believes that Southern fruits can be brought north and acclimated in their new location far more readily than northern fruits can be taken south.

"Cover Crops" was the title of a paper which was sent by Prof. J. W. Lloyd of Illinois. This paper said that many of the orchards of Illinois are planted on soils deficient in nitrogen and humus. The best orchardists, under these conditions, believe in giving the orchard clean cultivation, followed by the planting of a cover crop. Cover crops for these orchards, should be some of the legumes. On hillsides, where many of the orchards are planted, he believes the orchard should be

To the Friends of The Fruit-Grower

Next month we shall mail notices to all those readers whose subscriptions are in arrears. If every subscriber will carefully inspect the date tag on wrapper in which The Fruit-Grower is mailed, the month to which you are paid up may be ascertained.

If your date tag reads January, 1906, or any previous date, you should send remittance at once, and thus take advantage of the present rate of 50 cents a year.

After Jan. 1, 1906, Renewals Will Not Be Accepted at less than $1.00 a Year

A prompt remittance will also save us the trouble and expense of sending out delinquent notices.

Ask your neighbor if he reads The Fruit-Grower, and if not, try to secure his subscription. For every new name sent us with remittance of 50 cents, we will send you one of the "Brother Jonathan" books and every fruit-grower should have the entire series.

Remember that between now and January 1st, 1906, you may pay ahead for from one to four years at 50 cents a year, but after that date the price will be $1.00.

We hope that every one of our friends will assist us in placing on our list every up-to-date fruit-grower in his neighborhood.

If you want extra copies of the September issue, they will be cheerfully sent free on request.

THE FRUIT-GROWER CO., ST. JOSEPH, MO.

planted in strips, part in clover and part cultivated. Some growers believe in keeping such an orchard in clover, and if this is done the clover should be mowed and allowed to lie on the ground, and the soil should also be stirred with the disc harrow. Vetch can be handled in this same way. Where the orchard is planted in strips the strip to be cultivated should be the width of two rows, then a strip of clover; these strips should be changed, of course, the cultivated strip being planted to clover, and the clovered strip being cultivated.

The black prairie soils are rich in nitrogen and humus, and therefore the leguminous cover crops are not needed. Better results can be had from oats or rye as a cover crop. Oats can be sown late in August or early in September, and rye can be sown even later. The latter crop, however, is sometimes hard to control in spring, for it may get too tall to turn under. Leguminous crops are not needed in peach and pear orchards as much as they are in apple orchards. Among the legumes which are grown for cover crops cow peas are the favorite in Southern Illinois. The objection to their use is that they must be planted before cultivation should cease. However, the orchard can be cultivated with harrow even after the cowpea plants have attained considerable height.

This was a very interesting paper, and The Fruit-Grower hopes to present it in full before the time for planting cover crops in the orchard next season.

Prof. O. M. Morris of Oklahoma Experiment Station read a paper on "Source of Trees for Orchard Planting," in which he told of his experience in handling trees from different nurseries. Mr. Morris found that trees which have been well grown and are well packed, even when they are shipped long distances to the planter, are by far preferable to trees which have been poorly packed and shipped only a few miles. More depends on the growing and the packing of the trees, in other words, than upon the location where they are grown. Mr. Morris, too, had found the larger nurseries gave more attention to the packing of stock than many of the smaller ones. His paper is presented in full elsewhere in this issue, for the benefit of Fruit-Grower readers who contemplate purchasing trees for planting this season.

Mr. J. A. Burton, Orleans, Ind., read an excellent paper on "Cultivation of Orchards in Southern Indiana," in which he gave his method of handling an orchard on good strong soil. Mr. Burton believes that the best method of handling an orchard will be a mean between the extremes of absolutely clean cultivation and no cultivation at all. He has one orchard which is cultivated several times early in the season, ceasing about the middle of June, after which the mower is run and grass allowed to lie where it falls. Where trees need fertilizing, he mulches with barnyard manure. We hope to present Mr. Burton's paper in full later, for it was full of practical points. As an evidence of his success, he showed some specimens of his apples, which were very fine. From 110 Grimes Golden trees he sold the fruit for $1,700, or more than $15 per tree. He does not believe his method of cultivation was entirely responsible for his success, but he believes it contributed very much.

Mr. Dunlap called attention to the fact that one will have to adopt a method which is adapted to his particular orchard, and it is hard for any hard and fast rules to be laid down.

Mr. Burton was asked if he sprayed his trees, and he said he did. He sprays once before blossoms open and twice afterward, using Bordeaux mixture and Paris green. The second spraying is done just as the blossoms are falling, and this application must be made very thoroughly. The trees are sprayed on one side, and then as soon as the direction of the wind will permit they are sprayed on the other; this is counted as only one spraying, and another application is made about ten days later.

"One way in which my method differs from that of most other persons," added Mr. Burton, "is in the operation of the pump. Most persons are satisfied with a large boy or man operating the pump, but I put two big men on the pump handle and keep them working hard, and in this way I get sufficient power to make the fine mist so necessary for effective work. It is useless to try to do a good job of spraying without great power, and one man cannot furnish this power very long at a time. Use two men and get high power, and better results will be obtained."

Mr. Burton was asked if he did not find that Grimes Golden is less sub-

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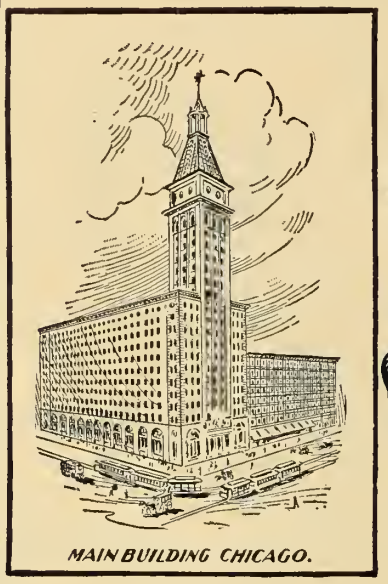

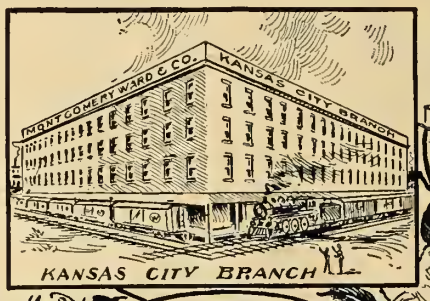

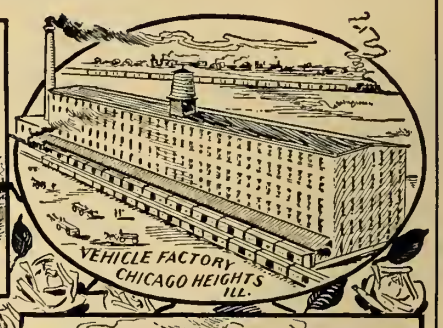

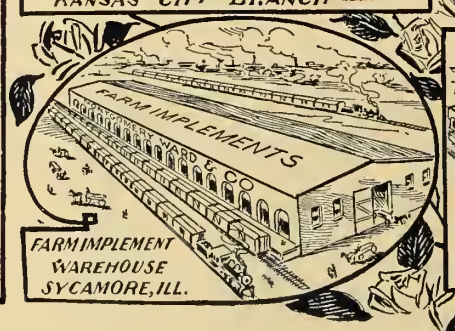

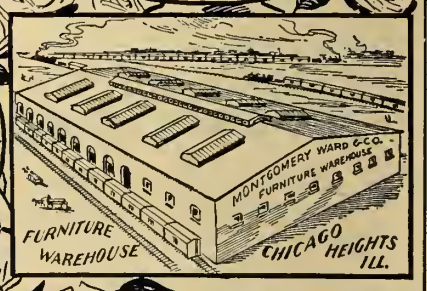

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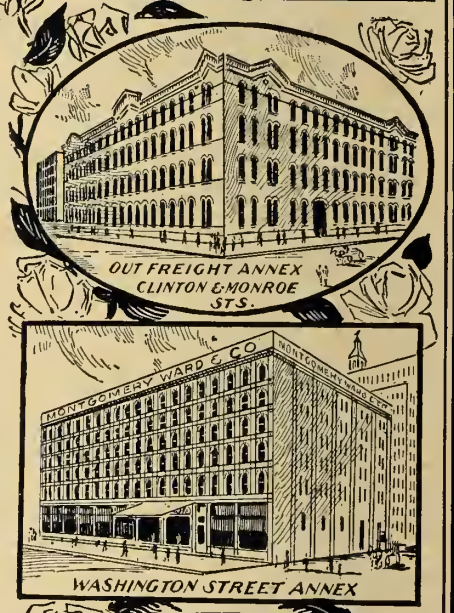

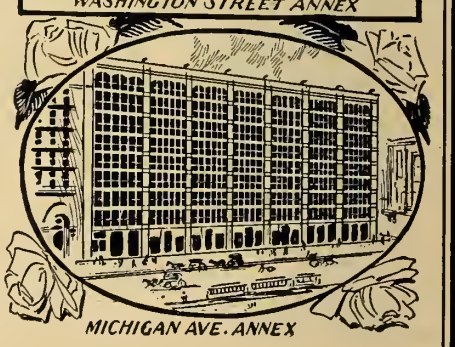

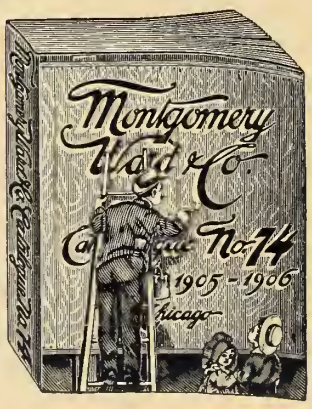

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ject to injury by codling moth than most other sorts, and replied that he believed Winesap and Grimes Golden are both less affected by this insect than Ben Davis and other winter apples. He uses a Vermorel nozzle in his spraying. It should be said here that the apples which Mr. Burton exhibited were as fine as were shown at the meeting, his Grimes Golden being better than those from any other orchards.

E. M. Pollard of Nebraska read a paper on "Spraying the Apple Orchard," giving his experience for several years. This paper will be published in its entirety before next spraying season opens. Mr. Pollard, among other things, reported his experiments with different strengths of Paris green, and gave it as his opinion that the formula usually recommended of four ounces of Paris green to forty gallons of water was not strong enough. He believes that a slightly stronger mixture is necessary for best results.

Mr. Coburn of Colorado said he would use as much lime as possible with the Paris green, to prevent injury to the foliage and fruit. In his section, where apple scab is unknown, Bordeaux mixture is not used, and he recommended adding as much lime to the Paris green solution as can be forced through the nozzle.

"But we have found Disparene much more effective than any other insecticide we have used. It costs more, but remains in suspension and sticks to the tree throughout the season. Colorado growers have found it much more effective. Swift's arsenate of lead is practically the same, but this has varied somewhat in results."

Prof. Beach said the most satisfactory formula for Bordeaux mixture four pounds of copper sulphate, four pounds of lime, and fifty gallons of water. Paris green can be added to this at rate of one pound to 150 gallons of the mixture, or even at rate of 100 gallons, but for stone fruits the mixture will have to be much weaker—about one pound to 300 gallons of water.

Mr. Dunlap of Illinois said he believes the growers are about ready to change their formula for making spray mixtures; he believes they have been using too much copper sulphate and too little Paris green. A mixture which has given good results is made of three pounds of copper sulphate, six pounds of good stone lime, six ounces of Paris green to fifty gallons of water.

"But after your mixture is properly made," added Mr. Dunlap, "it must be properly applied. Thorough application is absolutely necessary, and the time of application is important. When the first pink of the blossoms begins to show, make the first application; this should be completed, of course, before the blossoms open. When the petals have nearly all fallen, make the second application; the third application is not so important and can be made at any time, say about ten days after the second one is completed."

To show the correctness of this statement, Mr. Dunlap cited his experience in spraying nine rows of apple trees within six days after blossoming time; nine other rows were left unsprayed, on account of unfavorable conditions, until a week after the first nine rows were sprayed. At picking time the nine rows which were sprayed at the right time—just after the blossoms fell—yielded 175 barrels of No. 1 apples, and the nine rows which were sprayed later yielded 17 barrels of No. 2 apples. The only difference in the treatment was in the time of the spraying.

Mr. Parker Earle said that it had been demonstrated beyond question that arsenate of lead, or Disparene, is by far the best insecticide for chewing insects. It sticks to the foliage and will not injure leaves or fruit. "I really believe one thorough spraying would suffice," said Mr. Earle, "if it were not for the fact that when the first application is made the fruit is quite small, and of course will so increase in size that many unprotected spots will be left on the apples."

H. H. Whetzel of Cornell University said that those who had trouble in getting their spray mixtures to stick might use the following plan: Put two pounds of resin and one pound of sal soda in two quarts of water, and boil it until it is dark brown in color; this will require perhaps fifteen minutes hard boiling. Add this to a barrel of spray mixture, and the latter will stick to the trees in spite of heavy rains.

Prof. Craig said he believed the most effective spraying for apple scab and other fungi should be done before the buds open, when the bare twigs can be covered, but Prof. Emerson added that this early spraying was not productive of results in Nebraska, and Mr. Dunlap said the same is true in Illinois. The latter said the first spraying should be done when the pink of the blossoms begins to show, and spraying at this time had produced much better results than the application before the leaf buds started in spring.

C. H. Williamson, Quincy, Ill., said his experience had coincided with that of Prof. Craig, and that the early application had done good work. Before the leaf buds start is the only time when one can cover the whole tree, and he believes this is the most important time, so far as apple scab is concerned.

Mr. Williamson was chairman of the committee on grading and inspecting fruits, but reported that his committee had nothing definite to report. Mr. Williamson enjoys the distinction of having offered the resolution before the National Apple Shippers' Association defining what constitutes a No. 1 apple, but said he knew of but two contracts for apple crops which had given his specification as the standard. According to this definition, a No. 1 apple is normal in shape and color, free from injury by worms, and must not have skin broken by bruise or injured by fungous disease. Size differs, owing to varieties. Ben Davis, Baldwin and apples of that class should be not less than two and a half inches in diameter; Winesap, Fameuse and apples of that class should be not less than two and one-fourth inches in diameter.

"It is almost impossible to guarantee that a barrel of apples shall be absolutely free from insects," said Mr. Williamson, "and that is the reason why few contracts are drawn under these definitions. I would now change the definition by adding the word 'practically' before the word 'free,' so that it shall read that No. 1 apples shall be 'practically free' from insects, etc. A No. 2 apple has the same qualities as the No. 1, except that the apples can be smaller."

In answer to a question, Mr. Williamson admitted that the specifications he had recommended, and which had been adopted by the National Association of Apple Shippers, ready provide for a fancy and a No. 1 grade of fruit.

One of the most interesting papers of the meeting was that of Mr. W. S. Coburn of Colorado on "Top-Grafting Trees." Mr. Coburn said that when the first orchards were planted in Colorado no one knew what varieties would succeed, and the only way to find out was to plant all varieties. Time has shown that Winesap, Rome Beauty, Jonathan and Grimes Golden are the best apples for Colorado, and other varieties are being worked over to these. The three first named are used in Mr. Coburn's orchard.

"The old system of cleft-grafting was slow," said Mr. Coburn, "and when we came to top-graft our trees

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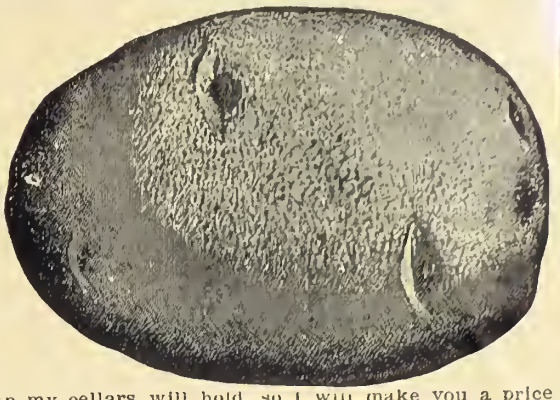

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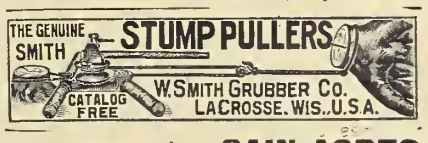

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by clearing that stumpy piece of land THE HERCULES Stump Puller pulls any stump. Saves time, labor and money.
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we did not like the idea of joining the smooth cut of the scion to the rough surface of the crevice made by splitting with a chisel. We have top-grafted 2,000 apple trees, and this is the plan we use:

"Limbs to be top-grafted are sawed off; some limbs have been sawed off which were six inches in diameter. Then with a small saw we saw in one side of the stub where the scion is to be inserted. This opening is made lengthwise of the stub, of course, and the opening is wider at the end of the stub than farther down, for it runs out down on the stub, as would have to be the case in sawing up and down the stub. This opening is smoothed out with a harness-makers' knife, in the shape of a crescent, and we are ready to insert the scion.

"The scion is cut down to three buds, and shaped to fit the opening which has been made. The kerf made by the saw grows shallower lower down on the stub, and one side of the wedge of the scion will have to be cut off to allow the bark of the scion to meet the bark of the stub. If one has properly shaped the scion, the rest is very simple. Cut the top end of the scion square, and with a mallet or something of that kind drive it into the opening in the stub. After one has made one or two grafts the scions can be cut so that they will exactly fit the opening, and when they are driven in they cannot be pulled out by the operator. The whole is waxed over just as would be the case by any other method. Not one graft in a thousand need be lost by this process."

Asked as to when was the best time for top-grafting, Mr. Coburn said the work should be started when buds begin to swell, and can be continued for a period of six weeks.

Mr. W. F. Heikes of Tennessee said that in forming a new top on a tree he would cut the limbs back, to force out a new growth. This new growth is then budded with the desired variety, and as soon as the bud has set the original stock is cut off above the bud, and the bud will start to grow at once. Handled in this way, the buds will surely grow, whereas if they are not forced into growth the same season they are applied they are apt to be blown out the following season. But where they get a start the year before they will be all right.

One of the best things of the entire meeting was the address by Mr. T. V. Munson, Denison, Texas, outlining his plan of making a trellis for grape vines, together with his system of pruning the vines. The Fruit-Grower hopes to present this paper in full before time for planting grape vines. In short, his system is to use a three-wire trellis; one wire is strung from the top of posts which are four feet high, and to this the canes are tied. At the top of the posts a cross-arm is fastened, this arm being two feet long; from each end of these arms another wire is strung, these wires being four inches higher than the center wire, and of course they are a foot to the right and to the left of center wire. The vine is trained straight up until it reaches the middle wire; no shoots are allowed to form between the ground and this wire. The vine is tied to this wire and two arms, or canes, are formed, one being trained along this center wire in each direction. These canes form the foundation for the first crop.

The first year these canes are cut back to about three buds each; as the new shoots put out they will naturally droop over the side wires, and the tendrils will fasten themselves to these wires; as soon as the grapes have set, the shoots are pinched off about three buds beyond the last bunch of fruit. During the second season the grower must work to get two new shoots to put out as near as possible to the original trunk; these form the bearing wood for the next crop. As soon as these shoots have been secured, all others are kept off, and these are induced to make as strong a growth as possible.

At pruning time the canes which bore this year's crop are cut away, leaving the two new canes for the next crop. These are left with more bearing wood the next year, and as the vine becomes stronger two other canes can be left, making four arms to produce the fruit crop, but Mr. Munson believes no more than four canes should be left.

The advantage of this system, as explained by the speaker, are that the grapes are borne high from the ground, with foliage above to protect from the sun; there is no growth next to the ground to interfere with circulation of air, so there is less danger from rot; the width of the growth of vines is horizontal, rather than perpendicular, as in the case of the old-fashioned trellis, thus offering less resistance to the wind, and the vines will never blow down; the fruit is suspended from the side wires, where it can be sprayed very easily; and it is also accessible at picking time.

Perhaps the greatest advantage is that the labor of tying up the vines is reduced to the minimum; only one tie is made for each of the bearing canes left at pruning time. These canes are stretched along the middle wire, as stated, and are carried around the wire so that only one tie is made at the end of each cane. No tying is necessary for the side wires; they are simply to support the bearing shoots, and the tendrils from the new growth will hold them very tight. Still another advantage of this method of training and this form of trellis is found in cold climates, where it is necessary to lay vines down in winter. Under this system, the old wood is all cut away, except the upright trunk, and the canes to be left are shortened in. It is an easy matter, therefore, with no low wires to interfere, to lay this trunk down and cover with earth.

Mr. Munson showed a model of his trellis, which showed exactly how the work is done. In the article which we hope to present later the details of the trellis will be given, and it will certainly be interesting to everyone who grows grapes.

"Breeding Hardy Strawberries and Raspberries for the North" was the title of a very interesting address by Prof. N. E. Hansen of the South Dakota Experiment Station. Prof. Hansen has done much work along this and other similar lines, and deserves great credit for it. He said the native strawberry of the North is the most promising for this line of work. Seedlings are being grown, and these must stand a temperature of 40 degrees below zero, without mulching, else they are rejected. In this work, Prof. Hansen says, he is trying to secure good hardy strawberries for the average farmer, and therefore they must measure up to the requirement given as to hardiness.

At present he has 6,000 raspberry seedlings, 2,000 of which fruited this year, and among the lot are some promising ones. The standard varieties of raspberries, as grown over the greater portion of the United States, are not hardy in South Dakota, and have to be laid down during winter and covered. But this will not do, for the average farmer will not take this trouble, and raspberries which are developed for their use must be hardy without covering.

Prof. J. T. Stinson, superintendent of pomology at the St. Louis exposition, and Prof. L. R. Taft, chief juror of this division at the same exposition, spoke of the lessons learned at that time. Chief among these, said Prof. Stinson, was the experience gained from the storing of fruits.

Prof. Taft said that after what had been seen at St. Louis one should favor the flat installation of exhibits; the fruit shown on flat tables presented much the best appearance. Processed fruits and the high facades are all right around the sides perhaps, but the flat surface is decidedly the best. Use wide tables—five feet is none too wide—and keep the exhibits level, and show them all in one place. Some of the exhibits at St. Louis were so scattered and so cut up that they presented anything but a pleasing appearance.

C. E. Bassett of Michigan gave an excellent talk on "Marketing Fruits," in which he said that American growers must pack their fruits more carefully than is the general rule at present, or they must get out of the business. California fruits are always well packed, and they sell everywhere. Canadian laws require that fruit for export shall be carefully packed and honestly marked as to grade, etc., and Canadian apples will drive the fruit from this side of the line out of all European markets, unless our growers adopt similar methods.

George C. Richardson, delegate from the National Apple Shippers' Association, talked along the same

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FARM 435 acres; 6 miles from Mexico, ¾ mile of railroad station, 2 houses and barns. Well watered and one of the best stock and grain farms in this part of the state.

FARM 160 acres; 3 miles south of Sarcoxie in Newton county. This farm is all in apples, 2-3 Ben Davis and 1-3 Missouri Pippin; trees 14 years old. This is said to be the best orchard in Missouri. The land lays well and situated in the great mineral belt of the state. Good house, well, barn and other improvements.

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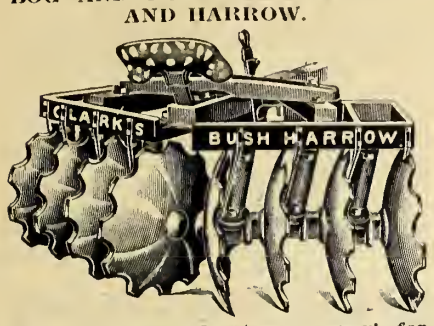

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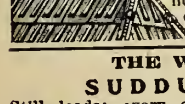

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line. Later a suggestion was made that a national law be urged, providing that fruit for export can be inspected and its grade and quality certified, provided the grower desires this to be done.

Prof. Beach, chairman of the general fruit committee, submitted a brief epitome of the reports which have been sent to him, and these will be published in full in the biennial report of the society.

"Notes on New Fruits" was the title of a paper by Col. G. B. Brackett, chief of the division of pomology, Washington, D. C. Mr. Brackett called attention to the great field of breeding new fruits, but said that few of our choice fruits have been produced by breeding; most of them came by chance. Much work must be done, however, and should be done. Among the newer varieties which have been received by the Department of Agriculture, Col. Brackett recommended the following:

Delicious apple—This apple is sent out by Stark Bros., who, Colonel Brackett said, have done a good work in looking up new fruits of merit and disseminating them. Delicious is an Iowa apple, the original tree coming up as a sprout from an old Bellflower tree. At fifteen years of age the original tree was thirteen inches in diameter at the base, and very strong, thrifty and hardy. The fruit is large, of good color, and the variety is correctly named, for the quality is all that the name implies—Delicious.

Evaline apple—This was produced by H. M. Lyman of Minnesota, and is a seedling of Wealthy.

Bedford Spice apple—An old sort, but little known. Comes from Somerset, Pa., and is a good one.

Kent peach—This comes from the Berckmans, Augusta, Ga., and is a most excellent peach.

Graves peach—From W. J. Graves, Perry, Ohio; a hardy peach, which bears early and is very productive.

Krinkle plum No. 4—This is a seedling of Burbank, originated by J. W. Krinkle, Madison, Ind.

Colonel Brackett also referred to a seedling grape of the Labrusca type, which was sent by Mr. Pratt of the T. S. Hubbard Co., Fredonia, N. Y. Berries are small, with dark skin; rich and vinous and of good quality, and entirely seedless. This may be a seedling of Worden, as it was found in a Worden row. Colonel Brackett said that, so far as he knew, this is the only true Labrusca grape which is entirely seedless.

Mr. Munson said he had a seedless grape, Golden Seedless, which is part Labrusca; it is a white grape of good quality.

Mr. Parker Earle, one of the old members, presented a paper on "Outlook for Apple and Pear Growing in New Mexico," and Captain C. L. Watrous of Iowa read an excellent paper giving some observations from his recent trip to China and Japan. These papers will be published in full in The Fruit-Grower.

A very interesting session was that of Wednesday evening, at which representatives of various states submitted papers on the subject "Fruit Growing Historically Considered in Some of the States West of the Missouri River." L. A. Goodman presided, and the representatives of the various states reported what is being done in each of them.

The last evening of the session H. H. Whetzel of Cornell University delivered an illustrated lecture on "New Light on Apple Blight," which The Fruit-Grower hopes to present, with illustrations, later.

Thursday evening the meeting adjourned and about forty persons accepted the invitation of the Kansas City Southern and Frisco railways for a complimentary trip over these lines into some of the fruit sections of Arkansas and Southern Missouri. Leaving Kansas City Thursday night, the party went on the Kansas City Southern as far south as Horatio and DeQueen, Ark., making stops at a number of places en route. Sunday was spent at Fort Smith, and then the Frisco took the party over its lines, visiting some of the orchards in Oregon, Howell and other counties in Missouri. The schedule called for the party to return to Kansas City the morning of Wednesday, making a trip lasting almost a week.

Notes of the Convention.

G. S. Christy and G. A. Marshall had charge of the exhibit of the Nebraska State Horticultural Society. This society deserves credit for the effort to have a good exhibit. Summer apples, such as Duchess, Red Astrachan, Summer Pearmain, Benoni, Sops of Wine, etc., had been kept in storage, to help make the exhibit complete.

The exhibit of European varieties of grapes by Fabin Garcia of New Mexico was the only exhibit of this fruit. And they were extra fine, including a number of varieties.

The committee which awarded the Wilder medals especially commended the exhibit of Black Ben and Delicious apples shown by Stark Bros. The apples were from Washington and were extra fine; every apple was perfect, and all were of very large size, although none were as well colored as they are at picking time. Apples in the Northwest are not picked as early as they are in the Middle West. This exhibit was awarded a bronze medal.

The Kansas City meeting was the first which Parker Earle has attended for a number of years, and everyone was glad to see him looking so well.

Black Ben apples of the crop of 1904 were shown on the same table with the fruit of this season's crop. The Missouri State Horticultural Society also had apples of last year's crop on the tables.

Prof. A. T. Erwin of the Iowa Agricultural College says the Delicious apple is one of the best fruits which has been produced in Iowa. The original tree had borne most excellent apples before Stark Bros. took hold of the variety, and since trees have been sent out many top-grafted trees have bone. And from every quarter come the most flattering reports. The quality makes the apples a very fine dessert fruit, and at the same time the trees are hardy and productive.

Mr. E. H. Riehl, Alton, Ill., had samples of two of his seedling grapes on exhibition. Mr. Riehl has been working for years with new grapes, and has some seedlings which, after several years' test, have been deemed worthy of propagation. They will be sent out later.

The United States Department of Agriculture had some of the newer tropical fruits on exhibition, such as limes, bananas, etc.

A trolley ride over the city was given the visitors Wednesday afternoon, and on this trip opportunity was given to see some of the landscape work which is being done in Kansas City parks and boulevards. No city in the West is doing so much in this line, and visitors were surprised and gratified at the showing made.

One of the Kansas City daily papers reported that the meeting had condemned the Ben Davis apple, and the Westerners wanted a certificate of character to be given to Uncle Ben. But it was ruled out of order, Chairman Watrous stating that the society could not be held responsible for what the daily papers had said.

Cleveland a Banner Apple Market.

Cleveland, Ohio, is certainly proving one of the best apple markets in the country this season. The native crop in that part of Ohio is very light and the quality of the fruit not of the best. Early fall apples are in good demand, and nicely colored, well packed apples find a ready market. Extra fancy high colored apples $3.50@4.00, fancy $3.00@3.50, common to choice $2.00@2.50. The outlook is very favorable for a good trade in winter apples, especially for fancy Jonathans, Winesape, Rome Beauties, Huntsman's Favorite and Missouri Pippins. Myers, Weil & Deutsch, Generali Commission Merchants, Cleveland, Ohio, are among the best firms in the apple trade in the country and they would be glad to hear from fruit growers and shippers who will have either fall or winter apples to market. We can recommend this firm to readers of this paper as being thoroughly up-to-date, reliable, and in every way worthy of implicit confidence. Write or wire this firm when you want any information concerning Cleveland market.

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We have for Fall and Spring an extra fine lot of young, healthy plants, true to name; other plants and trees. Send for Free Catalogue.

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names and addresses interested in Fruit-Growing. Our book, Success and Failure in Orchard Growing, by a Practical Orchardist, sent free to anyone sending same.

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should write for illustrations and descriptions of the largest line of WRISTLETS, FINGER PEGS, THUMB, CENTER and WRIST HOOKS, single or double, which are invented by an EXPERT HUSKER and also the kind which made Chas. A. Rennack famous by husking over 200 bus. in 10 hours.

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MODERN CANNER Machinery complete for the farm, $10, $25, $50, $75 and upwards. Men or women can make money canning for others. They will pay big prices for your canned fruits and vegetables. Begin this season. Booklet free. Mail card today. **Modern Canner Co., Bridgeport, Ala**

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Wanted---A Single Man

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WESTERN EDITION

THE FRUIT-GROWER

ST. JOSEPH. MISSOURI

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W. G. Campbell, Jr., General Manager James M. Irvine, Managing Editor

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Vol. 16. OCTOBER, 1905. No. 10

At the late Missouri State Fair the fruit exhibit was larger by far than it has ever been before, and it gave an indication of what it will be when the state has a full crop. Missouri has not had a good fruit crop since the State Fair was established at Sedalia, and therefore this feature has never been what it should be. Each year the display has been better than it was the year before, but the possibilities along this line have never been developed. It takes time to arouse an interest among fruit-growers in the state fair, but the institution is worthy their earnest support. The fair is clean and up-to-date, and the fruit interests of the state should be well represented. Iowa's state fair is much older than the Missouri fair, and the horticulturists of that state have developed a wonderful interest in the fruit exhibits. A meeting of the Iowa State Horticultural Society is held on the fair grounds each year, so that the members can get together and profit by the fruit exhibit. This feature has been very profitable to the members. It has been suggested by some members of the Missouri Society that the summer meetings be abandoned, as they are held in June—a very busy time for most of the members, and therefore the attendance is never large. Instead of abandoning the summer meeting, however, why not hold a brief meeting every year in connection with State Fair? This plan would certainly have the effect of interesting the members in the success of the fair, and both the fair and the society would be benefited. Then, too, many persons could be reached at the fair who are not accustomed to attend the meetings of the society, and the membership might be largely increased. This plan is worth considering, at any rate.

One of the members of The Fruit-Grower Family thinks that our editor saw none of the disadvantages of the Northwestern country, for none were mentioned in the articles in September number. We were impressed with some of the shortcomings, however, for the Northwest is not a paradise, by any means. The man who goes there to grow fruit deceives himself if he thinks he will have a royal road to success out there, for he will have to work hard to be successful. Another drawback we noticed in some of the towns is the number of saloons. Billings, Mont., for instance, a town of about 7,000 people, has thirty saloons, and it is said a gambling house is connected with nearly every one of them. Think of a town with more than four saloons for every 1,000 of population. In many of the towns the saloons are not only very numerous, but they operate on Sunday just the same as on every other day. This is one of the things which our Northwestern people have to contend with—and thirty saloons in a town of 7,000 people is a very serious objection to any place, from the standpoint of one who wants to make his home there, especially if one has a family to raise. Not all the towns are so well supplied with saloons as Billings, nor do the saloons operate on Sunday at all places. We were at Boise, Idaho, on Sunday, and the saloons were closed tight on that day, and other places doubtless enforce the law in the same way. But the fact remains that there are too many saloons in some of the towns to attract the best settlers from other parts of the counry.

It begins to look now as though the railroad companies are whipped in their fight over the contracts with the private refrigerator car lines. Many of the roads are building their own refrigerator cars, and others will do so. Not only has this been announced, but in many places the icing charges of the Armour lines have been greatly reduced. This result has been accomplished through all the people working together. Let no person or no organization, however, relax the fight for a moment, lest the Armour Company and the railroads "get together" again, and the evil will be as great as it has been in the past.

Treasurer Charles E. Richardson of the Massachusetts Horticultural Society will act as custodian of a fund to be raised for the purpose of erecting a monument to Ephraim Bull, who discovered the original Concord grape vine. The Boston Transcript calls attnetion to the value of this grape, and says the original vine is still growing in the town of Concord, near Boston. Certainly no grape has been of such value to the American people, and the monument should be erected. Two years ago the editor of The Fruit-Grower spent a day at Concord and Lexington, Mass,, and among other places visited the old Sleepy Hollow Cemetery. Here are buried Thoreau, Emerson, the Alcotts and other noted persons, but it was gratifying to notice that the path which led to the grave of Ephraim Bull is as well worn as is that leading to the graves of any of the literary men. Through the years the grave has been visited by thousands, until one can easily find the grave by following one of the well-worn paths.

If The Fruit-Grower were to give any one condition which is responsible for the success of fruit-growers in the Northwest, more than perhaps anything else, it would be that the growers there do not have any kind of crop which interferes with their horticultural work. How many times has it happened that our orchardists have failed, simply because their other work prevented their doing the proper work in their orchards at the right time. It may be that just when the trees need spraying, the corn crop needs attention—and as a result the corn crop is cared for and the spraying is delayed until too late. It may be that the hay is ready to cut just when all one's time should be given to the orchard; the hay crop cannot wait, but one can take chances with the orchard—and the result is inevitable. The growers in the Northwest make apple-growing, or peach-growing, or berry-growing, as the case may be, their chief business, and other crops are neglected if there is conflict between them. Would it not be better for our growers to adopt the same plan? If one grows corn or hay or wheat or any other crop which may interfere with one's giving the orchard proper attention, then see to it that enough help is available to attend to all the crops as they need attention. And if enough outfits are not available to spray the orchard when the time is right for spraying, cut down the size of the orchard until it is not beyond one's capacity. If one cannot give an orchard the attention it needs, and at the time when it needs it, don't complain at the failure of the crop. Apples do well in the Northwest, as we found last month, but we do not remember to have seen any country where this fruit will produce profitable crop, if the orchards do not receive better attention than the average orchards throughout the Middle West. Our growers should learn from their Northwestern brethren not to have a larger orchard than they can give good care—and at the time when it needs it.

For several months the various magazines have contained advertisements of different schools and colleges throughout the country. The managers of these schools realized that if their respective institutions were to secure their share of the pupils who will go away to school this year, they must advertise to reach them. This plan is not an experiment—it has proven to be profitable. But has anyone seen the advertisement of any of the state agricultural colleges in any of the farm papers? We believe we saw one college advertised, but only one. Of course the farm papers are willing to help advertise these schools, but would it not be well for the institutions to do some advertising on their own account? Is there not danger that the other colleges are securing, through their advertising, many of the boys and girls from the farms, who should go to the agricultural colleges? It seems to us that the number of pupils in the agricultural colleges could be greatly increased by the judicious use of the best farm papers.

One of the strongest tributes we have seen to the healthful life of country folks was that recently paid by the advertising manager of a certain preparation of cod liver oil, which is used by persons affected with lung diseases. This advertising man said that he studied the sections of country and the character of the people in deciding the list of papers in which to advertise. He unconsciously, perhaps, pays a tribute to the healthful farm life when he says:

"Take for example a prosperous agricultural community where the men are engaged in healthful outdoor labor and the women and children remain at home, well cared for and well fed. You can see that a paper published in such a town cannot be as valuable to us as a paper of equal circulation published in a town where the men, and women too, pass the day cooped up in a factory. The people who need Scott's Emulsion most are those whose bodies need building up, people whose duties seldom permit them to enjoy fresh air and sunshine—the nervous, dyspeptic man, the pale-faced delicate woman and their children. The man who is hale and hearty isn't going to buy Scott's Emulsion—not for himself at any rate—and we don't want him to."

It may be added here that it is said that the business men of the great cities have to get their new blood from the farms occasionally, as several generations of city folks are apt to lower the standard of vitality. Think over these things when contemplating leaving the farm.

Mr. Orlando Harrison, of the firm of J. G. Harrison & Sons, Berlin, Md., is a candidate for the legislature of Maryland from his county. Mr. Harrison has been mayor of Berlin for three terms, and has acquitted himself with credit, so that he will likely be elected. He is a good man and will look after the interests of the horticulturists of his state if elected. As a nurseryman, Mr. Harrison is of course an expert "grafter," but it is safe to say he will not be found with the grafters who are all too common in our state legislatures.

Prices for apples are ruling high. The Northwestern crop has been contracted for at prices from $1.50 to $2.50 per box; this for fancy fruit, of course. In the Missouri Valley Jonathans have been bringing $3.50 per barrel for good fruit, the grower to pack and deliver at station. New York apples have sold at from $2 to $3 per barrel. These are high prices for fruit, and if the buyers come out ahead of the deal, it means that the consumers will have to pay very fancy prices for their fruit. When fruit goes to abnormal prices, the market is bound to be limited, for few persons can afford to pay at the rate of $4 to $5 a box for apples. Consumption will decrease in the same ratio that the price for the fruit increases.

Protect Trees

Worth planting, worth saving. Add ½c to the cost of your young trees and prevent sun scalding and blistering and keep off rabbits, mice and all kinds of tree gnawers, with the

HAWKEYE Tree Protector

An elm veneer, easily put on and big enough to protect as long as protection is needed.

PRICES:
100 Wrappers - $0.60
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For circulars giving full particulars address
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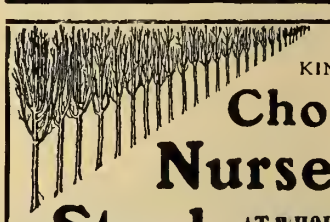

ALL KINDS OF **Choice Nursery Stock** AT WHOLESALE

Send us a list of your wants and we will make you our lowest prices—*we can save you money.*
WRITE US TO-DAY AND BE CONVINCED.
AGENTS WANTED EVERYWHERE.
Hart Pioneer Nurseries
Fort Scott, Kansas, Box I

Revolution in Berries

A strawberry that is firm; one that kept ten days on exhibition at the St. Louis Fair, and that got first prize; one that is large, sweet, perfect in blossom, vigorous in growth, and that bears through the seasons of early, medium and late, and is full all the time, ought to be in your field, and when you know it it will be there. Plants set by us last December bore a fine crop last spring. Circular free.
W. A. MASON, CLINTON, KY.

BULBS - BULBS - BULBS

On account of my failing health, I will dispose of my entire stock of Gladioli Bulbs, which is all composed of the finest varieties; some grown under color, others all mixed together. Correspondence solicited.
ISAIAH LOWER, Barberton, O.
R. F. D. No. 33.

Austin's Dewberry

J. W. AUSTIN, Pilot Point, Texas

Original propagator and introducer. Headquarters for plants. Descriptive circular and treatise on dewberry culture, for your address on a postal card, if you please.

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BOOK FREE How to put them up—what they cost—why they save you money—all information and valuable book free. Write to **J. ANDRAE & SONS,**
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SILVER MEDAL **PEONIES**

On our collection of Peonies at the World's Fair. Peonies, 75 varieties; price list now
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Berkshires W. H. Coffman, Bluefield, W. Va., is offering and producing magnificent Imported and Domestic strains of big, long, wide, deep, thick-set Berkshire Hogs, on short legs. Send for illustrated catalogue.

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KNIFE SHARPENER
EVERY HOUSEKEEPER NEEDS IT

A kitchen necessity; keeps knife in perfect shape—always sharp. Fitted with Keen Kutter emery stones. Satisfaction or money refunded. Agents wanted everywhere Postpaid 25c. Send today
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The Family Circle

Many readers of The Fruit-Grower have written that they enjoyed the September issue more than any other number for a long time. They were glad to know some of the methods of Western horticulturists. But one subscriber down in Arkansas sends instructions to stop his paper, for he says the September number contains articles "about the orchards and country of the extreme West, and not a thing that is of any benefit to the fruit-grower."

We don't blame this man, however, for stopping his paper, for if an account of some of the methods of the successful growers in other parts of the country cannot be of any help to him, he is justified in his course. It is not the fault of The Fruit-Grower, but of the man. He is simply beyond help.

We forget about such letters as the foregoing, when we receive one like this, which comse from Geo. L. Price, Houston, Texas:

"In your editorial column for September you speak of the assistance you have rendered your readers who are engaged in fruit raising. I have been a subscriber of The Fruit-Grower for many years, and cannot recall one issue where the information gained has not been worth many times its cost to me. My manager at Montrose, Colo., where I have an eighty-acre fruit farm, is also a subscriber, and fully agrees with me. I have owned the place ten years, and have improved it with the intention of making it my home. It is now on a good paying basis, and is regarded as one of the finest orchards in the Uncompahgre Valley. I have managed it from 1,500 miles away, with only occasional visits, and should a representative of The Fruit-Grower again visit it, I can show him where, in very many instances, ideas carried out from your suggestions deserve credit for its present condition.

"My subscription is paid some time in advance, and so long as you keep up your present high standard, I will be a subscriber, whether the price is $1 or $5 a year."

Now, the writer of one of these letters from which we quote can be helped by the experience of others; the other cannot. Which, do you think, is successful?

Mr. Price's letter reminds us again that on January 1 the subscription rate of The Fruit-Grower will be advanced to $1 a year. Until that time renewals will be accepted at 50 cents a year, and subscribers have the privilege of paying for four years in advance at this rate—but not longer than four years.

Not one of our readers, we believe, will deny that The Fruit-Grower, as it has been conducted during the past year, is worth $1 a year. Any person who grows fruit can receive information worth many times this sum during the course of a year.

Some persons have doubtless said they would not renew, for their orchards have not been profitable during the last few years. And it is true that many of them have not. But there have been other periods of poor crops, followed by profitable crops of apples for years in succession. It is a long lane that has no turning, and conservative men believe that the apple growers in the Middle West have reached the turn of the road. Not for many years have the apple trees been in as good condition as they are now; the foliage on the trees has been good all through the summer, with little evidence of disease, and the trees are holding their foliage to the last.

No, don't give up your orchard. On the contrary, care for it as best you can, take advantage of all the help you can get, and you will succeed, if your varieties are right and your orchard is on good fruit land.

All lines of business have their ups and downs, and it is believed the orchard business has come to the turning point in the Middle West.

During the next year The Fruit-Grower will be improved in many ways. It is worth $1 a year now, but it will be worth more then. But if any of our readers do not feel willing to pay $1 a year for the paper, they have the privilege of renewing now for four years at 50 cents a year. They will then have the matter off their hands for four years, and can see if the paper is not made worth $1 a year.

Renew today—and if possible send a new subscription with your renewal. Don't wait until after January 1, 1906, and then ask us to accept your renewal at 50 cents a year—for we cannot do it.

"Brother Jonathan."

Mr. W. H. Mikesell, Doniphan, Mo., one of the members of The Fruit-Grower family, sends the following poem, which he says is "respectfully dedicated to 'Brother Jonathan' ":

When we want an apple good to eat,
Something juicy, rich and sweet,
We are always glad to meet
Brother Jonathan.

When we want an apple pie,
A delight to palate as well as to eye,
To whom do we invariably apply?
Brother Jonathan.

When we want an apple tart,
After the desire of our own heart,
Whom do we seek in the crowded mart?
Brother Jonathan.

When late frosts freeze and blight,
And pesky bugs sting and bite,
Who is it comes smiling through the fight?
Brother Jonathan.

When the market goes a-crash,
And our purse has gone to smash,
To whom do we turn for ready cash?
Brother Jonathan.

When we are sore in need
Of something good to read,
Who's the true exponent of our creed?
Brother Jonathan.

Speaking of Brother Jonathan, we have a letter from a lady living at Ambler, Va., who writes as follows:

"Can you send to Mrs. H. C. Hart the address of nurserymen who have good young trees of an apple called in the Eastern markets 'Brother Jonathan'? It is rather late, handsome and delicious."

The only "Brother Jonathan" we know anything about is the smiling gentleman whose features adorn The Fruit-Grower every month. Nor do we know of any trees of this variety for sale. "Brother Jonathan" is an ever-bearing apple, fruiting every month in the year, in winter the same as summer. In fact, the crop is a little larger, and the smile of the gentleman a little broader, in winter than in summer. This apple is not subject to blight, apple scab, woolly aphis, San Jose scale, nor is it easily affected by frosts or freezes. It does not keep well in cold storage—but it is not necessary to store it, for, as stated, a new crop is borne every month. We think "Brother Jonathan" is all right, and some of our subscribers have been kind enough to say the same thing.

We wrote the Virginia lady, and told her about the Jonathan apple, and explained to her the trade-mark of The Fruit-Grower, and added that if she had the name from our trademark we did not want her to believe we had either tried to rename the old Jonathan or to establish a new variety.

Compressed Air Sprayers.

Answering S. C. C., Kidder, Mo., I will say I have not used both compressed and hand sprayers myself, but a neighbor of mine has. He bought several different hand pumps to spray potatoes and found them worthless. At last he bought a pump made by the Rochester Spray Pump Co., Rochester, N. Y. This was a compressed air sprayer, and since that time I have heard no complaint from him. It works finely, if only the liquid is properly strained and one is mechanic enough to be able to oil the leather valve or do such simple work when necessary.

Ipswich, Mass. A. F. T.

Wide Range of Circulation.

J. W. Austin, Pilot Point, Texas, advertises dewberry plants in The Fruit-Grower, and writes us that recently he received two requests for catalogue in one day. One request was from British Columbia and the other was from E. H. Greeley, Old Umtali, Rhodesia, South Africa. Mr. Austin thinks this is a pretty wide territory—but The Fruit-Grower reaches even more remote points than these.

The Bridgeport Nurseries, Bridgeport, Indiana.

The Plainfield division of Interurban lines runs due west from Indianapolis through a splendid farming country dotted here and there with contented homes. Scarcely twenty minutes ride brings you almost to the door of the office of the Bridgeport Nurseries, Albertson and Hobbs, proprietors. The large packing cellar is seen in relief from the car only a short waif from the office, which is a cosy little building peculiarly suggestive of the business, as it is surrounded with choice flowers and shrubs. It is purely a country scene, yet inside of the office is the click of the busy typewriter answering the immense correspondence of a very busy firm, a scene as metropolitan as though found on the floor of our modern office buildings in the heart of the splendid capital city of which Indiana is so justly proud.

To be able to claim the "oldest, largest and most popular nursery of Indiana" as they do in the literature that they send out, means years devoted to this industry and we were not surprised when told that for over twenty-seven years this business had been conducted at this same place. With over five hundred acres devoted to the growth of their stock, not a foot of it but shows the painstaking care of the expert. Two million trees now comprise the stock of fruit trees in the nursery.

Mr. C. M. Hobbs ranks as one of the leading horticulturists of the United States, while if you chat with Mr. Albertson you will soon detect that he also is a man thoroughly informed in his business and of that business tact that makes success of any undertaking. Not only do they own and control this immense nursery here, but the firm have extensive holdings in western New York and in Kansas, enabling them to take care of the trade from any section of the country and to ship stock acclimated which often makes success to the purchaser buying from a distance.

We are pleased to show our readers one of their immense packing cellars, which cover in all over half an acre. You will note the cars as they stand ready to be loaded at the door. When you are told that this is a daily occurrence you will at once become interested and when inspecting the many fields with their plats of trees every one showing a thrifty growth and then note that they are going out in carload lots, one begins to grasp the great business that is carried on here. These packing cellars are all so constructed that no matter what the weather is outside, all stock is protected from heat or frost in a manner that shipments can be made at any time without delay or danger to the stock.

This is an item in the protection of the vitality of the tree, for there is not a question but good stock is often impaired in its value in the carelessness of the one who sends it out. Besides their extensive interests in fruit trees, they are now paying considerable attention to flowering shrubs and ornamental trees.

This is one of the progressive nurseries conducted by a progressive firm. Their literature will tell the reader more of their stock, the purpose of this article being to give our readers a pen picture of one of those places that is contributing to the great horticultural growth of this country, the making of the home more attractive, the orchard more profitable, by the contributing of the kind of stock that promotes the better growth in their localities.

E. S. C.

New York Fruits.

A trip across the state of New York shows a decidedly poor crop of apples. From what this journey showed me, and from all I can gain from those with whom I talked, I do not believe there is more than a quarter of a crop. And what we have is not of as good quality as we have had in years gone by. Of late much has been dropping. This makes the prospect still more uncertain.

The cause of this comparative failure may be due to a series of severe frosts which came just when the trees were in bloom. In some sections there was a fog along the larger streams which saved part of the fruit. This was the case along the valley of the Susquehanna River, so that some of the finest fruit of Southern Central New York is to be found in that section. On the highest elevations also the frost did not do quite as much damage, and there we find a fair amount of fruit; but all between these extremes of elevation, and along the smaller valleys the destruction was widespread. There will not be anywhere near enough fruit to supply the local market, saying nothing about sending any abroad. In the western part of the state and around Rochester and Syracuse, which are considered the real apple growing parts of the state, the crop is thought to be about one-half of the average.

Grapes are yielding up rather better, the fruit being of a good quality and yield perhaps up to the average. Pears are in scanty supply and Bartletts for export bring as high as $3.50 a barrel. E. L. VINCENT.

New York.

TREE PROTECTORS

7½c PER 100; $5 PER 1000

As valuable in summer against sun-scald, hot winds, etc., as they are in winter against cold and rabbits. Recommended by leading orchardists and horticultural societies. Send for samples and testimonials. Do not wait until rabbits and mice ruin your trees.

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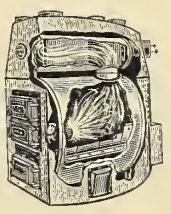
Heat Your Building With BOVEE'S
Ventilating Furnace



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Thousands in use. Guaranteed. Send for free catalogue. Manufactured and sold by the
BOVEE GRINDER & FURNACE WORKS, WATERLOO, IOWA

The HESSLER Still Leads

Rural Mail Box

Best made and most durable box on the market. Don't be deceived by pictures that look like "The Hessler." To get the best, insist on having the Original Gennine Hessler Box, not the imitation.
Agents wanted in every town.

H. E. Hessler Co. SYRACUSE, N.Y. Factory 5

If your subscription has expired, renew it today.

Maj. Holsinger's Department

Early Dug Potatoes.

It is my custom, and has been for years, to dig my potatoes as soon as matured, and place them in cellar. I have never had potatoes to rot when so treated, provided that all injured tubers are carefully culled out. By the early harvesting you prevent the scab and save your potatoes from white grubs and mice. The potatoes keep admirably, if not piled so as to become heated; usually I look them over for any that are injured, for should there be such they will ferment, acidity set in and of course rot; if in contact with others, they too will become diseased and great damage ensue.

Intensive Gardening.

During the past spring I planted my garden largely to Early Ohio potatoes. These were in the cellar by June 30th and the ground planted to Stowell's Evergreen Sweet Corn. We have been eating the latter the past ten days. The crop was, or would have been, a good one, but for the storm blowing

much of it down. There is much of the corn now too hard for table use, which will make good seed for another year.

I did sow the ground to turnips, but having had no attention they will amount to little, being choked out. Now there are two questions frequently asked: Will potatoes dug thus early keep, and when is the best time to select seed corn?

I believe there is no better time to select seed corn than as the corn passes out of the milk stage, or as soon as the corn has passed the roasting ear stage. Let me give last year's experience. My son Clarence was on the Kansas City market when a farmer came in with a full two-horse load of Stowell's Evergreen just a little too far advanced for table use. He could not sell it for table use, so sold it to my son at one cent a dozen or $1.75 for the load of 175 dozen. Meeting him, I spoke of the importance of seed. We husked and carefully dried this corn, some of which was worth $4 a bushel. In several tests every grain sprouted, and it is from this seed that we are now enjoying our present sweet corn. This will apply to field corn as well.

Bees.

While in Douglass County, Minn., and passing through the country I caught sight of some boxes in some trees, evidently intended for bees. I could not resist stopping to make inquiry concerning them. Mr. N. Y. Trenham, the proprietor of the place, informed me that he was thus inspired by what The Fruit-Grower had said and acted upon the suggestion to catch a swarm of bees. It is really a pleasure to meet the friends of The Fruit-Grower Family when away from home. By the way of bees in trees, I have been informed of a man who, acting on the suggestion, spent a considerable sum in boxes, then got permission of a friend to place them in trees in his pasture, with the result that many were inhabited and a good quantity of honey has been stored. I caught a couple of swarms and will soon take them down, placing them on stand for the winter. As to the quantity of honey, I can't say, as I have not yet examined them. One stand (swarmed the 30th of May), has made some 48 pounds of surplus honey, there being two boxes of 24 pounds each of excellent honey. As my bees received little or no attention, I am well satisfied with their behaviour. From a $20 investment I can have honey on the table every meal for the next year; this from ten colonies. What will beat it?

Fishing in Northwest Minnesota.

My absence noted by my friends was due to my two months' outing on my island in Northwest Minnesota. We had a most delightful time fishing, boating and in social intercourse. There were with me eleven members of my own family besides nineteen other friends. A more enjoyable time I never experienced. W. G. Campbell and wife of The Fruit-Grower, were of the aggregation. You will thus see The Fruit-Grower Family were well represented. Would that all the family could enjoy such outings.

Missouri Valley Horticulture Society.

Sept. 16th. Possibly the first failure since our organization, occurred today in our not holding our monthly meeting. I returned home to be at this meeting, but the rain was simply a downpour all the forenoon. The roads and branches were overflowing. As Mr. M. E. Chandler lives in the country, it was impossible to get there except by boat and as I left these on my island in the far North, for once I was deprived of a great pleasure. That Mr. and Mrs. Chandler were disappointed goes without saying. After all the preparation to entertain their many friends.

American Pomological Meeting.

What an aggregation of advanced horticultural thought was assembled in Kansas City. It was my pleasure

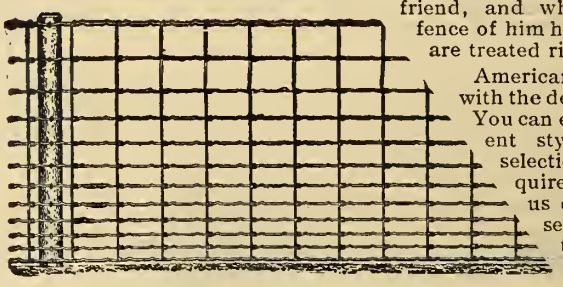
American Fence Talks

By the Makers

The structure of the American Fence is perfect. It is built of big, solid lateral wires, with the upright or stay wires hinged. This is the most perfect structure for a square mesh fence, and is covered by patents which cannot be assailed.

There are many fences on the market. Some tell of their wonderfully hard wire; others speak of new form of construction that makes all other forms look ancient and worthless. But through all this it remains a fact that more miles of American Fence are in use than all others combined, and will continue.

We sell through dealers all over the country. Only in this way are the buyers' interests looked after. The dealer becomes your business friend, and when you buy our fence of him he will see that you are treated right.



American Fence is for sale with the dealer in your town. You can examine the different styles and make a selection to suit your requirements. Or, write us direct and we will send a catalog and tell you where you can get the fence.

THE AMERICAN STEEL & WIRE CO.

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2-Year-Old Grape Vines

Also one-year-old, extra well graded; largest stock at lowest prices; guaranteed true to name. Discount on Fall orders. Send for Price List to

ENOS W. DUNHAM, Lock Box 12, STEVENSVILLE, MICH.

APPLE BOXES AND CABBAGE CRATES

The best package for boxing and shipping apples. Manufactured from northern white pine. Much superior to the barrel as an apple package. Carload lots knocked down. Melon crates. Write for prices. NORTHERN BOX MANUFACTURERS' AGENCY, Dept. A, 412 Dwight Bldg. KANSAS CITY, MISSOURI.

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A Good Crop, after 32 below Zero. Feb. 13th, and 6 below freezing while in bloom is the Record of the

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(HARDIEST SEEDLINGS)

Send 2-cent stamp for colored plates and SPECIAL OFFER for 30 days. 600,000 Trees, all kinds. One Million Small Fruits. Salesmen Wanted.

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4¢ PER LESSON

OUR TREES

are like the corn crop—VERY FINE. We will quote you nice reductions on car lots of Apples, etc., for Fall delivery. Can save you dollars. Write today.

WESTERN NURSERIES, Greenwood, Mo.

W. H. GHORMLEY & Co., Props.

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O. L. Chase
St. Louis, Mo.

2 Full Gallons Free to Try—6 Months Time to Pay

I AM the paint man.

I have a new way of manufacturing and selling paints. It's unique—it's better.

Before my plan was invented paint was sold in two ways—either ready-mixed or the ingredients were bought and mixed by the painter.

Ready-mixed paint settles on the shelves, forming a sediment at the bottom of the can.

The mineral in ready-mixed paint, when standing in oil, eats the life out of the oil. The oil is the very life of all paints.

Paint made by the painter cannot be properly made on account of lack of the heavy mixing machine.

My paint is unlike any other paint in the world.

It is ready to use, but not ready-mixed.

My paint is made to order after each order is received, packed in hermetically sealed cans with the very day it is made stamped on each can by my factory inspector.

I ship my pigment—which is white lead, zinc, drier and coloring matter freshly ground, after order is received—in separate cans, and in another can I ship my Oilo, which is pure old process linseed oil, the kind that you used to buy years ago before the paint manufacturers, to cheapen the cost of paint, worked in adulterations.

I sell my paint direct from my factory to user at my very low factory price; you pay no dealer or middleman profits.

I pay the freight on six gallons or over.

My paint is so good that I make this wonderfully fair test offer:

When you receive your shipment of paint, you can use two full gallons—that will cover 600 square feet of wall—two coats.

If, after you have used that much of my paint, you are not perfectly satisfied with it in every detail, you can return the remainder of your order and the two gallons will not cost you one penny.

No other paint manufacturer ever made such a liberal offer.

It is because I manufacture the finest paint, put up in the best way, that I can make this offer.

I go even further.

I sell all of my paint on six months' time, if desired.

This gives you an opportunity to paint your buildings when they need it, and pay for the paint at your convenience.

Back of my paint stands my Eight Year, officially signed, iron-clad Guarantee.

This is the longest and most liberal guarantee ever put on a paint.

For further particulars regarding my plan of selling, and complete color card of all colors, send a postal to O. L. Chase, St. Louis, Mo.

I will send my paint book—the most complete book of its kind ever published—absolutely free. Also my instruction book entitled "This Little Book Tells How To Paint" and copy of my 8 year guarantee.

O. L. Chase *The Paint Man*

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NOTE—My 8 Year Guarantee backed by $50,000 Bond.

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That made Iowa famous by winning Gold Medals at the St. Louis Fair,

Were Grown from

Wragg Trees

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Send for Catalogue and Prices. Agents Wanted.

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THE IDEAL

Borer Preventative

For apples, peaches, plums, Cherries, etc. Five years' practical use. Over 200,000 trees treated. Protects against rabbits and sheep. One application yearly. Costs 1-10 to 1 cent a tree, including labor. Made only by

DR. H. O. BEESON, Noel, Mo.

Write for literature and prices. Mention this paper.

Famous Irwin's 16 to 1

STRAWBERRIES

Made Ashland's reputation. Big berry, good shipper, second cropper. ORDER NOW. Never sold outside of Ashland before. Plants 60c per 100; special rates for 1,000.

A. L. IRWIN, Box 267, Ashland, Oregon

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50,830 APPOINTMENTS were made to Civil Service places during the past year. Excellent opportunities for young people. Each year we instruct by mail hundreds of persons who pass these examinations and receive appointments to life positions at $840 to $1200 a year. If you desire a position of this kind, write for our Civil Service Announcement, containing dates, places for holding examination, and questions recently used by the Civil Service Commission.

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TELEGRAPHY

Can't tell you about it here. Write for catalogue Wisconsin School of Telegraphy, Oshkosh, Wis.

Reliable Commission Men

The firms whose addresses appear below are all members of the National League of Commission Merchants, which fact insures their reliability. They are in the business to stay, and will appreciate and satisfactorily care for business of Fruit-Grower readers.

COYNE BROS.,
160 S. Water Street, Chicago, Ill.
Fruits, Butter, Eggs, Poultry.

SEESSEL & ASHNER,
Memphis, Tenn.
Produce and Fruits.

No More Blind Horses

For Specific Opthalmia, Moon Blindness and other sore eyes. BARRY CO., Iowa City, Ia., have a sure cure.

Peach Seed for Sale

Write Thomas R. Haman, 1614 E. Oliver st., Baltimore, Md. References as to quality and good results. Established 1879.

Make your own Fertilizer at small cost with

Wilson's Phosphate Mills

From 1 to 40 H. P. Send for Catalogue.

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BARBERS MAKE EASY MONEY

We teach the business thoroughly in 6 weeks. You can make expenses while learning. Barbers make $15 to $25 weekly. Our FREE Catalog tells about it. Write today. Kansas City Barber College, F. O. Bridgford, Prop., 563 Delaware, Kansas City, Mo.

to greet many old-time friends with whom I did California in 1887. Among them were Parker Earle, then president; Major W. H. Ragan, then secretary; T. V. Munson, then vice-president, with others whom I had not seen since. While each is somewhat grizzled, yet all enjoy good health and their mental balance.

What changes have occurred during the past eighteen years. In looking over the list of excursionists in the party of 1887, fully one-half have submitted to the supreme decree. Who of the remainder will survive the next eighteen years? Echo—Who!

Apples in Northwest Minnesota.

When I saw apple trees loaded with fruit so far to the north, I was indeed surprised. True, the planting is not extensive, neither varieties of our best sorts, yet such as were planted were full. Will it so happen that apples will be grown so far north and be shipped to the land of the "Big Red Apple?" Who knows?

FRANK HOLSINGER.

Major Holsinger's Fish Stories.

In his department this month Major Holsinger explains that the omission of his department for several months was due to the fact that he was away from home. This is hardly the case, however. Upon his return he told such outlandish fish stories that he was suspended from duty, for we felt that his statements could not be relied upon, and we did not want him to lead Fruit-Grower readers astray.

However, one of the gentlemen who was with him sent us the photograph from which the accompanying illustration was made, showing a catch of fish the Major made one morning before breakfast, and the gentleman who took the picture assures us that the fish were all caught by Major Holsinger in a short time. After having had some of the fish stories reinforced by this photograph, we have decided to give the Major one more trial, and therefore his department appears this month. If we had not received this photograph we doubt if we could have been induced to believe any of the tales which have been told to us. Hereafter no fish stories will be accepted unless photographs are submitted substantiating every statement. This particularly refers to our associate editor.

Land at Irrigon, Oregon.

A mistake was made in the September issue of The Fruit-Grower in our report of the visit to Irrigon, Oregon. In this report we said land was selling at $250 per acre, but Mr. Holbrook, manager of the Oregon Land & Water Co., writes us that this is a mistake, for the lands are selling for from $90 to $150 per acre, the latter price being for lands close to town. Mr. Holbrook writes that Fruit-Grower readers are taking much of this land, and especially those who have visited other fruit sections of the Northwest, and can therefore appreciate the possibilities of the soil at Irrigon in producing early fruits and vegetables. This land, at the price quoted, is much cheaper than similar lands in other places which have been developed for a longer time.

Mr. Holbrook also writes that the ditch is in good shape, so that water can be carried to the uttermost limits. When the ditch is new, in that soil, it loses much water through seepage, but now that the ditch has been "puddled," it is in good condition, and the silt which comes down in the spring will make it even better every year.

Cooling Fruit Before Shipment.

The Fruit-Grower has referred to a series of experiments which were conducted by Prof. G. Harold Powell of the United States Department of Agriculture, in cooling fruit before shipment in refrigerator cars. In his investigation of the shipment of fruits Prof. Powell arrived at the conclusion that much of the loss of fruit which is shipped under ice is due to the fact that the fruit is warm when placed in the cars, and that it deteriorates very rapidly before it cools off. The best plan, Prof. Powell thought, would be to devise some way to cool the fruit before shipment, and last year he used a refrigerator car as a storage house, in which the fruit was stored twenty-four hours before shipment; then when it was placed in another car for shipment, it was cold and carried to market well.

This year some experiments are being carried on in California, and Mr. R. A. Sprague of Sacramento has invented an apparatus which will cool the fruit in a very short time, after it has been loaded into the car in which it is to be shipped. Mr. Sprague calls his invention the "Cyclone Cooler," and describes it as follows:

"The process of cooling a car of fruit by the Cyclone cooler consists in forcing a large volume of air down through the salt and ice of one tank, then dispersing this cold blast through the fruit in the car, and then sucking it out through the other iced tank and through the condensing chamber, and continuously forcing this same air through the same path until the fruit is cooled.

"Where there are very heavy shipments from one point we use a brine pipe chamber as cooler and condenser and otherwise use same apparatus for cooling cars, except that they are iced after instead of before the application of the cooler. We save twenty degrees of refrigeration by use, in the condensing tube of the brine, of the salt and ice melting while the cooler is applied. Any gas or moisture from the fruit is condensed on passing through this circuit, leaving the atmosphere of the car fresh, cool and dry.

"The time required to make a car of hard-ripe peaches secure from decay during a shipment lasting from one to two weeks varies according to conditions, from one to five hours. When the right temperature is reached, the connections with the ice tanks and drip tubes are removed and the car is ready to send on its way with the ordinary refrigeration.

"It will be noted that the usual refrigerator cars of any pattern are used without modification, and the fruit is loaded and braced as now, the cooler being then applied for the time necessary.

"In using this quick cooling process, it becomes quite immaterial whether the car is delayed a day or two or not; it will carry safely. Then, too, the fruit may be safely received on the platform or in the loading shed at any time during the day, regardless of whether or not an iced car is ready to receive it, since the exposure is a slight matter for fruit which is to be thoroughly cooled before shipment.

"Twenty cars of all sorts of deciduous fruit have thus far been treated by the Cyclone cooler, including the most delicate hard-ripe peaches and nectarines, and in no case have these shown any further ripening or degeneration. Fruit soft-ripe and bruised has arrived in the same undesirable condition, but not rotten, as it would have been if not cooled before shipment. If any shipper will get into this fully iced car and then have the doors closed, he will quickly realize what the stifling hot and moist air is likely to do to his fruit. During the two or three days necessary to cool such fruit by slow movement of air from and to the ice tanks, such harm is done that the most perfect refrigeration during the rest of the trip cannot prevent it arriving at its destination more or less decayed, or if apparently sound, it is often so 'started' that when brought out of the iced car it quickly breaks down. Fruit quickly cooled before shipment never starts to decay and hence will keep well after leaving the iced car. This was shown in the case of the hard-ripe peaches unloaded from the Cleander car July 10 to Chicago, and kept in store without refrigeration for a week without decay.

"This invention will not make it profitable to be careless in packing or handling of fruit, but it will save almost completely from losses in transit the vast tonnage of good, well handled fruit which now breaks down so badly in transit. In the case of all deciduous fruits, when this process is used, the fruit should be left upon the tree until highly colored and sweet, but still hard. In this way twenty per cent is gained in weight, and sweet, high flavored fruit may thus be delivered to Eastern consumers.

"In the case of citrus fruits and vegetables shipped under ventilation it will doubtless be useful in thoroughly airing out and utilizing the temperature of the fruit or vegetables and cooling and drying to the desired degree, while for citrus fruit shipped under refrigeration, it will prove quite as useful as with the deciduous fruits."

EXPERIENCED ORCHARDIST—Wanted position as superintendent of orchard. Can give references. John Wilson, 904 D street, Lincoln, Neb.

Big Dividends

and sure profits have always been made in oil refining, but the big fellows have been getting all the money in the past. There is a change going on and it will be different in the future. A great independent Co-operative Oil Refinery has been organized and started in Chanute, Kan., by a number of reliable, experienced and conservative business men who watched and investigated the great oil fields of Kansas until they were satisfied that it would pay handsomely to build a large refinery. They found the prospects so flattering and the possibilities so great and practically certain that they decided to organize what is now known as the Kansas Co-Operative Refining Co. It is strictly co-operative—the officers receive no salaries, everybody shares alike, according to the amount of stock they hold. This opens the way for a small investor to become a stockholder in a very profitable business where all the profits go to the stockholders.

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How Orchards Are Irrigated.

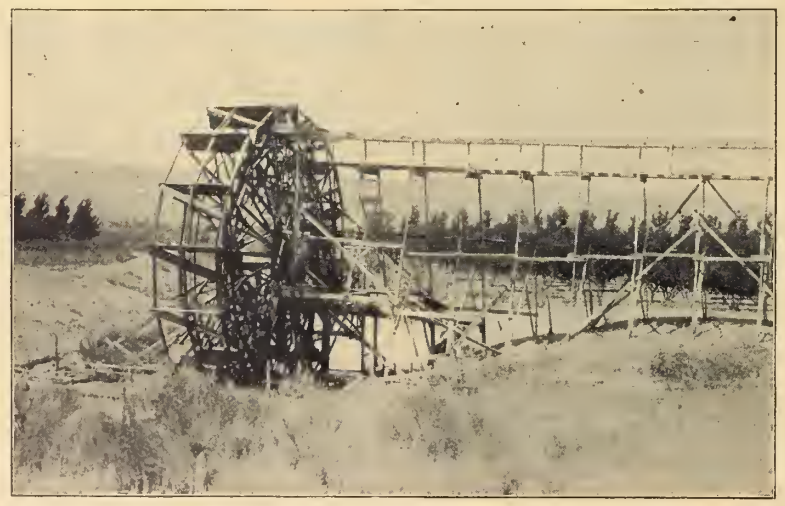
In our report of the visit to the Northwestern country, last month, little was said regarding the details of watering the soil, yet to an Easterner, or "tenderfoot," this is one of the most interesting features of the irrigation problem. Most of the orchards are watered by furrow irrigation, these furrows being opened in a direction which will give a gradual fall to the ditch. On hillsides these furrows must be run around the hill, so that there will not be too great fall. This plan is shown in the illustration of a strawberry field in the Hood River Valley. The furrows are run at varying distances; in soils through which the water percolates readily the furrows can be farther apart than in soils which are tenacious. In sandy soil, however, which

FURROWS PREPARED FOR IRRIGATION.

does not carry water well, the furrows are rather close together.

The accompanying illustration shows furrows opened for the reception of water. These furrows were in soil which was to be planted to garden crops, and after planting the furrows conformed to the rows of vegetables. These furrows are closer together than furrows in apple orchards. For strawberries the furrows run between the rows, so that they are rather closer together than they are in the orchards, but water is not allowed to run in them so long Where the furrows are at rather wide distances in orchards, the water is allowed to run for about twenty-four hours in a place, and then they are cultivated down with harrows, disc, or some other implement.

Another interesting problem connected with watering the soil is presented where one wishes to apply water to land which is above the ditch. Various methods are employed for raising the water to this land,



WATER WHEEL, TO RAISE WATER "ABOVE THE DITCH."

such as hydraulic rams, gasoline engines, etc. The most popular plan, perhaps, is the water wheel, similar to the one shown in the accompanying illustration. This wheel is near Grand Junction, Colo., and is a very large one. The wheel revolves on an axis, the power being furnished by the current in the canal. As the water catches in the paddles the wheel revolves, and long, trough-like buckets fill with water at the same time. The current of the water carries the wheel around, lifting the water in the buckets, until just as they pass the "center" at the top of the wheel the water is discharged into the flume leading off to the right. The buckets, therefore, are full of water on the upward trip, and empty on the downward journey, the current in the canal being sufficiently strong to lift the water.

The flume carries the water away to the right, and it is conveyed at will. The wheel shown in the illustration raises the water perhaps thirty feet—and the water itself furnishes the power.

Still another feature which was most interesting to The Fruit-Grower representative was the methods adopted to get water across a roadway, where a flume was used to convey it. The water is always carried in a ditch, provided the soil will carry water well, and provided the lay of the land is such that this can be done. But very often there are low spots, and the water is carried across these places through a flume. Were a flume to cross a roadway it would naturally interfere with travel, and therefore an "inverted syphon" is used to carry the water across. The flumes are open at the top, as a rule, but at the side of the roadway to be crossed the water is discharged into a closed down pipe, which leads to the level of the ground, and then crosses under the roadway. On the other side a perpendicular pipe carries the water almost up to the former level on the other side of the road, and then the flume is again used to carry the water on its way. This plan prevents any interference with travel.

Georgia Horticulturists Meet.

The twenty-ninth annual session of the Georgia State Horticultural Society was held in Macon the first week in September, with a good attendance. The papers were good and the fruit exhibit in connection with the meeting was very interesting, particularly the new fruits which were shown. This society is one of the best organizations of fruit-growers in the country. Officers for the ensuing year are: President, Hon. P. J. Berckmans, Augusta; secretary, Charles T. Smith, Concord; treasurer, L. A. Berckmans, Augusta. The next meeting will be held in August, 1906, at Macon.

On May 26 a straight carload of cherries from San Jose, Cal., sold in New York for $5,342. Recently a straight carload of grapes sold in Chicago for $2,741. These are record prices for fruits on the New York and Chicago markets, and show how the public will pay for fancy fruits.

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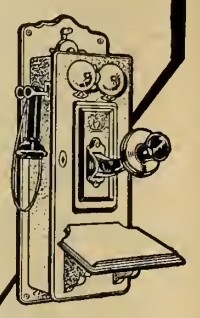

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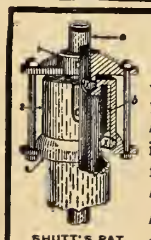

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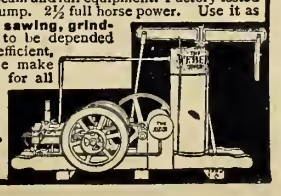
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The Chesnut Dewberry.

Some time ago we received some samples of this dewberry from the originator, J. T. Chesnut, Keene, Texas, and commented upon them at the time. Later Mr. Chesnut sent us a photograph showing a portion of the patch of dewberries in bloom. This not only gives one an idea of how prolific the plants are, but also shows how dewberries are cultivated in that section. Dewberries are becoming very popular in certain sections, notably in parts of Texas, for the berries are not only large and of very good quality, but they come earlier than blackberries, and bring good prices. At Neosho, Mo., dewberries are also extensively grown,

the late F. H. Speakman being one of the best growers of this fruit in this country.

How to Grow Dewberries.

J. W. Austin, Pilot Point, Texas, originator of Austin's dewberry, and who has been successful in dewberry culture, sends us the following suggestions to those who wish to grow this most delicious fruit:

1. Secure good, healthy, well-matured plants.

2. Select rather poor clay or mixed soil—is best. A rich, deep soil is all right for blackberries, but dewberries will bear two or three times as many large fine berries on their natural kind of soil, clay or clay mixed.

3. Plant 18 inches apart in row and rows 4 feet apart in well prepared soil.

4. Plow and hoe shallow sufficient to keep land clean.

5. Trimming—This is very important. First year continue to clip ends of vines off when ten or twelve inches long. Continue this through first summer, which makes a round or bushy plant, thick, with firm fruit buds, which will bear a good paying crop the next year after set out. Now note this carefully, when blooms are dropping and fruit begins to form, clip off the new sprouts on the plants 4 or 5 inches from the ground or crown of the plants, which will be from 8 to 12 inches long at this time. Do this twice while fruit is growing and ripening, as it keeps this growth out of the way of pickers and causes so much more substance to go into the fruit. Then, soon after fruit is gathered, clip out all vines that bore fruit close to crown and each season keep the plants rounded up same as first year, remembering to hoe and plow sufficient to keep land around plants clean. In early spring each year should you find them too bushy, thin out and clip back if some are too long. Planting on clay or mixed soil, close planting (eighteen inches in row and rows four feet apart,) close trimming and clean culture are the special features in dewberry cultrue. I advise close planting, because the close pruning is necessary. The roots penetrate nearly straight down very deep in the soil, hence are not broken to cause suckers to come up like blackberries do. It is alright to work a medium sized ridge up to the row to keep berries cleaner. I have tried trellising and also growing in grass and have tried cutting off plants to top of ground soon after harvesting crop, but have not found any system of culture to compare with the above system gained from seventeen years experience with dewberries.

Fruit at Missouri State Fair.

Superintendent G. T. Tippin of the fruit exhibit at the Missouri State Fair writes that the horticultural department at the fair this year was a genuine surprise to visitors. The display was by far the largest which has ever been made in this department, notwithstanding the shortage of the fruit crop in Missouri. About 1,500 plates of apples were shown, and about 300 plates of grapes, plums, peaches and pears.

The premium for the best and largest display of fruit by a county of Missouri was won by Pettis, Laclede County carrying off second honors. Other counties which had exhibits were Platte, Newton, Shannon, Camden and Miller. The largest collection of pears came from Jackson County, while the best exhibit of grapes came from Glasgow, Pettis County having the second exhibit in this line. Arthur T. Nelson, Lebanon, Mo., was perhaps the largest exhibitor in the horticultural department, and, as usual, he won his share of the premiums. The fruit was judged by John T. Stinson, Springfield, Mo., and his work gave satisfaction to the visitors. With a fruit crop next year, it is probable that half the space in the Agricultural building will be needed for the fruit exhibit. Exhibitors who show perfect fruit will be the only ones standing a show of winning any of the premiums.

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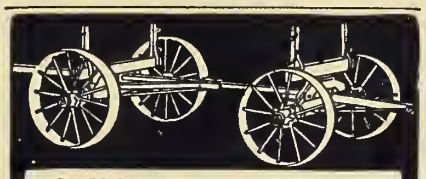
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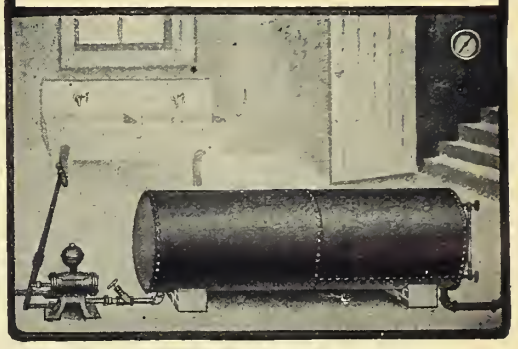
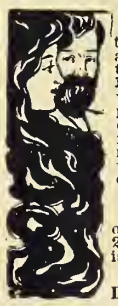


Don't Have Gray Hair

Hale's Turkish Hair Elixir restores your hair to its youthful color, beauty and lustre, and makes you look ten years younger. It turns GRAY, STREAKED, BLEACHED or FADED HAIR to a soft black or brown, or whatever was the original shade. Results permanent. A harmless vegetable product. Fills thin spots, renews life, promotes growth. Delicious dressing; nothing offensive, sticky or greasy. Prevents Dandruff and Falling Hair. Unequaled for
Beard or Mustache.
Don't delay another day, but write at once. We send regular $1 worth for 25 Cents by mail, prepaid. Hale's Turkish Hair Elixir has been sold for 50 years
TREMONT TOILET CO.,
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All Kinds of Nursery Stock
for sale. 200,000 2-year Apple, 30,000 3-year Apple, at the lowest price.
G. W. TRIBBLE, BILLINGS, MISSOURI

Nursery Stock
We can fill your wants in Strawberry, Raspberry and Blackberry Plants, Grapes, Currants, Gooseberries, Trees, etc., for Fall or Spring delivery. Write us your wants and we will endeavor to please you.
ELMHURST NURSERY,
M. E. Chandler, Prop. Argentine, Kas.

4,000,000 Peach Trees
Tennessee Wholesale Nurseries
June Buds a Specialty.
No agents traveled, but sell direct to planters at wholesale prices. Absolutely free from disease and true to name. Write for catalogue and prices before placing your order elsewhere. We guarantee our stock to be true to name. Largest Peach Nursery in the World. Address
J. C. HALE, WINCHESTER, TENN.

Questions and Answers

How to Make Turnip Kraut.—In answer to the subscriber wishing to make turnip kraut, I will give a tested recipe: First wash perfectly clean, then pare away the full thickness of rind, then cut out all the tops. For the purpose of cutting them there are cutters similar to the kraut cutters, except that they make smaller strips. Turnip kraut is made exactly like cabbage kraut, and is cooked in the same way. If subscriber finds out where he can get the kraut cutters, I wish he would let me know, for I want one, too.—Fred Kaenzig, Fort Garrett, Ky.

To make turnip kraut, wash and peel the turnips as soon as pulled; cut them fine and salt and weigh down in a vessel, just as one makes cabbage kraut. Cook same as cabbage kraut.—Mrs. S. A. Barrett, Miller, Mo.

Wm. Pfaender, Jr., New Ulm, Minn., also sends directions for making it, same as foregoing, and he says it is very good. The New Ulm Hardware Co., New Ulm, Minn., has knives for cutting the kraut. Mr. Pfaender says it is important to keep the brine over the kraut all the time, once it has formed.

H. L. S., Conway Springs, Kan.—(1) Do you think budded pecan trees will grow here in Sumner County? We are about the middle of the southern tier of counties; soil is black sandy loam, with subsoil of sand and gravel mixed with the soil. (2) I am thinking of mulching under my apple trees and sowing the rest of the ground to alfalfa; would mow the latter and what I do not need for mulching will allow to lie where it falls. Soil is only medium strong in nitrogen. Do you think this plan will work? I can get wheat straw for nothing to use as mulch. Land is rolling and washes somewhat.

(1) Budded pecans ought to grow all right in your locality. Native pecans are found much farther north than that, in Kansas and Missouri. (2) Alfalfa is not generally regarded a good crop in an orchard. Red clover is better, to be handled in the way you suggest. The advocates of the mulch theory would use the wheat straw under the trees and keep the clover and grass mowed in the vacant spaces between the trees. Care must be taken, however, that a fire does not get started in the orchard, and in winter one must protect the trunks of trees against injury by mice.

O. H. W., Corode, Pa.—I understand that a peach tree so far distant from all other trees that the pollen cannot be blown from one to the other, will reproduce itself true to variety. Is this true? If so, then how far will the pollen of one affect the other? If two good varieties, as Elberta and Crawford Early, pollenize each other, may one expect a new variety as good or better than either of the originals?

Peach trees which have not received any pollen from other varieties will not always produce seed which will reproduce that variety. There is a tendency to revert to the type of other ancestors. But the chances are that the seedlings will be more like the parent, where there has been no cross-fertilization, than where other varieties near by blossom at same time. But no prediction can be made as to the character of any seedling, whether cross-fertilized or not. Burbank, Hansen and other plant breeders destroy thousands of seedlings before they get one which has characteristics which please them. Growing seedlings is an uncertain business.

J. S. P., Washburn, Mo.—Is there a full crop of Conover peaches at Weatherby, Mo., this year? This is the peach, you will remember, which is introduced by Mr. A. L. Zimmerman.

We understand from Mr. Zimmerman that the crop was a good one this year. There were some peaches, at any rate, for Mr. Zimmerman sent us some of them. It seems to be very hardy.

C. R. P., Arkadelphia, Ark.—Please tell me how to select apple seed for planting. (2) When is the best time for planting, and what kind or soil is best? (3) At what age of the scions should they be cut and grafted?

Apple seeds can be selected from cider pomace, washing the seed from the pulp of the fruit. Or they can be cut from apples at time of making apple butter. If the seeds are allowed to dry out, they will not germinate readily unless they have been frozen. To accomplish this result, stratify the seeds in moist sand, using a layer of seed and a layer of sand alternately. Put the box containing the sand and the seeds outdoors, keeping the sand moist throughout the winter. The freezing and thawing will soften the coats of the seeds so they will germinate readily. They should be planted in spring, in good rich soil. Prepare a good seed bed, having the soil in good tilth; lay off rows four feet apart and plant seeds rather thickly in the rows, covering about an inch deep. (3) Scions are cut before growth starts, taking the wood of the previous season's growth.

O. M. K., Montrose, Colo.—I have just read the account of your recent trip through the Northwest and was much interested. You speak of meeting the Newtown and Spitzenberg apples, which do remarkably well in some localities. **I do not think they have** ever been tested in this section, and I have decided to experiment with them next season by top working two or three stocks with these varieties. How would they do on Winter Banana stock, or would Ben Davis be preferable? Are the Newtown and Spitzenberg hardy trees, as free from blight as Ben Davis and Winesap? Are they good bearers, and do they hang on and keep well? From what you know of the King David, do you think it will successfully fill the place of the Jonathan? Will the tree succeed where Winesap or White Winter Pearmain thrive? I do not think the Jonathan here is a first-class tree.

The July Fruit-Grower contains a synopsis of a paper read before the Missouri Horticultural Society by Prof. Stedman, in which he states that the arsenate of lead is the best of all of the arsenical poisons for eating insects; he also gives formula for making it, which is very simple. He also states at this time or some other that the arsenate of lead and Disparene are the same. Last year we of this locality used Disparene with very satisfactory results, the only objection to it was the cost, 16½ cents per pound. This year we substituted Swift's brand of arsenate of lead at 11 to 13 cents per pound. Results have not been at all satisfactory. We have fought worms more persistently than ever before and have a larger per cent of wormy apples. In discussing the matter with a neighbor, we concluded that perhaps Swift's preparation was not of full strength, and I suggested as a remedy that we get the arsenate of soda and acetate of lead and do our own mixing, and referred to Prof. Stedman's article as to its preparation. He replied that he had been reliably informed that to mix it successfully the ingredients must be ground together. How is this? Have you any reason to believe Swift's preparation is not pure?

Many Ben Davis trees in the Northwest are being worked over to Newtown and Spitzenberg, but we did not hear of any Winter Banana trees being top-grafted; the latter variety is not generally planted. Both Newtown and Spitzenberg are hardy wherever we found trees; the latter does well in New York, of which state it is a native. We saw no evidences of blight on either of the trees. Both are good bearers, but Spitzenberg is inclined to bear every alternate year, and is not as regular in bearing as Newtown; for this reason many Hood River growers make more money from their Newtown trees than from Spitzenberg, although the fruit of the latter sells for considerably more per box. The King David resembles Jonathan somewhat, but has not been tested enough to recommend it to supersede Jonathan where the latter does not make a good tree. Swift's arsenate of lead has given good results in other localities, and is supposed to be practically the same as Disparene. Perhaps the supply furnished your section was "off" in some way. The Colorado Experiment Station found it as satisfactory as Disparene, and we should hesitate to think that it is adulterated, as a rule. Arsenate of lead is rather hard to make, and Prof. Stedman recommended that growers buy it already prepared, either as Disparene or Swift's arsenate of lead. By buying Disparene in quantities it can be purchased for 15 cents per pound, we think.

The Horticultural Society of Southern Illinois will hold its annual meeting Nov. 21 and 22, 1905, at Olney. Address the secretary, E. G. Mendenhall, at Kinmundy, Ill., for information. Exhibits of all kinds of horticultural tools, etc., are invited.

To Land Agents and Homeseekers.

The Chicago Great Western Railway will, on the first and third Tuesdays of each month to December inclusive, sell round trip tickets at only one fare plus $2 to points in the following states: Alabama, Arizona, Arkansas, Colorado, Florida, Georgia, Indian Territory, Kansas, Kentucky, Louisiana, Mexico, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New Mexico, North Carolina, North Dakota, South Dakota, Tennessee, Texas, Utah, Wyoming and Virginia, also to Alberta, Assiniboine, Canada Northwest, Manitoba, Western Ontario and Saskatchawan. For further information apply to M. F. Montgomery, City Passenger and Ticket Agent, 414 Felix st., St. Joseph, Mo.

As has been already announced, the semi-centennial meeting of the Illinois State Horticultural Society will be held at Champaign, Dec. 12 to 15, 1905. Secretary Bryant is particularly anxious that the display of fruit be a good one, and has sent out circulars to the members announcing that the Twin City Ice & Cold Storage Co. of Champaign will store, free of charge, any fruit consigned to them, only stipulating that the freight or express charges be prepaid. The packages should be marked "For exhibit of State Horticultural Society." It is expected that this meeting shall be the best the society has ever held, and the program will be of a very high order.

WANTED—Good farmer for large farm containing apple orchard, pasture and corn ground. Address, stating orchard experience, box 1123, St. Joseph, Mo.

FRUIT FARMS AND FRUIT LAND FOR SALE

This department is for the benefit of Fruit-Grower readers who wish to buy, sell or lease farm lands. All advertisements of this nature will be inserted for a charge of 2 cents per word, each initial and number to count as a word. No display type will be used in ads which are accepted at this reduced rate, and all charges must be paid in advance. The rate of 2 cents per word is for each insertion. Count the words when sending your advertisement, and the cost can be easily ascertained.

THE FRUIT-GROWER CO., St. Joseph, Mo

FOR SALE—Fine 800-acre Stock Farm, 50 miles from Kansas City; good new buildings, specially constructed and admirably adapted for fine stock raising; best soil, running water; prices reasonable; terms favorable. Send for full description and bargain farm list. THE OWL AGENCY, Ozawkie, Jefferson Co., Kan.

Forty-acre fruit farm about 9 miles from Emporia; good quality of land, with 25 acres in good standard varieties of winter apples, in good bearing condition. Fair house, barn and other improvements; good neighborhood. Price, $2,500. J. M. McCown, Emporia, Kan.

FOR SALE—163 acres, 6 miles southwest of Sarcoxie, 3 miles to a railroad station; good 9-room house, barn 36x62, with large hay mow, good well and orchard; 143 acres in cultivation, mostly valley land; 20 acres in timber; close to good school and church; on rural route. Price $50 per acre.
PIERSALL LAND CO., SARCOXIE, MO.

LANDS CHEAP.

Large bodies of land and ranches; timber land, fruit and truck farms in Kansas, Oklahoma, Texas, Old Mexico, Louisiana, Arkansas, Southern Missouri, Colorado, New Mexico and California. Tell me what you want and where you want it and how much money you will invest if suited, and I will send you list of bargains of the kind you want in that locality. I also have small farms and ranches in all parts of said states. I am working above mentioned territory thoroughly. Write me and see how well and how promptly I will serve you. I have land at 35 cents to $35 per acre.
GEORGE W. MORRIS, LYNDON, KAN.

BUSINESS OPPORTUNITIES—Special representatives in country wanted for all or part time. Dignified and profitable work. Previous experience not necessary. Address Journal of Agriculture, Publication Department, 204 Olive Street, St. Louis, Missouri.

FOR SALE—Farm of 320 acres, one and a half miles from Winchester, Kan.; either quarter section will be sold separate if desired. On the southwest quarter is a house of 8 rooms, a cottage; a barn 24x40, corn crib 10x40, driveway between, all under shingle roof; hog pens, smoke house, five-ton scale, two wells, cistern, corn crib; 500 Missouri Pippin, 250 Gano apple trees, sent out nine years ago; 550 Jonathan, set out two years ago; 12 acres in strawberries, blackberries, red and black raspberries; 800 peach trees, set out this spring; two packing sheds. On the southeast quarter are 6,000 Ben Davis, 1,800 Gano apple trees, set out ten years ago; 500 Gano, set out two years ago. Living water the year round on every 40 acres if wanted. Timber on the two quarters. For particulars write Wm. Booth, Winchester, Jefferson County, Kan.

FOR SALE—40-acre fruit farm, 2 miles from Olney, Ill.; 25 acres in good bearing apple trees, besides other fruit; near school and church; good 6-room house and cellar; new barn and outbuildings, all in first-class condition; plenty of good water. Price, $2,650. W. A. WHEELER, Lock Box 299, Redlands, Calif.

We are the largest dealers in real estate in Grand Valley, the famous peach, apple and pear growing section of Western Colorado. Orchards here 8 years old net the growers from $500 to $700 per acre. The climate is the best in the world and is a specific for lung and throat troubles and asthma. Write us for information. The Home Loan & Investment Co., 357 Main St., Grand Junction, Colo.

REED & EVANS
Room 202, Baker Blk., Springfield, Mo.
REAL ESTATE AGENTS
Our specialty is the best improved farms in Greene and adjoining counties.

CASH For YOUR FARM
Farms of All Kinds Sold Quickly for Cash. Send description and lowest cash price. DO IT NOW—Don't Wait. Address
HOMER E. KENT, Des Moines, Ia.

Virginia Homes
You learn all about Va. lands, soil, water, climate, resources, products, fruits, berries, mode of cultivation, prices, etc., by reading the VIRGINIA FARMER. Send 10c for 3 months' subscription to
Box A54 FARMER CO., Emporia, Va.

CASH
For your farm, ranch, home or business, no matter what it is worth or where located. If you want your property sold quickly, send us description and price. Then we will immediately write, telling you how and why we can quickly convert your property into cash.

IF YOU WANT TO BUY
a business or property of any kind, anywhere, tell us what you want and where you want it. We can fill your requirements, do it promptly, and save you time and money.
N. B. JOHNSON & CO.
520 Bank Commerce Bldg. Kansas City, Mo.

The Mild Climate in Virginia
offers splendid opportunities for farming, stock raising, fruit growing and general farming. Winters are mild and short. Climate healthful. Markets near. Lands are advancing. Write for information to
G. W. Koiner, Comr. of Agriculture, Richmond, Va.

The Coast Country
For Wealth and Health—Corn 140 bushels per acre; onions $800 per acre; potatoes $525 per acre. Splendid cattle and hog country; cholera unknown. Cooler summers and warmer winters. Three crops each year. Land equal to best in the United States at $5 to $25 per acre.
HILAND P. LOCKWOOD,
102-3-4 Bryant Bldg., Kansas City, Mo.

Irrigated Farms
In the Little Empire of the Western Slope

Profitable farm lands are scattered all along the line of the
DENVER & RIO GRANDE RAILROAD
"Scenic Line of the World."
In the valleys of the Grande, Gunnison, North Fork and Roaring Fork Rivers, and in the San Luis and Uncompahgre Valleys of Colorado, and the Farmington district of New Mexico—farming, stock raising and fruit growing are carried on in a way that is a revelation to the farmer in the East.
For those who desire to make new homes, there is no other region that offers more and better advantages than Western Colorado, a land of blue skies and sunshine, with a temperate and even climate, where the erstwhile desert needs but to be tilled and watered in order to verily "Blossom as a Rose." Several illustrated publications, giving valuable information in regard to the agricultural, horticultural and live stock interests of this great western section, have been prepared by the DENVER & RIO GRANDE RAILROAD, and can be obtained by addressing
S. K. HOOPER, G. P. & T. A., Denver, Colo.

Through Tourist Cars
Personally Conducted to
California
The Southern Pacific Tourist Car service is famous for its excellent equipment. If going West, investigate this way of travel—you'll be surprised when you find how cheaply you can go, and still travel in comfort.
Daily Service
Write today for California literature and full information. Address
H. G. KAILL
Ass't Gen'l Pass. Agent
901 Walnut Street
Kansas City, Mo.
Southern Pacific

a Jackson County Fruit Farm
At Sibley, in the northeast corner of Jackson County, Mo., I will sell 80 acres all in apple trees of the finest varieties, being the Jonathan, Gano, Winesap and Ben Davis. The trees are thrifty, in good condition and just in full bearing. A rock road leads from the farm to Kansas City. A railroad station is at Sibley. Price $16,000.00—one-half cash, balance to suit at 6 per cent. Have other fancy farms to sell.
J. H. LIPSCOMB, 306 Fidelity Trust Building KANSAS CITY, MO.

If the date on the wrapper in which you receive this issue of The Fruit-Grower shows your subscription to have expired, renew it today. Rate will be $1 per year after January 1, 1906.

Irrigable Government Lands

The Greatest Opportunity Yet Offered to Get Irrigable Government Land—Under the Carey Act, at Cost of Reclamation.

To Members of The Fruit-Grower Family:

I was the first to call your attention to a first-class opportunity to get a good piece of irrigable land at a fraction of its value—and also to point out the immense advantages to be derived from having that kind of land.

In the last February and March numbers of this publication I gave full details as to a tract of irrigable government land, to be offered in the Big Horn Basin in Northwestern Wyoming, under the Carey Arid Land Act, which provides for reclaiming such lands and selling same at the cost of reclamation (which is but a fraction of its market value). In tracts of not less than 40 nor more than 160 acres to any one person, and giving everybody a chance.

The response was immediate from all parts of the country from people of all occupations. A lawyer at Tidewater in "Ole Virginny," a lady "rancher" in Montana, a farmer near the Gulf in Alabama, a school teacher at Sleepy Eye, Minn., a miner in the Gunnison country, a doctor in New York—these are a few samples of the variety and wide distribution of the people reached by The Fruit-Grower and of the people becoming aware of the exceptional desirability of irrigable land. From the staked plains of western Texas, from the new lands of Oklahoma, from the Alleghany mountains and the Illinois prairies—literally FROM MAINE TO CALIFORNIA AND FROM THE LAKES TO GULF, the inquiries came.

Others beside myself were at work on that proposition. To give my people a chance to reserve a piece of the land until convenient to get out to see it, I arranged that they might send me A LOCATION FEE OF 50 CENTS AN ACRE and I would select THE BEST LAND THEN OPEN to settlement and hold it until the customer could get out to see it, giving him the privilege of selecting any other tract open to settlement then that he might like better than my selection—OR RETURN HIM HIS FEE if he did not find the country to his liking. And I may remark, in passing, that more people sent their fees in advance than otherwise, and it proved far the more satisfactory way. The land hunter was sure of finding a good piece of land awaiting him, which he quickly exchanged for any tract he liked better—or got his money back at once, if he did not like any—and I knew that the people I was hauling around over the land, at heavy expense to me, "MEANT BUSINESS," and were not merely sight seeing at my expense.

On the 7th day of March, our first party went to see the lands, and before the last of April we had settlers ready for the lands, so far in advance of the ditch-making force that we had to stop locations for an indefinite period to allow canal construction to catch up with settlement. Then I began looking for other lands that could be taken in the same way, and have just contracted to settle 30,000 ACRES OF TRULY THE CHOICEST LAND OF ALL THAT REMARKABLE REGION, so rich in advantages and possibilities. In many particulars the new tract is superior to the land I first offered. In more than twenty years' experience in irrigation matters, extending over most of Arid America, I never have seen a body of land that combined more advantages. The soil is excellent, the surface such that the water can be most readily conducted upon the land and the facilities for draining off any excess (a most important factor, and one likely to be overlooked) are practically perfect. The lands lie along the Big Horn River, one of the three streams in the United States carrying more water than it has land accessible for irrigation. Beside, the tract has one of the earliest appropriations of water secured from the entire supply, making THE WATER RIGHTS UNQUESTIONABLY AMPLE, RELIABLE AND PERPETUAL. The county seat of the county is situated in the midst of the tract, and a railroad extension—to be built without delay—will pass through and alongside the entire tract, so that NO QUARTER SECTION of the whole WILL BE MORE THAN THREE MILES FROM RAILROAD.

MONEY MAKERS—NATURAL ADVANTAGES.

These lands require no clearing, are smooth and not rocky. Abundant domestic water supply. The lands yield heavily of sugar beets, testing extra high in SUGAR, and commanding highest price. SUGAR BEET LANDS elsewhere, not so good, SELL AT $150 PER ACRE. Of wheat, 40 bushels per acre and upward is produced, and Big Horn Basin wheat, weighing 66 pounds per struck bushel, took first prize over world competition at the St. Louis fair. Oats average 60 bushels per acre, and often exceed 100—weighing as high as 48 pounds per measured bushel. Rye and barley do as well. Corn makes very fine crops. Alfalfa, 7 tons per acre per season; the finest of timothy, potatoes of best quality, 200 bushels per acre and up so high that it is not expedient to state the yield. It sounds too big. Fruits of every variety, large and small; vegetables, flowers and shrubbery of all kinds; horses, cattle, sheep and hogs; poultry of all sorts, bees and fish—all the foregoing make up but a partial list of the money-makers of the Basin, for there are also IMMENSE DEPOSITS OF COAL (in hauling distance of these lands AT $2 A TON), great forest areas (posts, etc., in hauling distance), and rich veins of GOLD, SILVER AND COPPER, and numerous finds of OIL AND NATURAL GAS. The region has a healthful elevation of about 3,500 feet. There are over 300 days of sunshine per year, equable winters, no sultry days or nights in summer. No crops are cut short by drouth, because all crops are irrigated, and, being an arid region, none are ruined by unseasonable rains. THE GREAT NATIONAL YELLOWSTONE PARK, the greatest "show place" on earth, is on one side and THE GREATEST HOT SPRING IN THE WORLD—a coming sanitarium of world-wide celebrity—on the other.

IT IS NO WILDERNESS. Telephone lines and rural free delivery postal routes traverse the country; stage lines connect daily with the railroad; churches and schools and trading points are accessible, modern roller mills grind the grain; steps are taken to secure the erection of sugar factories, three railroad extensions are pointing into the Basin and numerous electric and dummy lines to connect with them are projected.

SOME STRIKING COMPARISONS.

The last preceding issue of The Fruit-Grower contained a most interesting series of articles by Mr. Irvine, editor of The Fruit-Grower, covering his recent experiences in the Northwest—almost wholly among irrigable lands. Please recall that he found IRRIGATED LANDS IN IDAHO VALLEYS SELLING AT $50 TO $300 PER ACRE AND IN THE MOUNTAIN CANYONS OF COLORADO SELLING AT $500 TO $1,500 PER ACRE. (See September Fruit-Grower, page eight.) He found fruit lands in the Northwest, having a permanent water-right, GOING AT $100 TO $1,000 PER ACRE. (see p. ten, same issue); STUMP LANDS on Hood River, "HARD TO CLEAR," WORTH, IN THEIR RAW STATE, $200 TO $100 PER ACRE, (see p. 15); bare, black sands, in Oregon, GROWING ABSOLUTELY NOTHING, unwatered, but where irrigated SELLING UP TO $250 PER ACRE—and same kind in Idaho UP TO $1,500 PER ACRE (see p. 17); and land in North Yakima country, Washington, at $100 an acre (see p. 20). I personally know that fruit lands in the last named locality have sold as high as $800 PER ACRE. Original cost, in wild state, as low as $1 per acre in earliest experiences.

"YOU HAVE TO SHOW ME."

Mr. Irvine says he applied the Missouri test and required to be "shown." He found those LANDS ACTUALLY SELLING AT THE PRICES QUOTED and going right on up in value. Such examples could be multiplied by thousands, all over the arid regions, and the facts have a sound, logical basis, thus: Arid regions are IMMUNE FROM HAVING RAINS AT WRONG TIMES, as well as at other times, and there is sure to be abundant sunshine, which is one of the prime elements of rapid, luxuriant growth; the soils do not have their soluble plant foods washed out by pounding, leaching rains. Crops are safe from being damaged—even ruined—by water, after being grown and harvested, as so often happens in rain countries. On irrigated lands nature provides soil and sunshine and man applies the water just as needed, and, by simply attending to business, is sure to GROW A "BUMPER CROP" OF BEST QUALITY, EVERY YEAR, AND SAVE IT ALL.

Diligent, intelligent irrigation means scientific farming and surest, most profitable results.

THE LANDS I NOW PROPOSE TO SETTLE ARE THE EQUAL OF ANY OF THOSE MR. IRVINE DESCRIBED, and are superior to most, in many respects. I could sell every acre of this land at $100 within a year. Water rights are unquestionable; title perfect, from the government, through the state, direct to the settler. The price fixed by the State Land Board of 50c per acre for the land, to cover surveying, etc., and $30 per acre, covering cost of constructing works and settling lands, is all we are allowed to charge, and it is ACTUALLY WORTH AT LEAST $100 AN ACRE THE DAY THE PURCHASER GETS IT.

TERMS, ELIGIBILITY, ETC.

Of the 50 cents per acre for the land, 25 cents is payable at entry and the other 25c at "proving up," within three years. Of the $30 per acre for the water right, one-fourth is payable at time of purchase and balance in nine equal semi-annual payments, at 6 per cent on deferred payments.

Every citizen of the United States, or person who has declared intention to become such (excepting married women not heads of families), may purchase NOT EXCEEDING 160 ACRES of these lands, as soon as the construction company gets the canal ready so that it will carry water to the land to be purchased.

TWELVE MILES OF THE HEAVIEST WORK AT THE HEAD OF THE CANAL IS NEARLY DONE and the company has just added to its active equipment TWO HUGE NEW ERA GRADERS, EACH DRAWN BY A TRACTION ENGINE and capable of completing, each, as high as 75 rods of this large canal per day; also a car-load of big draft horses, $600 worth of harness, etc. The land will be thrown open to purchase, in 5,000-acre parcels, as fast as the canal can be pushed to completion. I HAVE THE EXCLUSIVE LOCATING OF THE LANDS and will begin at once to list applicants who send me a location fee of 50 cents per acre for the acreage wanted, in tracts of 40, 80, 120 or 160 acres. THIS LOCATION FEE OF 50 CENTS PER ACRE IS NOT RECEIVED BY ME ON BEHALF EITHER OF THE STATE OF WYOMING OR OF THE IRRIGATION COMPANY. It constitutes me your agent, to select and locate a tract of the land for you and reserve it for you until you can get out to see it. I will select for all parties, according to my best judgment, the best land not already selected on receipt of fee. When you see the land, you can exchange for any other tract, not then taken, that you may like better, or I WILL PROMPTLY REFUND YOUR FEE IN FULL, IF YOU ARE NOT SUITED WITH ANY OF THE LAND. This fee is not an extra cost. My receipt for it will be received AS SO MUCH CASH ON YOUR FIRST PAYMENT. The first 5,000-acre lot may be ready for entry within the next 60 days. The first parties located may be called upon to go and file upon the land of their choice at any time after December 1st, and will have 30 days in which to do so after receiving notice.

Fruit-Grower readers of last spring will remember that I gave faithful warning that those who wanted some of the land should ACT AT ONCE. SEVENTY-TWO THOUSAND ACRES OF THAT LAND WAS TAKEN IN SIXTY DAYS and many who spoke too late could get none. On the 5th of September just past, TWENTY THOUSAND LAND SEEKERS PASSED THROUGH KANSAS CITY union depot alone. All Western roads have been so flooded on each 1st and 3rd Tuesday of late and the flood will not diminish before late in the spring. Land grows still rarer. A small fee will STAND YOU IN LINE FOR A TRACT OF THE LAND. It will be marvelously easy to let go of it if you don't want it, but you can't get it, except for a bonus, if somebody "beats you to it."

STATEMENT OF MR. IRVINE.

Reprinted from February number.

Judge Gregory has had his office with The Fruit-Grower for nearly three years, and has been known to the manager of this paper for some fifteen years. He resided for many years in Southwest Kansas, an irrigation region, and thus became schooled in its practical workings. In that time he took so active and prominent a part in national irrigation affairs as to become well known to and associated with all those most prominent in that interest. He helped organize the National Irrigation Congress, serving on its executive committee six years. He certainly has had the experience and has the ability to qualify him to make and superintend selections of suitable land for those who may wish to avail themselves of his services. Good irrigable land at the price fixed by the State Land Board in this case cannot but be a prize that is worth winning. Parties who may choose to remit location fees to Judge Gregory and have him select land for them can rely upon their interests being carefully and conscientiously looked after.

JAMES M. IRVINE,
Editor The Fruit-Grower.

I shall print at once a booklet going more into detail as to these lands, also giving bank and other references. Will send these on request, also prompt replies to any questions. Preference will be given, in all cases, to those who PROVE THEIR ACTUAL INTEREST by enclosing location fee.

To encourage quick action I make the following offer: To those who send their location fee BEFORE NOV. 1ST, I WILL MAKE AN ALLOWANCE OF $10 ON EACH 40 ACRES TAKEN, to be credited on the first payment. This would allow $20 on 80 acres, $30 on 120 acres, $40 on 160 acres, or enough to pay expense of going to see the land.

A special homeseekers' rate of one fare plus $2 for the round trip, good for 21 days, can be had, on the 1st and 3rd Tuesdays of each month, via the Burlington system, which is the only line now penetrating the Big Horn Basin.

This advertisement being hastily prepared, doubtless leaves some questions unanswered; but "GET IN LINE" and all will be made clear and satisfactory, or THERE'S NOTHING TO PAY. I am responsible for what I undertake, and first man gets first choice. Address

J. W. GREGORY,
619 Edmond St.,
St. Joseph, Mo.

How the Grand Junction Fruit Is Handled.

In connection with the account of our visit to the Colorado fruit country, it may be well to note some of the methods which have made the Grand Junction Fruit-Growers' Association so successful.

Manager John F. Moore of this association has sent out to the members of the organization some suggestions concerning the preparation of their fruit for market. He urges that the packages be very carefully packed, and that every package bear the name of the grower, also the variety and the grade of fruit contained. Concerning small apples, the circular says:

"I wish again to call your attention to the fact that small fruit will not sell at satisfactory prices, and I know that a great many of our growers are not thinning their fruit as it should be done. Our grade this season for choice apples will be nothing less than two and one-fourth inches in diameter. If you neglect to thin your fruit and it should run below this grade, you must expect us to refuse to handle it. Small apples will not pay freight. From all indications the markets are going to be very good this season for all kinds of fruit, and I am glad to say we are in better position than we have ever been heretofore to realize all your fruit is worth. But for us to realize the best prices we must have the co-operation of all the growers that do business with us. We expect to have a competent inspector at each of our stations, to inspect all fruit shipped by us, and we do not expect our inspectors to be arbitrary, but on the other hand, to advise and instruct the growers how to grade and pack; we will then expect the fruit to come up to specifications."

Another circular, intended for the fruit trade, states that the association will have about 50 cars of summer apples, such as Duchess, Wealthy, etc., and about 650 cars of Jonathan and other winter sorts. All this fruit, Mr. Moore says, "will all be sold f. o. b., quality and grade guaranteed."

Growers in many other sections can well afford to study the methods of this association, which is one of the best in the country.

Praise From Our Eastern Friends.

I have found The Fruit-Grower to be the very best fruit paper published in the country, so far as I know, and I have tried all the papers I know of. I count it of the greatest value to every fruit-grower.—Albert F. Tenney, Ipswich, Mass.

The Fruit-Grower is emphatically the best fruit paper in America, and in many ways it is the best farm and home paper. The make-up is pleasant to the eye, and is readable; and while I do not agree with every writer on every point, the spirit and tone of the articles is fine. We have so many agricultural and country papers that give a hash of mostly useless material, or a picture gallery without regard to material, that it is specially gratifying to find one that breaks new ground and exercises common sense.—E. P. Powell, Clinton, N. Y. (Mr. Powell is the author of "In the Orchard and Fruit Garden."—Editor.)

At this season of the year the man with an apple crop is likely to hesitate as to the manner of its disposition; as to whether he will sell it at picking time or store it for sale later in the winter. The Fruit-Grower has never presumed to advise one in this respect, but on the trip through the Northwest we found the sentiment among the growers there is to sell their fruit at packing time, provided fair prices are offered. The various associations prefer to market their fruit in this way, rather than to store for later sale, and individuals are inclined to this same opinion. All through the West the talk was of higher prices than were paid last year, on account of the Eastern crop being much shorter than it was a year ago. Buyers in Northwest Missouri who have found a number of orchards with good crops are offering $1.50 to $1.75 per barrel for No. 1s and 2s, buyer to furnish barrels, but grower to pick fruit and deliver to packing table. We know of no sales having been made up to time of going to press with this issue.

Now Is the Time to Paint.

Of all seasons of the year, there is no question in our mind but that the Fall season is really the ideal time to do house and barn painting. There are several reasons for this belief:

1st. The weather has usually become settled, and it is not so apt to rain.

2nd. The hot weather is over, which allows the paint to dry gradually without chance of blistering, as it should.

3rd. It is after the season for flies, gnats, and other insects that stick in the paint, ruining the coat.

4th. Owing to the fact that the paint fills up the cracks, it acts practically as a thin rubber overcoat for the building, keeping out a great deal of cold, and making it much easier to heat.

Taking all these things into consideration, we recommend our readers, if possible, to paint in the Fall.

On another page of this paper we are printing the advertisement of O. L. Chase, The Paint Man, who sells his paint direct to the user from his factory, giving two full gallons free to try, and allowing six months in which to pay for it.

Mr. Chase, with this new selling plan, and with his new method of manufacturing paint, certainly has a very attractive proposition. His paint is put up in separate cans; his "Oils"—which is old-fashioned pure linseed oil, being sent in one can, and his paint pigments ground to order, on the day the order is received, and sent in another can, this can being dated the day that it is put up by his factory inspector. This insures an absolutely fresh, made-to-order paint.

Manufacturing his paint this way enables Mr. Chase to give an eight-year guarantee—and he backs this guarantee with a fifty thousand dollar bond. All in all, O. L. Chase, The Paint Man, makes a remarkably liberal offer, and has the correct principle in manufacturing paint. He gets out a splendid paint catalogue, and also issues some small books, one of them entitled, "This little book tells you how to paint." All of his printed matter is very interesting, and before buying paint, we certainly recommend our subscribers to write Mr. Chase, The Paint Man, for printed matter on the question of Fresh Paint. His address is

O. L. CHASE, THE PAINT MAN,
403A Sixth Street, St. Louis, Mo.

KIL-O-SCALE
THE GREAT SAN JOSE DESTROYER
Prof. John B. Smith, Entomologist New Jersey Experiment Station, referring to KIL-O-SCALE said: "An orchard of about 300 trees was so completely cleared that it is almost impossible to find a live scale at this time."
Prof. Taft, Michigan Experiment Station: "KIL-O-SCALE practically destroyed all of the old scale."
Prof. W. G. Johnson, late Entomologist of Maryland, now Editor American Agriculturist, New York: "KIL-O-SCALE was quite effective and trees practically clean."
Dilute proper proportions with cold water and spray. Price in bulk: Barrels and half-barrels, per gallon, $1.00; 1-gallon cans, $1.50; 5 gallon cans, $6.25; 10 gallon cans, $12.50.
GRIFFITH & TURNER CO., 209 N. Paca St, Baltimore, Md.

Gardening Department

Prepare for Winter.

Now is the time to make everything snug and secure for winter. Get the garden all cleaned off and fall plowed. Set that asparagus bed, and get a good place ready for the strawberry bed that you will set in the spring. By the middle of October the potatoes should be all dug and in the cellar, and all the other vegetables too should be under cover.

How to Store Stuff for Winter.

Potatoes need a cool cellar, not too dry. If too dry the potatoes will wilt and shrivel, and if too warm, they will sprout. I try to keep mine at about 40 degrees, although an occasional drop to 33 degrees does no harm. Keep all the light out, too, as light will cause the potatoes to turn green and spoil them for eating. They should not lie against the wall of the cellar either, or they will draw warmth and moisture and sprout. I build a false wall clear around about four inches away from the main wall, so there will be air circulation back of it all the time. Same way with the floor. I build a false floor six inches up from the solid floor. This gives a circulation of cool air all around the potatoes all the time, and with this precaution they can be piled up as high as you please. In my cellar last winter I had them nine feet deep and no harm resulted. During the fall and early winter open the outside doors at night and close them in the day time, so as to keep the cellar as cool as possible.

Sweet potatoes need entirely different treatment. They must be kept absolutely dry and quite warm. If they are put in a place that is cool or moist they will rot at once. They can best be kept dry by packing them in road dust or very dry shavings, and should be kept in a warm room or a cellar that has a furnace. Professional sweet potato growers have houses especially built for the purpose, where the heat can be carefully regulated, but any one can keep them if a warm dry place can be provided.

Onions can stand considerable cold if they are kept dry. I have had them go through a considerable freeze and take no harm. Best way is to have shallow trays or crates to put them in, and pile these in a dry, cool upstairs room or loft. When hard freezing weather comes, cover them over with hay or some other covering that will keep the temperature fairly uniform. I have also had good success keeping them in a pile outside covered with hay and dirt. They freeze up solid and stay frozen till spring. Generally they come out in the spring in good shape, if they are allowed to thaw out gradually, but I have some times lost them entirely. In an ordinary cellar onions are apt to sprout too soon, but for temporary purposes in the early part of the winter the cellar does fairly well.

Beets, turnips and carrots, should be packed in moist dirt or sand and put in the cellar. If not packed in dirt or sand they will shrivel up and become so tough as to be unfit to eat. The moisture will not rot them, but will keep them in perfect condition for eating. Mangel wurtzels or cow beets do not dry out so easily as the table beets, and so I pile them up along the wall like stove wood, where they will be convenient to get at to carry out to the cow in the winter.

Parsnips and salsify can safely be left stand out in the garden till spring, as freezing does not hurt them in the least. The only trouble with this plan, however, is that it is a hard matter to get out a mess of them in the winter if we are hungry for them. We simply have to wait till the ground thaws in the spring. For this reason I always dig at least a part of the crop in the fall and store in the cellar packed in moist dirt or sand. Then I can get at them in the winter whenever wanted. Also parsnips are always good sale during the winter and if they are dug and in the cellar they can be marketed at any time.

Celery can be put away in the cellar and kept most of the winter. I take it up, roots and all, and pack in standing position in a box of dirt. Just set this on the cellar floor, and the celery will keep on growing all winter and will be tenderer and whiter than any grown out doors.

Cabbage must be kept very cool, and moist enough to prevent drying out and wilting. The best way I have ever found is to turn the heads upside down in a trench outdoors. Bank up the dirt around the inverted stems till it is deep enough to protect the cabbage from the worst hard freezing. I have often had cabbage keep all winter this way and come out in the spring in perfect shape. Another good way is to sink a barrel outdoors and pack it full of the trimmed heads of cabbage and cover it over with hay. In fact any plan that will keep the cabbage near the freezing point and keep it moist, will be all right.

Squashes and pumpkins must be kept dry and cool. Moisture is fatal to them. While a cool place is the best, they will often keep all right in an ordinary room or other warm place if it is dry.

Flower bulbs of most kinds are very easily kept over. Gladiolus and dahlias can be handled exactly like potatoes. They will keep anywhere. Tube roses and cannas are more like sweet potatoes in their requirements and must be kept warm. Cannas have always given me more trouble than the other bulbs and I have sometimes lost them, but if the bulbs are cut apart and stored in a warm place in road dust or something of the sort, they will generally keep all right. Tulips, hyacinths and lilies should be set out in the open ground in the fall and left out.

Tulips, Hyacinths and Lilies.

Now is the time to set them out. Every spring I have lots of letters from people wanting to buy tulip and hyacinth bulbs to set out. They cannot be had in the spring at all and must be set in the fall. Anytime in October or November is all right. Set them three or four inches deep and mulch the ground a little, and they will come through all right and bloom as soon as the snow is off. If you want a bed of them next spring, get a hustle on you and get the bulbs out at once.

Lay in Seed Potatoes Now.

This is the very best time of the year to lay in some good seed potatoes for next spring. They are always cheapest at this time of the year, and are always in good condition. They will ship without bruising and the cool weather between frost and freezing insures their arriving in good condition. It is important that early varieties of potatoes should be planted as early as possible in the spring, but if you wait till spring to buy you may be late in getting them planted. Get them all ready this fall, whether you buy them or pick them out of your own crop. Pick them over carefully, selecting just the nicest ones, and then nail them up tight in a crate till spring. Then when planting time comes they will be there ready.

Varieties of Melons.

I had over forty varieties of water melons on the trial grounds this year and, as the saying is, I "learned a heap." It was really hard, though, to say that any one variety was absolutely the best. They were all good. The first to ripen were Harris' Early, Cole's Early and Phinney's Early. They are all about equal in size. If any advantage in earliness and quality it was with the Harris Early. Oklahoma seed proved better than either Nebraska or Iowa seed, and in fact this held true all along the line.

The largest melons I had and the best quality, too, were an improved strain of the Kleckley Sweets, sent to me by John W. Minor of Rocky Ford, Colo. They are a little larger than the orlginal Kleckley, a little bigger waisted, more uniform, and if possible, better quality. It is a good example of the value of intelligent selection.

I consider the Kleckley and especially this improved strain, the best melow now known, but it is no good to ship, as it is too tender. It will hardly bear hauling to town sometimes. For shipping I would advise the Sweetheart, Nabob, and Alabama Sweet. All are good quality, large, uniform, and good yielders.

I had one row of the old fashioned yellow meated melon, but they were practically a failure. Guess they have "run out."

A friend in Asiatic Turkey sent me seed of the best variety of melons grown there. They are all right on quality, but too small. The largest were not over six inches long. A good sized Turk would have to start with about three to get a good taste.

HENRY FIELD.

Shenandoah, Iowa.

Burpee's Golden Bantam Corn.

I am much interested in the Garden Department of the September Fruit-Grower, especially the report of sweet corn trials. I am a market gardener and fruit-grower in a small way and am on the lookout for the best of everything. In the list of sweet corn no mention is made of Burpee's Golden Bantam corn. I got this variety last spring and like it better than any other sweet corn I have ever tried. It is yellow, early, and of most excellent quality; the quality is decidedly the best of any very early corn. I will send some of the seed to Mr. Field, and would like to have samples of seed of the following which are mentioned in the report: White Mexican, White Evergreen and Pink Country Gentleman; would also like sample of the Pink Evergreen and the new green pod bean. P. J. MURPHY.

(No address is given in this letter, so Mr. Field will not know where to send his samples. Send your address, Brother Murphy, to Henry Field, Shenandoah, Iowa. We indorse what is said concerning Golden Bantam; it is a most excellent early corn; small ears, but very sweet and good. It is sold by Burpee & Co., Philadelphia, Pa.—Ed.)

Get This Gold Pair FREE

Listen! In the past year I received thousands of letters from spectacle-wearers all over the world, expressing their thanks and appreciation, and the one I give here is a good sample of what they all say. The Reverend O. C. Clark, one of the most prominent ministers in the State of Illinois, says: "I highly appreciate your famous "Perfect Vision" spectacles, for I can honestly and truthfully say that with them I now read the finest and smallest print both day and night, just as well as I ever did in my life Your spectacles are truly marvelous." Now I have no doubt but that the testimony of this noted minister of the gospel is sufficient proof to every fair minded spectacle-wearer that my famous "Perfect Vision" spectacles are really **THE BEST IN THE WORLD**, as I claim.

But I Want YOU to Judge Them For YOURSELF

and thereby get **YOU to send me YOUR testimonial also.** Hence, before placing them on the market for sale at their regular price of $5 per set, I make you the following special offer which will actually save you $4 cash: Just write me your name and address and I will mail you my Perfect Home Eye Tester, free, with which you will be able to test your eyes at your own home, perfectly. Then when you return me the Eye Tester with your test, I will send you a complete five dollar family set of my famous "Perfect Vision" spectacles for only $1 (which is an actual saving of $4 to you), and this will include a pair of my handsome Rolled Gold Spectacles absolutely free of charge. This set will last yourself and family a lifetime. With these famous "Perfect Vision" Spectacles of mine you will be able to thread the finest needle and read the smallest print, both day and night, just as easy as you ever did in your life, and this even if your eyes are so very weak now that you cannot read the **HEADLINES** in this paper. I also hereby agree to return you your dollar cheerfully if you **YOURSELF** don't find them to be the most perfect-fitting, clearest and best you have ever bought anywhere, at any price. Write today for my free Home Eye Tester. Address my company as follows:

DR. HAUX SPECTACLE COMPANY, Haux Building, ST. LOUIS, MO.

I WANT AGENTS ALSO And any man or woman (also storekeepers), without any previous experience whatever, can fit the weakest eyes with my Improved Home Eye Tester. This is so simple that any one can work it with perfect satisfaction and easily earn from $25 to $100 weekly selling my famous Perfect Vision Spectacles, either in their own homes, traveling or in stores. My agents need no license as I furnish necessary documents with the Agent's Outfit.

(NOTE.—The above is the largest Mail Spectacle House in the United States and perfectly reliable.)

Vincennes Nurseries

Vincennes, Ind.

W. C. REED, PROPRIETOR.

Apple, two and three year. Special prices on large orders of Ben Davis and other commercial varieties.

Standard Pear, one and two year. Fine lot Keiffer.

Cherry, one and two year.

Catalpa and Black Locust Seedlings.

Roses, Shade Trees, etc.

Send us a list of your wants. Personal inspection invited.

TREES, PLANTS, ETC.

We shall have for Fall delivery One Year Old and June Bud Peach Trees, One and Two Year Old Apple, Pear, Cherry and Plum Trees, Grape Vine, Shrubbery, Roses, etc. Also all kinds of Small Fruit Plants. Strawberry Plants by the Million. Send for catalogue and price list before you buy.

CHATTANOOGA NURSERIES, CHATTANOOGA, TENN.

Our Specialty **BOXES** FOR PACKING Green or Dried **FRUITS** Our Specialty

If interested, write us for prices. CALIFORNIA PINE BOX & LUMBER CO., Rialto Bldg., San Francisco, Cal.

Fruit and Shade TREES

Silver Maple, 6 to 8, 8 to 10, and 10 to 12 feet. Catalpa Speciosa, 6 to 8, 8 to 10, and 10 to 12 feet. Ash Leaf Maple, 6 to 8, 8 to 10, and 10 to 12 feet.

A full supply of **Nursery Stock, Apple, Pear, Plum, Cherry, Peach, Grape, Currant, Raspberry, Weigelia, Snowball, Lilac, Forest Tree Seedlings, etc..**

Write to us today, state your wants and let us make you very low prices.

J. K. HENBY & SON
GREENFIELD, INDIANA

The Right Place to Buy Trees

is where you can get the best trees at right prices. This you can do by buying them from us. Our trees are propagated direct from choice bearing, reselected trees; they will produce fruit of highest color, richest flavor, most uniform size, and the trees are hardy, early and prolific bearers. We guarantee our trees and prices to please. If you want an apple that will keep until the new crop comes in, plant the Missing Link apple.

Missing Link Apple Company
Nurserymen, Clayton, Illinois.

Graves Peach

An early yellow freestone, ripening a week before Crawford's Early. Trees from the originator have seal attached. Prices free.

W. J. GRAVES, Originator
PERRY, OHIO.

Hardy Northern Grown Trees and Shrubs

Healthy, vigorous, productive and free from insect pests. NONE BETTER or cheaper. No traveling salesman can compete with us in price, quality considered. Get Free Catalogue.

GEORGE H. WHITING NURSERIES, Lock Box No. 1110, Yankton, S. D.

Kansas City Nurseries

A general line of Nursery Stock, Wholesale and Retail. A heavy stock of Concord and Moore's Early Grapes, one and two years. Small Fruits, Rhubarb, Asparagus, Ornamental Trees and Shrubs, Vines, Roses, etc. We can ship direct to almost any point without transfers. Office 233 Rialto Building.

BLAIR & KAUFMAN, Kansas City, Mo.

Fredonia Grape Vines

ARE THE BEST

We are growing a million vines, and sell at wholesale and retail. Stock well graded and warranted true. Plant the BEST and buy of first hands. We solicit your trade. Catalogue free.

Foster & Griffith, Fredonia, N. Y.

Fruit Trees

from Beverly, Ohio, Nursery

All kinds Trees and Plants. Special prices on Apple and Peach Trees. Careful attention to Mail Orders. Catalogue Free. Agents wanted. Wholesale and Retail.

W. T. MITCHELL & SON, Beverly, O.

Choice Pecan Groves

If you want the greatest success in planting Pecan groves, plant the large 20th Century Pecan Nuts or the Trees. You probably saw them at the St. Louis Fair. If you don't care for profit, plant the small Pecans. They pay, but not as well as the best. Send for circulars.

TEXAS SEED PECAN COMPANY, Fort Worth, Texas.

Black Locust

Catalpa, Mulberry, Osage and Honey Locust Seedlings at very low prices. Write us, stating quantities wanted.

FAIRBURY NURSERIES,
Box 2. Fairbury, Nebraska.

Save Money

By saving time and labor in handling your apple and potato crop, by using Garman's Bushel Crates. No better crate made. Prices low.

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Bristol, Ind.

PATENT YOUR IDEAS

$100,000 offered for one invention; $8,500 for another. Book **"How to Obtain a Patent"** and **"What to Invent"** sent free. Send rough sketch for free report as to patentability. We advertise your patent for sale at our expense.

Chandlee & Chandlee, Patent Attorneys, 995 F. Street, Washington, D. C.

Source of Trees for Orchard Planting.

The following paper on the above subject was read before the meeting of the American Pomological Society at Kansas City, by Prof. O. M. Morris, of the Oklahoma Experiment Station.

What varieties of the different kinds of orchard fruits shall I plant? is the question most frequently asked by orchard planters in Oklahoma, and the next question is usually where shall I buy my trees? Shall I send north, south, or east for them? The question of source of nursery stock is a question, however, that can be answered in quite definite terms. I can not say that the answer to this question will be the same in each state, but I believe that certain parts of the solution will be applicable to all.

Oklahoma has used nursery stock from practically all of the states north and east of her, and several of the Southern states. This buying from so many sources has been brought about by two causes. The entire country was settled in a year by people from all parts of the United States. There was no home grown nursery stock and people were inclined to plant the old familiar varieties and sent to the nurseries in their native states for trees. Another cause was the fact that many nurserymen looked upon Oklahoma as a new and unoccupied field for trade and sent agents to work the new territory. These conditions resulted in much harm to the orchard planters. The people who sent to their old home nurseries bought varieties that were poorly adapted to their soil and climate. The shipping facilities being poor, the trees suffered in transportation. They were frequently left at the railroad depots for weeks before being hauled overland to their final destination. The tree dealers and unscrupulous nurserymen delivered trees untrue to name, and ruined by crown-gall, aphis, borers, winter-killing and all other troubles to which the trees of the unskilled nurseryman are heir. Tree dealers went so far as to buy the cull trees of the nurseries and label them and sell and deliver them for good trees.

Another condition that contributed largely to the failure of the early orchards was the haste of the orchard planters. Farmers bought and planted trees as soon as the prairie sod was broken.

The foregoing facts are given that you may understand why this question of the source of nursery stock for orchard planting in Oklahoma has become so prominent. The trees purchased from nurseries in New York, Ohio, Massachusetts, Georgia, and other eastern states have given even better results than the average trees from the adjoining states.

The first few years of orchard planting established a few good orchards and a few have one-fourth to one-half a stand of good trees. The study of the old orchards has been very difficult on account of the exchange of real estate. I think I am safe in saying that 80 percent of the farms, on which orchards were established soon after settlement, have been sold in the last twelve years. Few farmers keep a map of their orchards and when the farm is sold the new owner very seldom secures a map of the standing orchard.

The first test of the value and vitality of nursery stock is transplanting. The pereent of trees that died before the end of the second season's growth after transplanting was very large in the first orchards set. A comparison of the trees grown in the different states shows no advantage in favor of any state. The trees from different nurseries in the same state show decided differences in favor of certain nurseries. The trees from good nurseries in New York and Pennsylvania have given practically as good results as trees from Kansas and Missouri, or even home grown trees. In the study of this branch of the subject I notice that there are three factors of influence. 1st. The tree, its freedom from blemishes, vigor, and vitality when packed for shipment; 2nd. The manner in which the trees are packed and shipped. 3rd. Care of the trees by the planter after they are received. The trees bought from good nurseries in the oldest states have usually graded higher, and have been nearer free from insects and diseases than trees grown at home. There are now several good nurseries in Oklahoma and their trees have withstood transplanting well. The tree grown in Oklahoma and Massachusetts have shown very little difference in vitality in favor of the home grown trees.

The best methods of packing for shipment are practiced by Eastern nurseries. I have unpacked trees and plants shipped from the New England states that were in better condition than trees from Kansas and Missouri. Trees poorly packed are sure to be injured if shipped but a day's journey. The trees when received by the planters now receive better care than they did between 1890 and 1895. And this is showing in the better stands of trees received in the orchards.

The study of this subject brings me to the conclusion that the trees that are the best grown and developed, and reach the planter in the best condition are the best trees for planting; but with these conditions being equal, the home grown trees are the best.

The hardiness of fruit trees in Oklahoma is shown by their ability to endure drouth, hot sun and wind. The trees bought in the North and East have shown great variation in this respect. The Northern and Eastern grown trees are usually headed much higher and for that reason are at a great disadvantage, but when such trees are headed low they seem to be as hardy as the home grown nursery stock.

The grape and peach crops have been cut short by the winter-killing of the buds. This is a case, however, of the paramount importance of varieties and not of source of nursery stock. Trees and vines of given varieties from different states show no appreciable difference in their ability to carry their buds through the winter.

The date at which the trees come into blossom when transplanted from the extreme north and south to a central ground has not been satisfactorily worked out. The notes on this point seem to indicate that for a few years the trees transplanted from the north blossom earlier than those from the south, but by the time an apple tree comes into full bearing age it has adapted itself to its new location and is normal in this respect.

The character and quality of the fruit of trees propagated in different localities has received some attention, but it has been very difficult to determine whether certain qualities were produced by the character of the soil and method of cultivation, individuality of the tree, or is a result of the source of the tree. I am aware that climate will cause varieties to vary and that a given variety of fruit in New York or Georgia might be quite different from the same variety in Oklahoma and Kansas, but I am convinced that the present system of transporting and wholesaling nursery stock will keep this question from influencing the value of nursery trees from any particular locality.

The Grape Crop for 1905.

For a number of years the grape crop has been neglected in the Missouri Valley, many vineyards having been badly damaged by the cold winters of a few years ago. The crop of 1905, however, will stimulate interest, for it was not only good in the Missouri Valley, but prices were good. In the vicinity of St. Joseph the crop was one of the best which has been raised for a number of years, and prices were very satisfactory indeed. The quality of the fruit was extra fine, the berries being larger than for some time and much sweeter.

One of the best crops raised around St. Joseph was that of Martin Steidel. Mr. Steidel's Concords were the largest we have ever seen of this variety—Indeed, his Concords were often mistaken for Eaton, until one ate one of the berries, then it was found the variety was Concord. Mr. Steidel reports his crop as a good one, and all his fruit was sold at good prices.

Another good crop was that of D. A. Turner, who had a profitable season with his grapes. Mr. Turner has been very successful with Moore's Early, and gets this variety on market early in the season. He also grows Green Mountain (Winchell), which is not only a very early white grape, but is also a very good one in quality. Cottage is another favorite with Mr. Turner. Mr. Turner plants Moore's Early on very rich soil; it will not do well on thin land.

The profitable grape crop this year will undoubtedly cause growers to take more interest in this fruit.

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If you want a beautiful Piano or Organ.

Write your name and address on the coupon printed below, and also state which you would rather have—a PIANO or ORGAN, and I will send to you by return mail

FREE

of Charge and Postpaid, the most remarkable **Piano or Organ Buying Proposition** that was ever placed in your hands. Also the most **Complete Piano and Organ Catalog** ever printed, beautifully illustrated and describing the **Finest** and **Most Artistic Pianos and Organs** that are manufactured to-day. I will save you from $25. to $50. on an organ and give you over a **Year to Pay Me.** I will save you from $100. to $200. on a Piano and give you over **2 Years Time to pay Me.** No matter who you are, where you live, or what your occupation is, my **Buying Plan** is open to you. Anybody that is honest can have one of my instruments and I will trust him for my pay. Send coupon to me to-day and let me show you how easy it is to have a beautiful instrument in your home. Let me show you how my selling direct to you saves you many dollars. Hundreds of homes are accepting my wonderful offers, each are admitting that my plan has solved them the problem of buying. Address your letter to

The PIANO and ORGAN MAN

J.B.THIERY, The Piano & Organ Man, MILWAUKEE, WIS.

J. B. THIERY, MILWAUKEE, WIS.—Dear Sir—Send to me FREE by mail your buying plan and catalog as advertised in Western Fruit-Grower

I WANT..... PIANO OR ORGAN

NAME.....

.....

Forest Tree Seeds and Seedlings

Catalpa Speciosa, Black Locust, Ash, Birch, Red Bud, American Persimmon, Elms, Tulip Poplar, Russian Mulberry, Buckeye, Sycamore, Black and Japan Walnuts, California Privet, Wistarias, Virginia Creeper, Yucca and various other Seedlings, Tree and Shrub Seeds. Send for Trade List.

Forest Nursery & Seed Co.
R. F. D. 2, McMinnville, Tenn.

Dont Waste Money

Get prices of Tecumseh Nurseries before you buy

Nursery Stock

We can fill your wants in everything in the tree or berry line.

Hundreds of pleased customers. Catalogue free. Address

Tecumseh Nurseries
CEDARVILLE, OHIO

Pecan Trees & Nuts

Gold and Silver Medals awarded our Nut and Tree Exhibits, St. Louis, 1904. High grade budded and grafted trees of all best varieties. 770 acres in Pecans. Write for catalogue "A," **with which is incorporated a valuable treatise upon Pecan Culture.**

THE G. M. BACON PECAN CO., INC., De Witt, Georgia.

1,875,000 Plants

True to Name Free From Disease

Including King, Cardinal, Miller, Brilliant and Loudon Red Raspberries; Mersereau, Eldorado, Early Harvest, Ward and Rathburn Blackberries; Lucretia, Premo, Austin and Rogers Dewberries; Kansas, Ohio, Conrath and Cumberland Black Raspberries; Wineberries, Huckleberries, Loganberries, Juneberries, etc., etc. Lowest prices on earth for first-class plants.

SELIGMAN (MO.) NURSERIES.

THE GUINN PEACH

Supersedes Elberta in time of ripening and profitableness. Write

Guinn Peach Co., Sherman or Rusk, Texas

With Our Advertisers

C. & M. Wild, Ssrcoxie, Mo., peonies of all kinds.

Empire Stove Mfg. Co., St. Louis, Mo.—Stoves of all kinds.

N. P. Sowle, New Bedford, Mass., advertises a crow weather vane.

Berkshire pigs are offered by W. H. Coffman, Bluefield, W. Vs.

Apple trees are offered as a specialty by G. W. Tribble, Billings, Mo.

Good farm property st right prices—J. H. Lipscomb, Kansas City, Mo.

Wire fencing of various patterns furnished by Kitselman Bros., Muncie, Ind.

Euos W. Dunham, Stevensville, Fich., furnishes nursery stock of all kinds.

St. Louis Basket & Box Co., St. Louis, Mo., furnish wooden veneer tree wrappers.

O. K. Nurseries, Wynnewood, Okla., offer specisl inducements to new customers.

Nursery trees of all kinds are offered hy Tecumseh Nurseries, Cedarville, Ohio.

If you want crates for apples, potatoes, etc., write Garman Mfg. Co., Bristol, Ind.

Thomas R. Haman, 1614 E. Olive St., Baltimore, Md., has peach seeds for sale.

The Dempster Mill Mfg. Co., Beatrice, Neb., advertise windmills of all kinds.

W. A. Mason, Clinton, Ky., advertises the Three W strswberry—said to be s wonder.

Coiled Spring Fence Co., Box 125, Winchester, Ind., furnish fencing for all purposes.

Dr. Haux Spectacle Co., St. Louis, Mo., have a proposition for those who need spectacles.

H. P. Lockwood, Kansas City, Mo., has farm property in the Texas coast country for sale.

Fruit and shade trees of all kinds are advertised by J. K. Henby & Son, Greenfield, Ind.

Cider presses, both hand and power, are furnished hy the G. J. Emeny Co., Fulton, N. Y.

"Freight paid to your station" is the proposition offered by Roeder Nurseries, Osceola, Mo.

To prevent hogs from rooting, write W. I. Short Co., Quincy, Ill. They have a preventive.

Mail orders for nursery stock receive careful attention from W. T. Mitchell & Son, Beverly, Ohio.

Isaiah Lower, R. F. D. No. 33, Barherton, Ohio, has some gladioli hulbs to close out at a bargain.

Bovee Grinder & Furnace Works, Waterloo, Iowa, advertise a furnace which should interest home-owners.

Rhodes Mfg. Co., Grsnd Rapids, Mich., advertise their double-cut pruner which has been so generally used.

Nurserymen's plate books for all kinds of fruits are furnished by M. Brunswick & Co., Rochester, N. Y.

If you want to know about squahs and their cultnre, write Eastern Squah Co., 32 Hawley St., Boston, Mass.

Want boxes for apples or other fruits? California Pine Box & Lumher Co., San Francisco, Cal., furnish them.

W. Smith Grubber Co., LaCrosse, Wis., offer grubbers which will help to clean up those stumps before spring.

Want a knife sharpener? See what Two-edge Mfg. Co., 217 E. Junction Bldg., Kansas City, Mo., has to offer.

Nursery stock at wholesale or retail. Full line of stock at right prices. Kansas City Nurseries, Kansas City, Mo.

Brown Fence & Wire Co., Clevelaud, Ohio, begin the season's advertising campaign. The firm manufactures wire fencing.

If you want asparagus roots—which should be planted this fall—or grape vines, write Rosedale Nurseries, Rosedale, Kan.

Wolverine Nurserles, Paw Paw, Mich., hsve advertised in The Fruit-Grower for years. Full line of stock, at wholesale or retail.

Small fruits of all kinds, including all the newer raspberries and blackberries, are offered by Seligman Nurseriea, Seligman, Mo.

F. G. Carroll's Work, Station D, Chicago, have some bargains in roof.ng, pipes, feucing, etc., which are advertised in this issue.

Strawherry plants, raspberry plants and grape vines and fruits of that klud are offered by Elmhurst Nursery, Argentlue, Kaus.

Strawberry plsnts can he shipped from Fruitful Plant Farms, Sherman Heights, Tenn., for fall or spring plantiug. Send for catalogue.

Pecan trees and nuts are in demand and supply is limited, but G. M. Bacon Pecau Co., DeWitt, Ga., can fill orders for trees or nuts.

Currant and gooseberry cuttings are offered in quantity by W. N. Scarff, New Carlisle, Ohio, who also has a full line of small fruits.

All kinds of fruit tree stocks are offered by C. C. Abel & Co., 114 Broad St., New York, representing some of the best European firms.

Blsck locust seedlings, catalpa seedlinga, mulberry, osage orange, etc., are furulshed in any quantity by Fairbury Nurseries, Fairbury, Neb.

Fredonla, N. Y., is famous for its grape vines, and Foster & Griffith of that place advertiae that their stock is as fine as was ever grown.

Barnes Nurseries, Grosbeck, Ohio, have a full line of nursery stock, and will send free catalogue and price list to those who ask for it.

M. Campbell Fanning Mill Co.'s sdvertisement tells about the fauning mill made by thia company. Great thing to insure planting clean seed.

Jackson County Nursery, Lee's Summit, Mo., offers specisl inducements for early orders for nursery stock. This matter is worth investigating.

Do you know about using Ivory soap as an insecticide? It is effective for plant lice, etc.—snd besides, it is the best soap for all other purposes.

Stockmen and those who want to know about stock should send for free ssmple of Blooded Stock, Box 219, Oxford, Pa. Subscription, 25c a year.

Wooden veneer tree wrappers protect agalnst rabbits, mice, etc. Burlington Basket Co., Burlington, Iowa, furnish these wrappers in any quantity.

Riverside Nursery Co., Confluence, Pa., offer all kinds of nursery stock, but announce a very fine stock of York Imperial apple trees as a specialty.

New Haven Nurserles, New Haven, Mo., Incresse their space this month to tell Fruit-Grower readers about their large stock of trees and plants.

Page Woven Wire Fence Co., Box 3267, Adrian, Mich., manufacture one of the best lines of wire fencing in this country. Catalogue snd booklet free.

If you waut apple trees, write Geo. W. Sallee, R. R. Ave., and Broadway, St. Louis, Mo. Mr. Sallee makes a specialty of apples, but has a full line of stock.

A full line of nursery stock, with particular attention to apple and pear seedlings, forest tree seedlings, etc., is offered by Peters & Skinner, North Topeka, Kan.

Tennessee Wholesale Nurseries, Winchester, Tenn., handle a full line of uursery stock, but make s specialty of peach trees, with special attention to June buds.

J. M. Vandervort & Son, Wilmington, Ohio, offer a full line of nursery stock, aud send out a new plum as a premium. Claimed to he a regular and heavy bearer.

Haa your horse indigestion or sny other stomach or throst trouble? Write snd ask Newton Remedy Co., Toledo, Ohio, about a remedy which has beeu very succesaful.

Vincennes Nursery, Vincennes, Ind., offers a full line of uursery stock, with particular attention to the staudard sorts—all well grown snd carefully packed for shipmeut.

The Monarch Grubber Co., Lone Tree, Iowa, manufacture a stump puller guarsnteed to stand a strain of 250,000 pounds. If you wsnt to get rid of stumps, write this firm.

If you need a stump puller or grubber, write Hercules Mfg. Co., Centerville, Iowa, for literature describing the Hercules Stump Puller. Now is the time to attend to this matter.

If you have a hoy or girl who wants to go to business college this winter, write Lincolu Business College, Lincoln, Neb., for free catalogue telliug what that school has to offer.

Forest tree seeds and seedlings of all kinds are furnished in auy quantity by Forest Nursery & Seed Co., R. F. D. No. 2, McMinnville, Tenn. If interested, write this firm.

Best Street Light Co., 277 E. Fifth St., Cauton, Ohio, have a street light for city or farm use which should interest Fruit-Grower readers. Descriptive matter sent free.

Missing Link Apple is one of the longest-keeplug aorts—sold by Missing Link Apple Co., Clayton, Ill. This company advertises trees propagated directly from bearing trees.

It's poor economy to put cider or vinegar in leaky packages. Write Southern Cooperage Co., St. Louis, Mo., about getting barrels or casks which are all right in every way.

Texas Seed Pecan Co., Fort Worth, Texss, offer trees and seeds of the Twentieth Century Pecan, which created auch a favorable impressiou at the St. Louis fair last year.

Boomer & Boschert Press Co., 473 West Water street, Syracuse, N. Y., manufacture a full line of cider presses of any size desired. If you waut anything in thia line, write them.

Virginia has some of the best fruit soils in America, and G. W. Koiner, Commissioner of Agriculture, Richmond, Va., seeks to interest our readers in the same. Write him for full information.

Chattanooga Nurseries, Chattanooga, Tenn., have always made a specialty of peach trees and strawberry plauts, and have a full line of these. But all other kiuds of stock can also be furnished.

Cherry trees have always been a specialty with Knox Nurseries, Vincennes, Ind. The one-year trees offered by this firm are very fine—we know, for we saw them. If you want cherry trees, write them.

J. A. Cauuedy Nursery & Orchard Co., Carrollton, Ill., particularly desire orders for fall delivery. Ground is in good condition to plant, in the Middle West, aud this propositiou is worth investigating.

H. E. Hessler Co., Syracuse, N. Y., did much business with our readers last season, furnishing mail boxes for persons on rural delivery routes. The advertisement appears again this month. Catalogue free.

Audrae & Sons, 869 W. Water st., Milwaukee, Wis., have a booklet on farm telephone lines which they will send free to those who ask for same—tells all about how to make them, material necesaary, etc.

Bulhs for spring blooming should he planted in October, and our readers should write at once for catalogue of John Lewis Childs, Floral Park, N. Y. Thirty bulbs and catalogue will be sent prepaid for 10c.

Apple seedlings, apple trees and apple grafts have always been a specialty with Youngers & Co., Geneva, Neb., and this line is advertised in The Fruit-Grower, together with catalpa and black locust seedlings, etc.

Irrigon, Ore., got strawberries and melons on markets very early this aeason—this section is to the Northwest what East Texas is to the Middle West: It is the early market—and the early market gets the coin.

The American Electric Telephone Co., Englewood Sta., Chicago, Ill., particularly want to hear from those who desire to put in private or mutual telephone lines. If interested along this line, write the company.

Henry Field, Shenandoah, Iowa, recommends buying seed potatoes in the fall, so they will be ready in early spring when wanted. He makes special prices to those who will lay in their stock of seed potatoes this fall.

Fruit-Grower readers should know that E. G. Mendenhall, Kinmundy, Ill., is prepared to furnish Clark's Cutaway harrows in all sizes, as well as any of the other styles of cultivators made by Clark of Connecticut.

Buggies and sewing machines are offered as specialties by the Mutual Mail Order System, Springfield, Mo., but this institution sells all kinds of merchandise, and will send catalogue No. 2 free to those who ask for same.

Montgomery Ward & Co.'s new catalogue is out, and it's better than ever before. Fruit-Grower readers can save money by studying this catalogue and ordering from it. See advertisement on page 6, and send for a copy.

Everyone who owns a horse should know about Gombault's Caustic Balm, made by Lawrence-Williams Co., Clevelaud, Ohio. Said to be invaluable for rheumatism, sprains, sore throat, etc. Descriptive circulars free.

Hardy trees for the North are grown by Geo. H. Whiting, Yankton, S. D., who has built up a good trade in the Northwest. Fruit-Grower readers who want stock suitable for the most severe climate should write Mr. Whiting.

One of the largest nursery establishments in America is that of Storrs & Harrison Co., Box 28, Painesville, Ohio. This firm handles all kinds of nursery stock, seeds, etc., and will send free catalogue to those who ask for same.

Peach pits are a little scarce this year, on account of the shortage of the crop. Franklin Davis Nursery Co., Baltimore, Md., have some of last year's crop, which will crack 90 to 95 per cent good. Samples will be sent to those interested—but write soon, for the supply is short.

A young man at Shenandoah, Iowa, husked over 200 bushels of corn in ten hours last year. If you want to know about the wrist-lets, finger pegs, etc., which he used, write to B. N. Thomas, Shenandoah, Iowa, who has them for sale.

Mann's Bone Cutter is one of the best bone cutters on the market; no poultryman can afford to get along without one. Write F. W. Mann Co., Box 108, Milford, Mass., for catalogue, for now is the time when one should have one.

Stoves of all kinds, for all kinds of fuel, are furnished by Marvin Smith Co., Chicago. This firm handles many other lines of goods, and issues a general catalogue, as well as a special catalogue of stoves. Prices are right and the firm reliable.

Williams' Shaving Soap has been the standard for many years, and it is today used hy 95 per cent of the barbers. Could one ask for a higher recommendation? Free trial sample will be sent you for 2c, if you write J. B. Williams Co., Glastonbury, Conn.

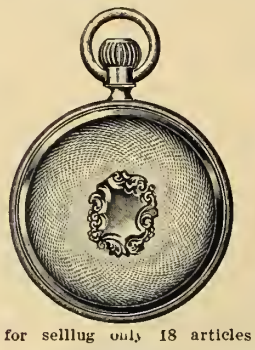
The season will soon he here for purchasing incubators for use during the coming winter and spring. M. M. Johnson Co., Clay Center, Neb., are on the ground early, and

FREE

Dolly is not a small, cheap doll as is seen in the toy stores, but is a great Big Beauty, with genuine Bisque head, feet and arms; and a strong, well made body. She turns her head, moves her arms and legs, and goes to sleep the same as you do. (Her eyes close automatically when you lay her down.) She has large expressive eyes, pearly teeth, rosy cheeks, and natural curly ringlets. She is completely dressed from head to foot. Her hat and dress are trimmed with lace and ribbons. She wears shoes and stockings that you can take off and put on, and set of underwear. We give this DOLL together with the Beautiful Ring for selling only 18 articles of jewelry at 10 cents each.

The ring is Gold Filled, Tiffany style setting, in which is set an imported flashing stone, cut to closely resemble a genuine Diamond. We warrant it to wear and give entire satisfaction. We send this ring (any size) carefully packed in a plush-lined box FREE WITH EVERY DOLL OR WATCH.

DO NOT SEND ANY MONEY, just WRITE US for the 18 jewelry novelties. Sell them at 10 cents each and return us the amount, ($1.80) and we will send you AT ONCE the DOLL and RING, or WATCH and RING, FREE.



THE WATCH is fitted with a 16-size American movement, that runs 30 hours with one winding, has hour, minute and second hands, and weighs, complete with case, less than 3 ounces. The cases are fine GOLD PLATE FINISH, and give the watch the appearance of a $20.00 Time Piece.

This beautiful watch is timed, tested, regulated, and guaranteed to keep good time. We keep it in repair, without charge for one year. We send this Gold Finished WATCH and CHAIN and the RING for selling only 18 articles at 10 cents each.

ADDRESS
The BIG DOLL CO.
DEPT. W. F. G., 112 DEARBORN ST.
CHICAGO, ILL.

Cheap Lands in Texas

ADJOINING OKLAHOMA

Great Sale Now in Progress

The Houston & Texas Central Railway Company has decided to sell its land grant in Northwest Texas. To effect a quick sale and avoid the expense of maintaining sales agencies for a term of years, the lands have been listed at very low prices.

They are remote from the Houston & Texas Central road, but adjoin the Rock Island main line running diagonally across Oklahoma and Texas. No such opportunity has been presented for years. A large part of the lands are located in

Hansford County, reached from Guyman, on the Rock Island.
Sherman County, reached from Stratford, on the Rock Island.
Dallam and Hartley Counties, reached from Dalhart, on the Rock Island.

Portions of the tract are well watered and nearly all of it is susceptible of cultivation. Transportation facilities are excellent and big markets within easy reach. Direct lines to Kansas City, Denver, Fort Worth and Dallas.

Sale will be made in parcels of 160 acres up to four sections or 2,560 acres to each purchaser; prices from $1.50 to $4.00 per acre. Title was acquired by the railroads direct from the State of Texas. It is therefore perfect. Taxes are low, terms are liberal and warranty deeds are given in all cases.

If you are interested, write quick for leaflet fully describing the location of lands, character of soil and climate, and terms of purchase.

Rock Island System

JOHN SEBASTIAN, P. T. M. Rock Island System,
DRAWER A, CHICAGO.

WE WANT NAMES

We want YOU to send us the names and addresses of from ten to twenty-five farmers having a few head of stock (cows, horses, pigs) living in the United States. You can send us the names from any number of different post-offices. If you will send us these names we will send you FOUR BEAUTIFUL PICTURES FREE. These pictures are reproductions of the most celebrated paintings in the world, and they are of high quality, and we know that you will be pleased and delighted with them; no pictures will be given for a list of less than ten farmers.

We want to send a sample copy of the RURAL HOME to a lot of farmers who are not now taking our paper and that is the reason we want these names.

Send us immediately a list of at least ten farmers and we will send you, ABSOLUTELY FREE, FOUR REPRODUCTIONS OF THE WORLD'S FAMOUS PICTURES. Address THE RURAL HOME, 20 North William St., New York, N. Y.

would like to hear from Fruit-Grower readers who need incubators.

Pianos and organs are now sold by mail, where the manufacturer is known to be reliable. J. B. Tildry, Milwaukee, Wis., has a proposition to send his goods for examination, so that one can know what one is buying, before payment is made.

The Humphryes Mfg. Co., Mansfield, Ohio, advertises a well-cap which prevents the water in cisterns and wells from being contaminated. Pure, sweet water is necessary to the health of the family, and no pains should be spared to keep the supply pure.

The Black Hawk Grist Mill, manufactured by A. H. Patch, Clarksville, Tenn., grinds small grains, feed, etc., and is sold at so low a price that it should be in every home. Its use will save the purchase price in a very short time. Write and ask about it.

The Graves peach is coming into favor. It was mentioned in the report of new fruits by Col. Brackett of the United States Department of Agriculture, before the meeting of American Pomological Society. W. J. Graves, Perry, Ohio, is the originator and introducer.

A knife sharpener every woman should have in her kitchen is being sold by the Two-Edge Mfg. Co., 317 E. Junction Bldg., Kansas City, Mo. It is made to fasten to table or window casing and requires no skill to keep a knife in perfect condition. See their add in this paper.

Northern Box Mfrs. Agency, Dept. A, 412 Dwight Bldg., Kansas City, Mo., reports a good trade in apple boxes, but is prepared to furnish packages to all who desire same. Sample of the boxes were shown at the American Pomological Society meeting—and they were fine, too.

Plums for Northern planting should be grafted or budded on American stocks—F. W. Meneray Crescent Nursery, Council Bluffs, Iowa, furnishes quantities of American seedlings for this purpose. This company also has more than 300 named varieties of peonies. Catalogue free.

Empire Mfg. Co., Box 6F, Quincy, Ill., would like to send quotations for low wheels and handy wagons to all our readers. These wagons will get under the limbs of trees with manure, etc., and are especially adapted to hauling spray pumps through the orchard. Write for catalogue.

The advertisement of Manlove Gate Co., 272 E. Huron St., Chicago, contains a cut which illustrates the gate perfectly, and shows just how it works. Our readers have only to look at the illustration to see how the gate operates, but prices, etc., can only be had by writing the company.

Rippley Hardware Co., Box 217, Grafton, Ill., carry a full line of sprayers of all kinds, and also are prepared to furnish insecticides of various kinds. If you want feed cookers, etc., write this firm. Better send for free catalogue, anyway, and see what can be furnished you, and at what prices.

The German Kali Works, 93 Nassau St., New York, have a line of books treating of the fertilization of crops, which are sent free to those who ask for same. These booklets treat of fertilizing grain crops, fruit crops, etc., and are really valuable, as they report actual experiments. Send today for them.

Hart Pioneer Nurseries, Fort Scoot, Kans., have not missed having an advertisement in an issue of The Fruit-Grower for years. The firm has a full line of nursery stock, and has built up a large trade in the wooden veneer tree wrappers which are so effective in protecting trees from injury by rabbits, mice, etc.

Pierce-Williams Co., South Haven, Mich., manufacture a full line of fruit packages, from berry boxes to apple boxes. This firm has branches at various points, to provide better shipping facilities. If you want any kind of packages, write this company—you ought to have their catalogue on file all the time.

The Boss Washing Machine Co., Cincinnati, Ohio, are so well satisfied that the Boss machine will please Fruit-Grower readers, that the company offers to send a machine to any of our readers for two weeks' free trial. You can then decide if it suits you. What more can you ask? Look up the advertisement, and investigate this proposition.

Fruit farmers are interested in telephone lines, and therefore every reader of The Fruit-Grower who has no telephone should send to Swedish-American Telephone Co., Rural Dept. C., Chicago, Ill., for copy of a booklet telling how to build and operate a telephone line. It is one of the best things ever published on this subject. And it is free.

Fruit farmers can use gasoline engines to advantage for many purposes, and the use of these engines is increasing every day. The Temple Pump Co., Meagher and Fifteenth Sts., Chicago, advertise their pump, "The Master Workman," which has given great satisfaction. They would like to tell you about it, if you will send your address.

Some of the members of The Fruit-Grower Family have San Jose scale in their orchards. This insect should be destroyed as speedily as possible. Write Griffith & Turner, 209 N. Paca St., Baltimore, Md., for information concerning Kill-o-Scale, which has been very successful in destroying this pest. This preparation is mixed with hot or cold water and is very effective.

One of the best as well as one of the largest mail order houses in the world is that of Sears, Roebuck & Co., Chicago. This firm has one or more advertisements in every issue of The Fruit-Grower, and this month calls particular attention to a cream separator. The catalogue of this firm, embracing all lines of merchandise, will be sent free for the asking.

O. L. Chase, 403A Sixth St., St. Louis, Mo., has a proposition to send some of his paint to be tried by our readers which certainly ought to appeal to them. His advertisement in this issue will explain his plan fully, and also make clear how he can afford to make his liberal proposition—he has faith in his paints, and wants to get them into the hands of our readers.

Kemper-Paxton Mercantile Co., 920 Liberty st., Kansas City, Mo., advertise scales, stoves, etc., in this issue, but the firm carries a full line of merchandise of every kind. The catalogue issued by this firm is very complete, and lists everything which is needed on the farm. If you want to know how much money can be saved by patronizing Kemper-Paxton Co., send for this catalogue.

DeLaval Cream Separators have a world-wide reputation, but the new models have been improved in many ways; for one thing, they are heavier and stronger. Separators of largely increased capacity are sold at the same prices which have been paid heretofore. The catalogue of the DeLaval Co., will be sent free to all who address the company at 74 Courtlandt St., New York.

If Fruit-Grower readers have not sent for catalogue No. 135 of Kalamazoo Stove Co., Kalamazoo, Mich., they should send for it today. It is one of the best books on stoves and stove-making ever printed, and describes stoves of all kinds. This company has been in business for many years, and absolutely guarantees every stove sent out—and this guarantee is backed by responsible banks. If you need any kind of a stove, send for this catalogue No. 135.

The Standard Paint Co., 100 William street, New York, manufacture Ruberoid Roofing, which is sold ready for use. This roofing has stood the test for years, and can be recommended for all purposes. The company will send samples and booklet F to those who ask for same. If your barn, your poultry house, your buggy shed or anything of that kind needs fixing up before winter, write for this booklet and samples at once. Free to those who ask for it.

It is hard to understand why anyone will lift apple barrels, fodder, or any other crop into a high wagon, when good low-down wagons can be had very cheaply. The Electric Wheel Co., box 217, Quincy, Ill., furnish low-down handy wagons, or will furnish low wheels with wide tire which can be applied to any wagon. These goods are in every way reliable, and Fruit-Grower readers ought to send for catalogue describing the wheels and wagons and quoting prices on same.

We have seen the water system provided by the Pneumatic Water Supply Co., Drawer D, Kewanee, Ill., and it is a good one. Some of the members of The Fruit-Grower Family—J. C. Hale, W. F. Helkes, and others—have this system, and are pleased with it. By using the Kewanee system water can be carried all over the house and grounds, just the same as in the case of city waterworks—and the expense is slight. Investigate this matter by sending for illustrated booklet.

Every housewife needs a meat grinder, for making sausage, mincemeat, utilizing meat scraps, etc. No better grinder is made than that of the Enterprise Co., 321 Dauphin street, Philadelphia, Pa. This company has been selling the Enterprise grinder for years, with perfect satisfaction on the part of the users. Fruit-Grower readers should look up the advertisement in this issue and secure one of these grinders before time for making sausage, mincemeat, etc. One of the machines is a good investment.

Stark Bros. Nurseries & Orchards Co., Louisiana, Mo., advertise a very complete line of nursery stock. Specialty is made of stock for commercial planters; this firm has a number of specialties handled by no other nursery, and among these are a number of fruits which have achieved a great reputation. One of the strong points of the company is the careful packing of stock. Customers in Corea, Siam and other foreign countries report that stock arrived in perfect condition, notwithstanding it had been carried across the equator.

After some months of what he calls "silence over which he had no control," our first advertiser of irrigated land, Judge J. W. Gregory, living here at the home of The Fruit-Grower, comes forward this month with an announcement that certainly sounds good and, as we know him to be sincere and competent to judge of the value of irrigable land, it will be well worth while for anyone wanting a good piece of irrigable land to look into his proposition.

MODERN METHODS OF MERCHANDISING

The above illustration is the main building of the Kemper-Paxton Mercantile Company, Kansas City, Mo., who are leaders in Modern Methods of Merchandising.

They have enjoyed a wonderful growth and attribute their success to the modern plan of doing business, to liberal advertising in reputable papers which go into the home of the consumer, to the high standard of quality of the goods they distribute and their prompt and courteous manner of dealing with their patrons.

This Modern Method is the plan of direct sales from factory to user at factory prices for cash, and one price to every buyer, large or small. One institution where every want of the consumer can be satisfied at the minimum price.

To carry out this plan the Kemper-Paxton Company locatel their main warehouses and offices in Kansas City, where they can reach every section of the United States, Canada and Mexico.

They buy, import and manufacture and collect in their Kansas City warehouses every kind of merchandise and from there distribute it to their customers, and their enormous capital is thus kept busy working to the advantage of the limited buyer as well as the large buyer.

Not only is a vast sum of money invested, but an army of men, all specialists in their particular mercantile line, are kept busy attending to all the details of manufacturing, assembling, buying and distributing the products of many factories.

The fact that this company almost doubles its volume of business each year indicates that this plan of consolidating every line of business into one big institution, is appreciated by the millions of shrewd buying people of the United States.

This plan affords the people of the smaller towns and rural districts the same advantage the buyer enjoys in the large cities where there are numerous retail stores handling all kinds of goods.

The Kemper-Paxton Company go to the extreme to accommodate and satisfy their customers at a distance, as you will see by their advertisements in other columns. They offer to send their goods out on 30 days' trial. This gives their customers the opportunity to be their own judge of values in their own homes, and the Kemper-Paxton Company will pay all the freight or express charges if anything they sell does not prove satisfactory in every way.

This is certainly a very broad, liberal plan that will permit customers at a distance to order anything they want and have it shipped to them with the positive assurance that if they are not pleased it does not cost them one penny. The Kemper-Paxton Company do this and do it because they believe in honest people and honest goods.

The large Catalog which this company publishes and distributes free to any adult who asks of it, is a wonderful book of nearly 800 pages with thousands of illustrations of merchandise of every distription.

It costs nearly $1.00 to print and mail but it is a complete store in itself and is a salesman that is busy for at least one year and it is a very economical salesman, too. It is called for in such great quantities that a large modern printing plant is kept busy every working day in the year and as soon as one edition is completed another one is begun. They are constantly changing and keeping up to date in styles, prices and new goods.

A force of artists, engravers and protographers are constantly at work making illustrations of the thousands of articles of merchandise listed in this catalog.

Everything is done on a large yet economical scale and the smallest orders receive exactly the same prompt, careful attention as the larger ones.

The system necessary to conduct such an enormous business with so much detail that requires great care must be a very exact one and requires hundreds of busy people.

The thousands of letters addressed to the Kemper-Paxton Company and given to the Rural Free Delivery Carrier or dropped into the post-offices in every locality in the United States each day might be likened to grains of wheat in a ripened field, gathered together by the wonderful machinery of modern times and brought in one big load to the mill, and there passing through cleaners, shakers, sifters, elevators, spouts, grinders, packers and sackers, comes out in a different form, labeled and tagged for the patron.

The equivalent of these thousands of letters received each morning is represented by enormous trucks loaded with boxes and barrels of Kemper-Paxton merchandise, addressed to customers residing in the North, South, East and West, and great bags of mail, containing catalogues and letters in response to inquiries of customers.

Every care is taken to insure promptness in filling orders and every safeguard to prevent errors.

No one should be without this big catalog; it will be sent free upon request.

The Kemper-Paxton Mercantile Company is one of the interesting sights of Kansas City, and its doors are always open wide to the visitors in the city.

"A TRIP THROUGH THE MILLS."

Our readers are all familiar with the advertisement of the Page Woven Wire Fence Company, Adrian, Mich., and undoubtedly know that they claim to use a better quality of wire—a basic, open-hearth spring steel wire, having double the tensile strength of common fence wire of the same size, and not only a stronger, but also a springier wire—a wire that makes good springs. This wire is known as Page-Wire.

The Page Fence Company have just issued a souvenir edition of their house-organ, the PAGE FENCE AGE, which gives a detailed, illustrated description of their process for manufacturing Page-Wire and tells why it is stronger and springier. Every fence buyer should get a copy. It is free. Drop them a postal card asking for "A Trip Through Our Mills."

Prof. U. P. Hedrick of the Michigan Agricultural College, will succeed Prof. S. A. Beach as horticulturist of the Geneva (N. Y.) Experiment Station. Prof. Beach will enter upon his new work at the Iowa Agricultural College in September.

APPLE SEEDLINGS

Western Grown

Apple Root Grafts

All grades and styles. If you want the best at prices that are right, SEND TO US. Sample free after Oct. 10th.

Barnes Nurseries

Station K Cincinnati, Ohio

Also surplus of Apple, Cherry, Peach, Plum, Soft Maple, etc.

Only $13.80 Greatest bargain on a galvanized steel windmill ever offered.

Royal Crown

Full guarantee. Send for free catalog. Windmills, Towers, Tanks, Feed Cookers, Grinders, Corn Shellers, etc. WINGER & JOHNSON, 9157 Commercial Ave., Chicago, Ill.

The Best of Colorado

The Scenic Features, the Mining Centers, the Commercial Cities, the Manufactories, the Smelting Interests, the Choicest Agricultural Lands, the Health and Pleasure Places, are all along or reached most conveniently from the

Colorado & Southern Railway

Many of the Best Parts of the State can be reached by no other railway. Are you interested in Colorado? Send three cents in stamps for our beautiful illustrated book, "Picturesque Colorado" to

T. E. FISHER, Gen'l Pass. Agt.
DENVER, COLORADO

Change Cars at Kansas City

Take a new, bright and attractive train from Union Station, Kansas City, to Union Station, Chicago. The train is *The Southwest Limited* of the

Chicago, Milwaukee & St. Paul Railway

Leave Union Station, Kansas City, 5:55 p. m.; Grand Avenue, 6:07 p. m., arrive Union Station, Chicago, 8:20 a. m. A postal card will bring you complete information about rates, routes and train service.

G. L. COBB, Southwestern Passenger Agent
907 Main Street, KANSAS CITY, MO.

Fruit Exhibit at West Michigan State Fair.

A different system of awards in the horticultural department of the West Michigan State Fair at Grand Rapids, Mich., Sept. 18-22, shut out the small farmers who grow only a few varieties, but brought the exhibit as a whole up to a higher standard.

In former years the horticultural department has been largely made up of single plate exhibits. Prizes were offered for the best plates of all known varieties and premiums were given on much fruit which has no value and ought not to grow.

This year premiums were given only on collections; selection, handling of exhibit and adaptability being the principal points considered in making the awards. The entire exhibit was covered by 25 entry numbers. No entry to consist of less than five varieties.

The object of the exhibit as planned was to bring the best fruits in each class adapted to Michigan conditions, to secure the varieties that would cover a succession throughout the year, to determine the best fruits from all points of view for marketing purposes, displayed in the most approved market packages. With this aim the conditions of each entry were established.

While the conditions and classification shut out the small growers, the entire exhibit was an object lesson drawn from the orchards of experienced fruit-growers and was of more practical value than under the other plan.

In arranging the displays, simplicity was urged as the most effective setting for the fruit and there were none of the conglomerate groupings that have been entered in previous years.

Another feature which was added this year to make the department of practical value to the fruit-growers was a series of lectures. On Wednesday morning C. A. McCue of the Michigan Agricultural College, gave a practical lecture on cover crops. Thursday morning Prof. Fletcher of the college gave a lecture on spraying, illustrating the use of the various implements provided and the formulaes used at the experiment station and the college farm. That these lectures did not command a large hearing was due to the fact that visitors at a fair go to see and be entertained and not for institute work. Nevertheless there were progressive fruit-growers who listened to each lecture, and the speakers and Superintendent Martin were satisfied that the idea is a good one and capable of further development. Each of the lectures was given in one end of the horticultural building.

Another feature for which arrangements had been made, but which could not be carried out, was a practical illustration of fruit-packing each afternoon. It was planned to have practical fruit handlers from Chicago talk on commercial packing of fruits and illustrate their talks, thus giving the growers an idea of the best methods of sending their fruits to market. The plan will be carried out next year and will be of incalculable value to the growers.

With the single plate entries cut out, there was more space in the exhibition hall for the arrangement of the displays. The plates of fruit stood far enough apart on the tables to give each its background of white and bring out its true value without detraction by the plates about it. The classification was more complete this year and no entry was without its plainly written or printed label, all of uniform size giving the name of the fruit displayed.

All about the hall were tacked signs bearing the words, "Do not be afraid to ask questions in this department." The resulting freedom brought out many obscure points of horticulture for the inquirers.

The display of apples this year was the most difficult of all to procure, owing to the failure of the crop in Michigan, but the South Haven Experiment Station had a very satisfactory exhibition display of some 200 plates. There were, however, but few entries in the premium classes.

Ellwanger & Barry of Rochester, N. Y., had an exhibit display of 80 varieties of pears which attracted much attention because the fruit was so perfect.

Aside from the general display of the experiment station, the state was represented by an exhibit of fruit from the Agricultural College farm.

As last year the biggest general exhibitor was Benton Gebhardt of Hart, who had entered fruit in all classes and carried off the majority of the blue ribbons. Last year Gebhardt and another commercial grower of Hart, showed a joint exhibit and carried off most of the single plate awards as well as the collections. The cutting out of the single plates reduced the profits from premium receipts and they divided their forces, Gebhardt's partner going to the State Fair at Detroit.

T. A. McCarthy of Kent County had a representative display of Kent County fruit, which occupied one entire side of a wing of the horticultural hall.

A. W. Munson showed a corner in grapes which took all premiums and was, perhaps, the most attractive display in the building. Mr. Munson makes his King grape the center of his display. His entry of 12 varieties was considered by the judges an ideal selection. The exhibit was much better than Mr. Munson's exhibit at the state fair, as this is his home city and his fruit was all fresh.

Gebhardt's collection of fruits in market packages was called to the attention of visitors frequently, because of the need of the Kent County growers and others in the same district to learn the value of attractive packing of fruit. Practically all of the fruit sent out of the district is shipped in bushel and half-bushel baskets, only varied by the four and eight-pound baskets for grapes.

Summing up, the horticultural display this year has been a valuable teacher for the fruit-growers. Some changes may be made in the making up of the premium list next year. Possibly provision will be made for four or five single plate entries of best varieties in each class and best seedlings. These, with the carrying out of the institute idea, will make the exhibit practical and pleasing at all points.

John B. Martin was superintendent of the horticultural department this year and Prof. Farrand of the experiment station at South Haven, was judge.

LEWIS W. BAILEY.

Grand Rapids, Mich.

A New Plum from Connecticut.

F. L. Perry, 302 Park street, Bridgeport, Conn., recently sent The Fruit-Grower some specimens of a new seedling plum which he says is a cross between Satsuma and Burbank. The specimens were received in good condition, and this new plum appears to be one of the most promising we have seen for a long time. The fruit is of good size, dark red in color, with the red flesh of the Satsuma; pit very small, parting readily from the flesh; quality very good, having none of the sickening flavor which is so objectionable in the Satsuma to many persons; the fruit is firm and carried perfectly. Mr. Perry says, concerning this new plum:

"Three weeks ago they were in good condition for eating, and they will hang on the trees for ten days to two weeks yet. The plums start to ripen at the seed, and as the skin is of great elasticity, they do not crack or split open during the extreme hot and wet weather of the present summer."

Mr. Perry has no trees of the variety to offer now, but will propagate the new sort.

$200.00 IN CASH PRIZES FREE

Other Prizes are Given for Sending us Subscriptions; but THIS $200.00 IN CASH PRIZES WILL BE AWARDED ABSOLUTELY FREE to the persons sending us the neatest correct solutions.

Arrange the 41 letters printed in the centre groups into the names of six cities of the United States. Can you do it? Large CASH PRIZES, as listed below, and MANY ADDITIONAL PRIZES to those who send in the neatest solutions, will be given away. **First Prize, $50.00 in Gold. Second Prize, $25.00 in Gold. Third Prize, $15.00 in Gold. Fourth Prize, $10.00 in Gold. Five Prizes of $5.00 each. Ten Prizes of $2.50 each. Fifty Prizes of $1.00 each. Making a Total of Two Hundred Dollars in Prizes.** Don't send us ANY MONEY when you answer this advertisement as there is absolutely no condition to secure any one of these prizes. **RULES GOVERNING THE CONTEST.**—In preparing the names of the six cities, the letters in each group can only be used as many times as they appear, and no letter can be used that does not appear. After you have found the six correct names you will have used every letter in the 41 exactly as many times as it appears. These prizes ARE GIVEN, as we wish to have our Magazine brought prominently to the attention of everyone living in the United States. Our Magazine is carefully edited and filled with the choicest literary matter that the best authors produce. **TRY AND WIN.** If you make out the six names, send the solutions at once—who knows but what you will WIN A LARGE PRIZE? Anyway, we do not want you to send any money with your letter, and a contest like this is very interesting. Our Magazine is a fine, large paper, filled with fascinating stories of love and adventure, and now has a circulation of 400,000 copies each issue. We will send **FREE** a copy of the latest issue of our Magazine, to everyone who answers this advertisement. **COMMENCE RIGHT AWAY ON THIS CONTEST** and you will find it a very ingenious mix-up of letters, which can be straightened out to spell the names of six well-known cities of the United States. Send in the names right away. As soon as the contest closes you will be notified if you have won a prize. This and other most liberal offers are made to introduce one of the very best New York magazines into every home in the United States and Canada. WE DO NOT WANT ONE CENT OF YOUR MONEY. When you have made out the names of these cities, write them plainly on a postal card and send it to us, and you will hear from us promptly BY RETURN MAIL. A copy of our fascinating MAGAZINE WILL BE SENT FREE to everyone answering this advertisement. Do not delay. Send in your answer immediately. WE INTEND TO GIVE AWAY VAST SUMS OF MONEY in the future, just as we have done in the past, to advertise our CHARMING MAGAZINE. We find it is the very best advertising we can get to offer LARGE PRIZES. Here are the names and addresses of a few people we have recently awarded PRIZES: M. M. Hannah, Fernwood, Miss., $75.00; H. A. Parmelee, Milford, Neb., $61.00; Kate E. Dunlap, 138 N. Hill Street, Los Angeles, Cal., $61.00; Mrs. E. Preister, Richmond, Tex., $55.00; M. G. Christenson, Gregg, Minn., $50.00; Mrs. C. E. Welting, 1330 Lauderdale Street, Memphis, Tenn., $50.00; Mrs. Harriet S. Bullard, 120 Intendencia Street, Pensacola, Fla., $40.00; J. C. Henry, Box 118, Sligo, Pa., $25.00; Henry Perry, Central Islip, L. I., N. Y., $25.00; James A. Cooter, Holden, Mo., $25.00; Evelyn S. Murray, 132 S. Central Avenue, Austin, Chicago, Ill., $25.00; Mrs. L. D. Puffenberger, 340 West Forty-fifth Street, New York City, N. Y., $20.00. We could go on and point to hundreds of names of people who have gained large sums of money from our contests, but only give a few names. The solution can be worked out by an alert and clever person, and it will amply pay you to TRY AND SPELL OUT THESE CITIES. Brains and energy nowadays are winning many golden prizes. Study it very carefully and let us see if you are clever and smart enough to spell out the cities. We would rather take this way of advertising our excellent Magazine than spending many thousands of dollars in other foolish ways. We freely and cheerfully give the money away. YOU MAY WIN. We do not care who gets the money. TO PLEASE OUR READERS IS OUR DELIGHT. The question is, Can you get the correct solution? If you can do so, write the names of the cities and your full address plainly in a letter and mail it to us, and you will hear from us promptly by return mail. Lazy and foolish people neglect these grand free offers and then wonder and complain about their bad luck. There are always plenty of opportunities for clever, brainy people who are always alert and ready to grasp a real good thing. We have built up our enormous business by being alert and liberal in our GREAT OFFERS. We are continually offering our readers RARE AND UNUSUAL prizes. We have a big capital, and anyone can easily ascertain about our financial condition. We intend to have the largest circulation for our high-class Magazine in the world. In this progressive age publishers find that they must be liberal in giving away prizes. It is the successful way to get your Magazine talked about. Of course, if you are easily discouraged and are not patient and are not willing to spend any time in trying to work out the solution, you certainly cannot expect to win. USE YOUR BRAINS. Write the names of the cities and send them to us, and we will be just as much pleased as you are. We desire someone to be successful, and as it does not cost you one cent to solve and answer this contest, it will be very foolish for you to pass it by. In all fairness give it some of your leisure time. SUCCESS IS FOR ENERGETIC AND THOUGHTFUL PEOPLE, and the cause of FAILURE IS LACK OF INTEREST AND LAZINESS. So, dear reader, do not pass this advertisement without trying hard to make A SOLUTION OF THE LINES OF LETTERS PRINTED IN THE CENTRE OF THIS ADVERTISEMENT. We suggest that you carefully read this offer several times before giving up the idea of solving the puzzle. Many people write us kind and grateful letters, profusely thanking us for our prompt and honest dealings, and saying that if we had not so strongly urged them to try to win they would not have been successful. It always pays to give attention to our grand and liberal offers. OUR PRIZES have gladdened the hearts of many persons who needed the money. If you need money you will give attention to this special offer this very minute. If you solve it, write us immediately. DON'T DELAY. **WE WILL GIVE OTHER PRIZES THIS SEASON.** Get your name on our list and win a prize. Do not delay. Write plainly.

THIS IS THE PUZZLE

N S O B O T
K O Y R E W N
O C C H A I C
D T O R T I E
O L A F F U B
A T A L N T A

CAN YOU SOLVE IT?

ADDRESS:

THE HOPKINS PUBLISHING COMPANY,
22 NORTH WILLIAM STREET, NEW YORK CITY.

DON'T BUY A GASOLINE ENGINE FOR SPRAYING

or any other purpose, until you investigate **"The Master Workman"** a two-cylinder gasoline engine superior to all one-cylinder engines; revolutionizing gas power. Costs Less to Buy and Less to Run. Quickly, easily started. No vibration. Can be mounted on any wagon at small cost—portable, stationary or traction. Mention this paper. Send for catalogue. **THE TEMPLE PUMP CO., Mfrs., Meagher & 15th sts., Chicago.** THIS ISOUR 61ST YEAR.

APPLES

Let us know what you have to offer.

C. C. Clemons & Co.

Second and Grand Avenue,
KANSAS CITY, MO.

a Sure Way to make money is by sending us your shipments of FRUITS, BUTTER, EGGS AND POULTRY.

COYNE BROS.
Commission Merchants
160 South Water Street. Chicago, Ill.

SANDUSKY & CO.

General Commission

116 South Third Street and 115 Market Square St. Joseph, Mo.

Wholesale Fruits and Produce Berries a Specialty

We supply everything in the nursery line. Our prices are way down. Price List Free.

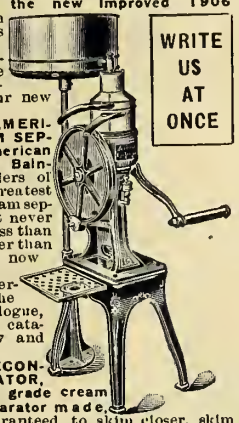
Augustine & Co., Nursery
Normal, Illinois

$19.90 Cream Separator.

WE TRUST YOU 30 DAYS

WHEN YOU WRITE for our free Cream Separator Catalogue we will send you a wonderful offer, by which you can take our very best separator on one month's free trial on credit. Send no money to us, deposit no money with any one, pay nothing when you get it (we trust you absolutely), use the separator one month, put it to every test, at the end of one month if you find it skims closer, runs easier, is easier to operate, skims colder milk, does better work and is in every way better than any other separator you ever saw, then you pay us for it; if not, send it back to us at our expense of freight charges, and you are not out one cent, and you have had the use of the separator free of any cost or money deposit for thirty days, on free open account, full credit trial. We let you be the judge in every particular. We accept your decision without question of any kind and without expense to you.

$19.90 BUYS THE CELEBRATED DUNDEE CREAM SEPARATOR, the new improved 1906 Model, the equal of cream separators sold by others at $30.00 to $40.00.



WRITE US AT ONCE

If you answer this advertisement you will get the Dundee and our other separator catalogues and all our new and wonderful offers.

$29.00 BUYS THE AMERICAN CREAM SEPARATOR, made by the American Separator Company of Bainbridge, New York, holders of many of the world's greatest medals for high grade cream separators, a separator that never before sold to users for less than $65.00 to $100.00, far better than most separators that are now being sold at $100.00.

If you answer this advertisement you will get the American Separator Catalogue, all our other separator catalogues and all our new and wonderful offers.

$33.95 BUYS OUR ECONOMY SEPARATOR, guaranteed the highest grade cream separator made, guaranteed to skim closer, skim colder milk, skim faster, skim more, clean easier, run easier, wear longer, do better work in every way, give better satisfaction in every particular than any other cream separator made, regardless of name, make or price. With this separator goes our celebrated **$1,000.00 Challenge for any other maker to meet us in competitive test.** These separators skim from 200 to 750 pounds per hour and you can skim 1,000 pounds per hour with our Economy. There is no other separator made that will in any way compare with it. If you own two or more cows you need our wonderful offer at once.

CUT THIS AD. OUT and send to us, or on a postal card or in a letter say "Send me your free Cream Separator Catalogues," and you will receive the three catalogues by return mail free, you will get our latest offers, our free trial, no money deposit, open account trust plan for examination and test, you will get the greatest cream separator propositions ever heard of. Address.

SEARS, ROEBUCK & CO.
CHICAGO, - - ILLINOIS.

The Woman Who Sews

Should have the best Sewing Machine made. To prove the "Eldorado" is the best and lightest running, we will ship

FREIGHT PREPAID

on 30 days free trial. GUARANTEED FOR 20 YEARS. Ball bearing throughout, incased in beautifully finished wood work and supplied with complete set of attachments. We know it will please in every respect, but if not, return at our expense and the 30 days trial will cost you nothing. Send for Special Sewing Machine Catalogue and let us tell you more about this big offer.

30 DAYS FREE TRIAL

Kemper-Paxton Mercantile Co.
920 Liberty St., KANSAS CITY, MO.

Easy Shaving

is only possible when the beard is thoroughly softened by the lather of

WILLIAMS' SHAVING SOAP

Sold everywhere. Free trial sample for 2-cent stamp. Write for "The Shavers Guide and How to Dress Correctly."

The J. B. Williams Co., Glastonbury, Conn.

30 FLOWERING BULBS FOR 10c

Together with our Catalogue and a complete treatise on the culture of Hardy Bulbs. All by mail, 10 cts

These 30 Bulbs, 10 kinds, 3 of each, different colors, will make 10 beautiful little pots of flowers for winter, or 10 clumps of early spring flowers for your garden. Pot or plant them now.

Our Illustrated Catalogue of Hyacinths, Tulips, Narcissus, Crocus, Lilies and all Hardy or Holland Bulbs, and rare new winter-flowering plants free to all who apply.

JOHN LEWIS CHILDS, Floral Park, N. Y.

DEATH TO HEAVES Guaranteed

NEWTON'S Heave, Cough, Distemper and Indigestion Cure. A veterinary specific for wind, throat and stomach troubles. *Strong recommends.* $1.00 per can, of dealers, or Exp. prepaid. **The Newton Remedy Co., Toledo, Ohio.**

How to Fight Grasshoppers.

From many quarters of the state we are receiving reports of damage by grasshoppers. Since we must not only suffer from their depredations the present season, but may also have to contend against even greater numbers of them next year, if they are allowed to breed unmolested, this statement of methods of fighting them is submitted at this time.

For protecting gardens and limited areas from their attacks, good results are usually obtained from using a poisoned bran mash, prepared as follows: Stir together, while dry, two pounds of paris green and twenty-five pounds of bran, then moisten with water that has been sweetened with molasses or dissolved sugar, making a wet but not sloppy mash. For plants set about three feet each way, use a tablespoonful near each plant, or the mash may be sown over the field broadcast. One treatment should not cost over one dollar per acre, labor not included. Keep poultry away from the poison.

To secure immunity from attack next year, the eggs should be destroyed this fall or early next spring. These are usually laid in compact ground, especially along roadsides and in the uncultivated borders of fields. Bare, high, sandy ground and closely grazed pasture land is especially resorted to for egg-laying. The female forces her abdomen into the earth for about one inch and at this depth the eggs are laid in a mass of about thirty in a pod-like cavity.

Fall plowing to a depth of eight or nine inches will effectually prevent any of the young hoppers from reaching the surface when they hatch in the spring. Thoroughly harrowing infested land in late fall, so the surface is torn up to the depth of an inch or two, will break open most of the egg nests and prevent hatching. Disking the land in early spring before hatching time will accomplish the same purpose. The insects hatch from about the middle of April until the middle of May in Ohio, depending on the latitude and on the forwardness or backwardness of the season.

The young nymphs may be poisoned with the bran mash, or oftentimes by burning. If the stubble or rubbish on the ground is insufficient to burn, scatter straw over the field and on cool days, when the insects have crept beneath it for shelter, set on fire. If the surface of the ground is level, a heavy roller run over it will crush many of the nymphs, especially on cool days or in the morning and evening.

When the nymphs are very numerous over large areas it is best to resort to ditching. The ditches are made two feet wide and two feet deep, with vertical sides. The sides next to the field to be protected must be kept finely pulverized and not allowed to become washed out or hardened. The right condition may be kept by dragging a brush composed of dead branches through the ditch as often as necessary. Pits should be sunk in the bottom of the ditch at short intervals in which the insects will accumulate, where they can be easily buried. Where it is possible to flood the ditches with water, the water may be covered with a film of coal oil, and the insects can be rapidly and certainly destroyed by being driven into the ditches.

The hopper-dozer, much used in the Northwest to destroy the nymphs, consists of a shallow receptacle of any convenient size, furnished with high back and sides, mounted either on wheels or runners. Large pans are provided with transverse partitions which prevent slopping of the water and oil when the machine catches a jar. The pans are filled with water and coal oil or gas tar, and then pushed by hand or horse power over the infested fields, a set of shafts and handles being so arranged that the front edge of the pan can be elevated or depressed at will to adjust it to the jumps of the nymphs. A suggested form for operation by hand power is made of ordinary sheet iron, eight feet long, eleven inches wide at the bottom, and turned up a foot high at the back, and an inch high in front. A runner extending some distance behind is placed at each end and a cord is attached to each front corner. This may be drawn by two boys. With more hands, several dozers may be placed end to end in a row, one man holding the cords of each pair of contiguous ends, and thus the work may be done rapidly and well.

H. A. GOSSAID.
Ohio Experiment Station.

Farm Telephone Lines.

A great many farmers are interested in putting in a mutual telephone line, to connect their farms and also to secure connection with the near-by towns and cities. Not all of them know how to proceed in a matter of this kind, nor do they understand just what material will be needed. To help furnish this information, the Swedish-American Telephone Company, Chicago, Ill., has issued a book entitled "Rural Telephone." This book has run through two editions, so great has been the demand. This book tells how to proceed in organizing a rural telephone company, how to get the preliminary work under way, and after sufficient persons have been interested, it tells how to proceed to organize on a permanent basis; a model constitution is given, and sample contracts are outlined for all telephone users.

In addition to this information concerning the organization of the company, the book tells just how much wire will be needed per mile, how many poles, insulators, etc., and estimates the length of line which can be put up in a given time. Illustrations are shown, so that one can see just what material and instruments will be needed.

The booklet is invaluable to any one who wishes to put in a telephone line, whether it shall be an extensive mutual line, or merely one from one part of the farm to another, for the principles of telephone construction and operation are made very clear. The book will be sent free to those who will write Swedish-American Telephone Co., Rural Department C, Chicago, Ill. Now is the time to think of putting in telephone lines, and we trust many Fruit-Grower readers will avail themselves of this opportunity to get the book free. Write for it today.

100% on Your Money

EVERY YEAR FOR TWENTY YEARS

This is the marvelously good investment that more than 650,000 users have actually found the **DE LAVAL CREAM SEPARATOR** to be.

With the average number of cows a **DE LAVAL** machine saves and earns its whole cost the first year, which it continues to do yearly for its established life of fully twenty years more to come.

There surely isn't another such investment, either on the farm or off it, open to anyone having cream to separate. Why delay making it?

As for the first cost, if you have the ready cash of course there is a fair discount for it, but if not any reputable buyer may secure a **DE LAVAL** machine on such liberal terms that the machine is **actually free of cost for it will earn its cost and more while you are paying for it.**

Send at once for catalogue and full particulars.

THE DE LAVAL SEPARATOR CO.

RANDOLPH & CANAL STS., CHICAGO.
1213 FILBERT STREET, PHILADELPHIA.
9 & 11 DRUMM ST., SAN FRANCISCO.

General Offices:
74 CORTLANDT STREET,
NEW YORK.

121 YOUVILLE SQUARE, MONTREAL.
75 & 77 YORK STREET, TORONTO.
248 McDERMOT AVENUE, WINNIPEG.

APPLE TREES

We will make a Heavy Discount on Car Load Orders placed in our hands THIS MONTH

In Quality, Health and Conformation there is none better. Write today

Jackson County Nursery Co.
LEE'S SUMMIT, MO.

Currant Cuttings

We offer for Fall a fine lot of Currant Cuttings, 6 to 8 in. long, of following varieties: Pomona, Wilder, Red Cross, White Grape, White Dutch, London Market, Fay's, Cherry, Versailles, North Star, Victoria and Red Dutch. Also

200,000 Gooseberry Cuttings

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EVERYTHING IN SMALL FRUITS.

Splendid stock of Rhubarb from seed and divided roots. Asparagus, Horse Radish, Holt's Sage, etc.

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20,000 York Imperial and 56 other leading varieties of apples, embracing over 200,000 trees, bred to bear and yield results; also a full line of Peach, Pear, Cherry, Plum and Quince trees, all of the leading sorts; Grape Vines, Currants and small fruit plants; guaranteed free from San Jose scale and crown gall and true to name; if you are going to plant one tree or 10,000 this fall, don't fail to write to us for our catalogue and special prices. No finer stock in the United States, and our prices will be a money saver for you. Address the

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The "Best" Light

is a portable 100 candle power light, costing only 2 cts. per week. Makes and burns its own gas. Brighter than electricity or acetylene, and cheaper than kerosene. No Dirt. No Grease. No Odor. Over 100 styles. Lighted instantly with a match. Every lamp warranted. **Agents Wanted Everywhere**

THE "BEST" LIGHT CO.
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Forty acres of **Hardy Roses**; none better grown. 44 greenhouses of **Palms, Ficus, Ferns, Roses,** etc. Direct deal will insure you the best and save you money. Correspondence solicited. Valuable catalogue free. 52 years. 1200 acres.

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OLD TRUSTY Incubator

Made by Johnson, the Incubator Man. His pride and the only machine he has any interest in now.

California Redwood, Lake Superior Copper, Direct Acting Automatic Regulator.

The Price is Right.

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Mann's Latest Model Bone Cutter makes bone cutting simple, easy and rapid. Cuts all bone with adhering meat and gristle. Never clogs. **10 Days Free Trial.** No money in advance. Don't buy a cutter without first trying it. Cat'lg free.

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Closely Woven. Can not Sag. **Every wire** and **every twist** is a **brace** to all other wires and twists full height of the fence. **Horse-high, Bull-strong, Pig-tight.** Every rod guaranteed.

30 DAYS FREE TRIAL and sold direct to farmer, freight prepaid, at lowest factory price. **Our Catalogue tells how Wire is made--how it is galvanized--why some is good and some is bad.** Its brimful of fence facts. You should have this information. Write for it today. Its Free.

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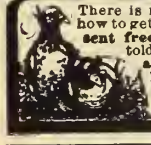

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Don't pay out grinding charges having a large amount of grain ground at the mill, which grows stale before being used. The

Black Hawk Grist Mill

grinds wheat, rye, rice, coffee, spices, and in fact all small grains, fine or coarse as desired, either for table or farm use. You can grind as much as you need for your immediate wants, thus insuring fresh ground grain at any time. The **Black Hawk** not only pays for itself by saving grinding charges, but is a constant money-maker for you. Poultry raisers find the **Black Hawk** invaluable for cracking corn. The mill is simple in construction, easily taken apart, cleaned and set up. The grinding-plates are of hardest metal, all the bearings are chilled, and the long malleable iron crank makes grinding easy. All parts are interchangeable and can be replaced at any time. **Sent prepaid on receipt of $3.00**

A. H. PATCH, Sole Manufacturer, CLARKSVILLE, TENN.

Poultry Department

Building Poultry Houses.

In designing poultry houses one should give attention to the size of building which will be best adapted to a given number of fowls. The temptation is strong to crowd, many persons having the idea that if the birds have plenty of room on the perches, that is all that need be considered in that regard.

Even after the size of building has been decided upon, attention must be given to securing the proper ventilation. A series of experiments in England developed that each fowl should be supplied with about 40 cubic feet of air per hour. With proper ventilation it is estimated that the air changes about four times per hour, so that each fowl will require ten or more cubic feet of space.

The Maine Experiment Station has had excellent results, both as regards ventilation and warmth, by the use of curtained-front poultry houses, with curtained roosting closets. The style of building used is shown in the accompanying illustration, the building being 14 feet wide and 150 feet long.

The back wall is 5½ feet high from floor to top of plate inside, and the front wall is 6 2-3 feet high. The roof is of unequal span, the ridge being 4 feet in from the front wall. The height of the ridge above the floor is 9 feet. The sills are 4 by 6 inches in size and rest on a rough stone wall laid on the surface of the ground. A central sill gives support to the floor, which at times is quite heavily loaded with sand. The floor timbers are 2 by 8 inches in size, and are placed 2 feet apart. The floor is two thicknesses of hemlock boards. All of the rest of the frame is of 2 by 4 inch stuff. The building is boarded, papered and shingled on roof and walls. The rear wall and 4 feet of the lower part of the rear roof are ceiled on the inside of the studding and plates and packed very hard with dry sawdust. In order to make the sawdust packing continuous between the wall and roof, the wall ceiling is carried up to within 6 inches of the plate, then follows up inclining pieces of studding to the rafters.

The short pieces of studding are nailed to the studs and rafters. By this arrangement there are no slack places around the plate to admit cold air. The end walls are packed in the same way. The house is divided by close board partitions into seven 20-foot sections, and one 10-foot section is reserved at the lower end for a feed storage room.

Each of the 20-foot sections has two 12-light outside windows screwed onto the front, and the space between the windows, which is 8 feet long and 3 feet wide down from the plate, is covered during rough winter storms and cold nights by a light frame covered with 10-ounce duck closely tacked on. This door or curtain is hinged at the top and swings in and up to the roof when open.

A door 2½ feet wide is in the front of each section. The roost platform is at the back side of each room and extends the whole 20 feet. The platform is 3 feet 6 inches wide and is 3 feet above the floor. The roosts are of 2 by 3 inch stuff placed on edge and are 10 inches above the platform. The back one is 11 inches out from the wall, and the space between the two is 16 inches, leaving 15 inches between the front roost and the duck curtain, which is sufficient to prevent the curtain from being soiled by the birds on the roost. The two curtians in front of the roost are similar to the one in the front of the house. They are each 10 feet long and 30 inches wide, hinged at the top, and open out into the room and fasten up when not in use. Great care was exercised in constructing the roosting closets to have them as near air-tight as possible, excepting what may be admitted through the cloth curtain.

Single pulleys are hung at the rafters and, with half-inch rope fastened to the lower edge of the curtain frames, they are easily raised or lowered and kept in place. At one end of the roosts a space of 3 feet is reserved for a cage for broody hens. This being behind the curtain, the birds have the same night temperature when they are transferred from the roosts to the cage. Six trap nests are placed at one end of each room and four at the other (Fig. 2). They are put near the front, so that the light may be good for reading and recording the number on the leg bands of the birds. Several shelves are put on the walls 1½ feet above the floor for shell, grit, bone, etc. The doors which admit from one room to another throughout the building are frames covered with 10-ounce duck, so as to make them light. They are hung with double-acting spring hinges. The advantage of having all doors push from a person are very great, as they hinder the passage of the attendant with his baskets and pails very little. Strips of old rubber belting are nailed around the studs, which the doors rub against as they swing to, so as to just catch and hold them from opening too easily by the wind. Tight board partitions were used between the pens instead of wire, so as to prevent drafts. A platform 3 feet wide extends across both ends and the entire front of the building outside. The house is well made of good material and should prove to be durable. The house described cost about $850. A rougher building with plain instead of trap nests, with the roof and walls covered with some of the prepared materials, instead of shingles, could be built for less money and would probably furnish as comfortable quarters for the birds for a time as this building will. This house accommodates 350 hens—50 in each 20-foot section.

Even in very severe weather, when the temperature at night was considerably below zero and rose but little above it during the day, with high winds, the bedding on the floor and the roosting closets remained dry and free from offensive odors. The fowls laid as well as their mates in a large warmed house, their combs were red and their plumage bright, and they gave every evidence of perfect health and vigor. "The birds seemed to enjoy coming out of the warm sleeping closet down into the cold straw, which was never damp, but always dry, because the whole house was open to the outside air and sun every day. There were no shut-off corners of floor or closet that were damp." No

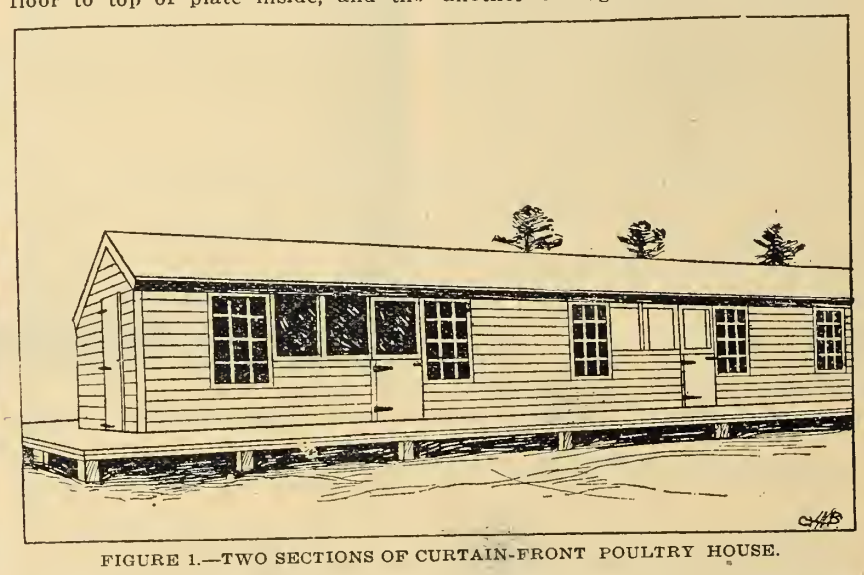
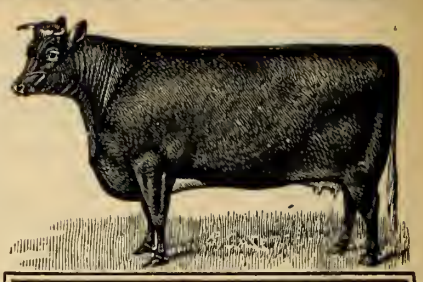


FIGURE 1.—TWO SECTIONS OF CURTAIN-FRONT POULTRY HOUSE.



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Blooded Stock

—that hustling stock and farm paper—has arranged to bring the Stock Yards to his readers. Manager Skinner of the International Live Stock Association will contribute a very comprehensive article on the Stock Yards, exclusively for the entire October issue of **Blooded Stock.** This article will be illustrated and will deal with the Stock Yards as the great international center where prices and standards are made. Be sure to subscribe. 25c a year is mighty small. Anybody can afford 25c. The November number of **Blooded Stock** will be devoted to Beef Breeds and Shorthorns.

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A large, handsomely printed monthly magazine devoted to the fruit industry. Ably edited. Every issue full of good things. Latest and best methods of cultivation, handling and marketing all kinds of fruits. Articles from the best horticultural writers appear in its columns. WORTH TEN TIMES ITS COST.

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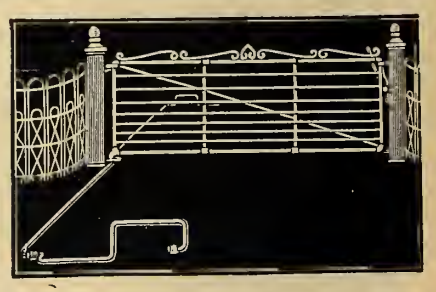

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ALWAYS IN ORDER.

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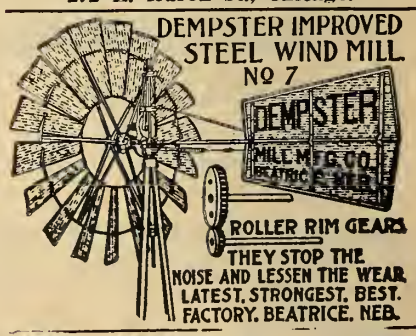

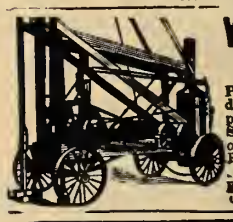

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$10.00 Sweep Feed Grinder. | $14.00 Galvanized Steel Wind Mill.

We manufacture all sizes and styles. It will pay you to investigate. Write for catalog and price list.

CURRIE WIND MILL CO.,
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An extra heavy fence. Every wire—both strand and stay—No. 9 gauge. Thickly galvanized. Best grade steel. We mail free sample for inspection and test. A more substantial, stock-resisting, time-defying fence was never stapled to posts.

WE PAY FREIGHT ON 40 RODS
Write for book showing 110 styles.
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16c to 35c Per Rod—Delivered

SAMPLE FREE

cases of cold or snuffles developed among the fowls.

The report of the experience of the Main station states that it is customary to have the yards on the south or sheltered side of poultry houses to afford protection during late fall and early spring, when cold winds are common. With the curtained-front house north yards only are to be used, it being believed that the necessity for getting the fowls as soon as possible out of the open-front house, where they are really subject to most of the out-of-door conditions during the daytime, is not so great as when they are confined in closed houses with walls and glass windows. "The clear open front of the house allows teams to pass close to the open door of the pens for cleaning out worn material and delivering new bedding, and also in allowing attendants to enter and leave all pens from the outside walk, and reach the feed room without passing through intervening pens."

Purchase of Pure Bred Males.

It is the rule with most all poultry keepers on farms to purchase males of pure bred stock in the spring, if at all. Circumstances make this the more convenient time in many cases. Frequently the chicks are not disposed of before winter, nor are the old males always sold before this time either. Consequently they hesitate to bring young cockerels on the premises before all surplus stock has been disposed of. This idea is a good one, too, for many a good fowl has been killed by fighting with strange birds.

It is a mistake, though, to keep common stock over until spring. The poultry houses are then crowded with stock from which you derive no revenue. Not infrequently this stock sells for no more in the spring than it would have brought in the fall or summer months. The feed has been wasted and the pullets crowded in their quarters, making egg production out of the question. The old males keep the young ones in subjection and they spend their time chiefly in trying to avoid one another.

If it is considered advantageous to keep the surplus stock for a winter or spring market, by all means put them in separate quarters. Give the pullets and hens that are to be kept for laying purposes a house where they will have plenty of room and shelter from storms. Crowded quarters are not conducive to egg production. Flocks of from fifteen to thirty fowls give larger profits according to their numbers than larger flocks will. When the flocks are divided in this way new males may be purchased and brought on the premises without endangering their lives, and if necessary they can be placed with the females they are to be mated with the coming season. In the fancier's yards we find the males and females penned in separate yards during a large portion of the year. Not so, however, on farmers' premises, where fowls have free range it is not always convenient to do so.

It has long been taught, and many have demonstrated to their entire satisfaction that the purchase of pure bred males has materially increased the profits from a flock of mongrel fowls. If chicks of a larger size are required, select males from the Cochin or the Brahma families. If more eggs are wanted, choose some of the Leghorn or Minorca breeds, but do not forget that a large comb freezes easily and that fowls having large combs must be protected from severe frosts. Any variety of the Rocks, Wyandottes or Orpingtons make a good general purpose fowl. They are of good size and, having clean legs, present a fine appearance when dressed.

It is common to postpone the purchase of the new stock until spring as there is then likely to be more room in the poultry house and all surplus cockerels disposed of by this time. Many persons are afraid they may lose them during the winter if purchased now. This may be, but if fowls are properly taken care of the cockerels are no more likely to die than the other fowls. Of course they must be fed, and it costs something to feed a fowl for five or six months in winter. They also require some room, but all of these things are more than offset by the difference in price of all kinds of pure bred stock when purchased in fall rather than in spring.

Those who breed pure bred fowls to sell for breeders can give better value for the same price if purchase be made in the fall or early winter. They, too, have to house and feed large numbers, sometimes, and those disposed of now do not cost them nearly so much as those fed and cared for through the winter. They can therefore well afford to give you better quality for a stated sum now than next spring. Where one intends purchasing either cockerels or pullets, or both, for next season it would be well to write for prices now and if possible prepare a place for your fowls and winter them yourself. With proper housing and care the pullets will bring in quite a revenue through the winter and will be accustomed to their quarters and in condition to produce eggs that will hatch when you need them early in the spring.

Pullets, in particular, we would advise purchasing in the fall. Frequently the weather is so severe later as to make shipping impracticable until spring unless shipped in close coops. If purchased now you have them where you want them and can begin hatching as early in spring as you wish.

If possible cull flocks now and you will take far more comfort and pride in what you have left, to say nothing of the difference in feed and labor required.—Wisconsin Agriculturist.

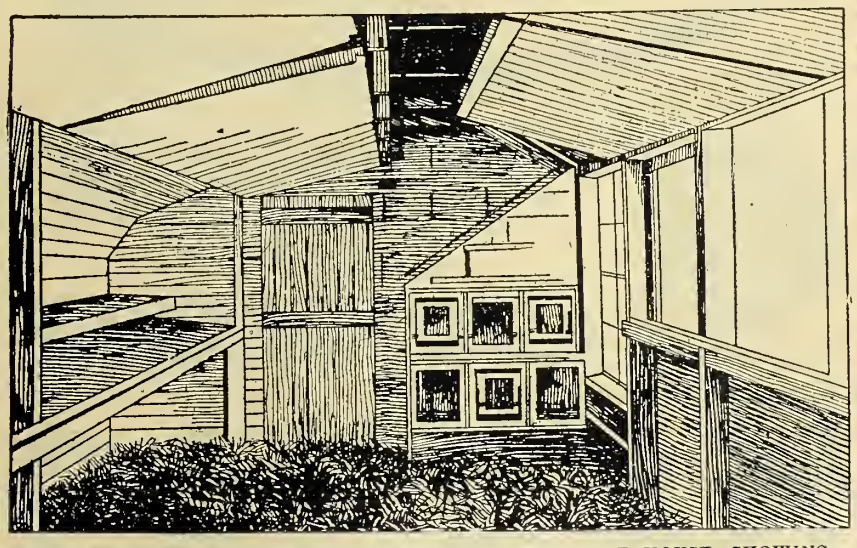
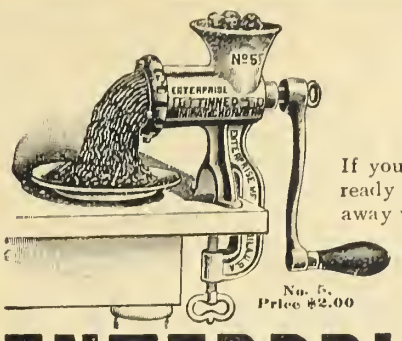


FIGURE 2.—INTERIOR OF ONE SECTION OF CURTAIN-FRONT HOUSE, SHOWING ALSO TRAP NESTS IN ONE CORNER.

Special Course in Poultry.

The Cornell University College of Agriculture has sent out circulars describing the special course in horticulture and poultry. The latter is designed for those who wish to become expert poultrymen, and the whole subject of poultry husbandry is taken up. In addition to the regular course in poultry, a special short course is offered during the winter for those who cannot attend the entire term. Mr. James E. Rice, formerly of Missouri, is assistant professor of poultry husbandry.



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If you have an Enterprise Meat Chopper you are ready to butcher any time. This machine does away with all the hard work of sausage and scrapple-making. Saves meat and money. Cuts *fine or coarse*, just as you want it. Will save its cost in a week. Be sure the name "Enterprise," is on the machine you buy.

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We guarantee, under a $20.000 bank bond, that there is no better stove or range made, and we **save you from $5 to $40 on every purchase,** because we save you all middlemen's, jobbers' and dealers' profits. **We're manufacturers,** not "mail-order dealers;" we own and operate one of the largest and best equipped stove factories in the world; we guarantee the high quality of our product and ship on trial.

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Set it up in your own home and put it to EVERY POSSIBLE TEST for 30 days. Test it for economy in retaining heat, for soundness and durability; for quick, reliable cooking, roasting and baking; test it in ANY WAY YOU CHOOSE to convince yourself that it is just as represented and that we can save you from $5 to $35 on your purchase and give you better goods than you can obtain anywhere else. We have our own big factory for supplying our ever increasing trade. Every stove and range which we manufacture is not only sent on 30 days free trial anywhere in America but is

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OUR TERMS are the most liberal ever made. You can pay after you receive the range. You can take it into your own home, use it 30 days, if you do not find it exactly as represented, the biggest bargain you ever saw, equal to stoves sold at double our price, return it to us, and we will pay freight both ways.

CUT THIS AD OUT. Send it to us and we will mail you **FREE** our new special Stove Catalogue, describing this handsome steel range. Also the most complete line of stoves and ranges in the world. All shown in large illustrations, full descriptions, at prices much lower than any one else can make you. Catalog explains our terms fully.

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MARVIN SMITH CO. CHICAGO.

FARMERS HANDY WAGON

Low steel wheels, wide tires, make loading and handling easier. We furnish **Steel Wheels** to fit any axle, to carry any load. Straight or staggered spokes. Catalogue **free.**

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Below the Blizzard Line.

As you kindly asked me to talk to The Fruit-Grower Family about this section and my new home, will do so briefly. Decherd is on the N., C. & St. L. railway, on the bench of the Cumberland mountains, about midway between Nashville and Chattanooga. The country is comparatively level, well watered with clear streams and fine springs, with an abundance of pure soft water available anywhere, and plenty of timber and good coal for ages to come. The country is well adapted for growing corn, oats, wheat and all vegetables, and as a fruit country is second to none in America. Apples get large and are highly colored, and seldom fail to bear a heavy crop. This country is particularly adapted to the growing of strawberries, grapes and fine peaches.

The climate is ideal. We have the mountain air, that is always invigorating, the temperature is not as high as it is in Omaha or Chicago, and our nights are much cooler, so we don't feel the heat as much as they do on the 40th parallel. Our summers are long and our winters are mild and short. Our people are a church-going people, well educated, kind-hearted, and always ready to welcome strangers. We have good churches and schools.

Decherd and our county is one of the greatest nursery centers in America. Last year over ten million fruit trees were grown and sold in our county, and this year a large increase will be grown. Nurserymen and fruit-growers are trying to make Decherd the largest shipping point on the line of the N., C. & St. L. line. Our railroad people are fair men, and offer us liberal rates on stock and fruits.

A few days ago we visited some of the nurseries here, and found everything in splendid condition. Trees and plants have grown nicely, and the stock will all be first-class.

A. F. COLLMAN.

Dechered, Tenn.

The Conover Peach.

Mr. A. L. Zimmerman, Weatherby, Mo., recently sent The Fruit-Grower some samples of his Conover peach. This is a peach which is being propagated to Mr. Zimmerman, which is extremely hardy in bud. The fact that trees bore a good crop this season, in a locality where all other varieties were killed in bud, is sufficient evidence of hardiness. The quality is also good; flesh is tender, rather dry; peach is a perfect freestone; skin white with red cheek, presenting a very attractive appearance. The Conover is a peach of fair size, the specimens averaging seven and a half to eight inches in circumference. Mr. Zimmerman is a reliable nurseryman, and The Fruit-Grower needed only his recommendation of the Conover peach to know of its value; but of course this basket of peaches was indisputable evidence—and it was certainly "satisfying."

Guarding Against Boll Weevil.

R. I. Smith, State Entomlogist of Georgia, calls attention to the amendment to the law of Georgia relative to the quarantine against the Mexican boll weevil. This amendment removes the quarantine on oats from Texas or Louisiana, and also removes the restriction on hay, forage, fodder and certain other products. At present no corn in the shuck or any goods packed or partially packed in or with cotton lint, seed-cotton, hulls, seed, cotton and cotton-seed sacks, or corn in the shuck shall be shipped into Georgia from any state where boll weevil is found, without a certificate from some state or government entomologist stating that the shipment originated in a locality where, by actual inspection, the Mexican boll weevil was not found to exist.

Dr. Haux Perfect Vision Spectacles.

Science is every progressing. We were under the impression that when one needs a pair of spectacles a personal visit to an optician or oculist is indispensable, but a call at the office of Dr. Haux Spectacle Co., St. Louis, Mo., has demonstrated that people who are hundreds of miles away are fitted by mail with their Perfect Vision Spectacles, which give the utmost satisfaction. In every five hundred letters which the above company receives daily from spectacle wearers all over the world, there are at least one hundred containing words of appreciation from people who bought spectacles by mail from them and who testify that these spectacles are highly satisfactory in every particular. We can therefore conscientiously recommend our readers to the Dr. Haux Spectacle Co., whose advertisement appears in this issue.

A Wonderfully Successful Doctor.

In the great and successful field of home treatment there is probably no physician who has won such an enviable portion of fame and has made so great a success in his particular line of work than has Dr. F. Geo. Curts, 525 Gumbel Bldg., Kansas City, Mo.

His large, full-page advertisement, picturing the well-known features of the doctor surrounded by a great army of happy men, women and children who have found relief from pain and suffering and who have been given back the blessings of perfect sight and hearing by this wonderful man, has appeared in most every monthly and weekly publication of any importance in the country.

It is surprising what a large percentage of cures have been accomplished by Dr. Curts' Mild Medicine Method. Failures are so few and far between that they are almost unknown to him. The doctor shows his faith in his ability to cure any disease of the eye and ear by offering to refund the money paid him for the first month's treatment if results are not entirely satisfactory.

From the North, South, East and West—all over this broad land of ours, from the tropical countries of the southland and from up among the snow-bound hills of Canada—come hundreds of letters of praise to this great physician in proof of the healing powers of his Mild Medicine Method.

His big book, "Blindness and Deafness; Causes and Cures," which is sent free to any one upon request, has probably been the means of doing a greater work in the relief of suffering humanity than any other medical book ever written.

We want to assure any of our readers suffering from such diseases, that they can trust their case to the hands of this eminently successful physician with every prospect of receiving a quick, permanent cure. Dr. Curts will be glad to send his book to any one upon request.

CROP EXPERTS GIVE FREE INFORMATION

Farmers' Information Bureau Furnishes Practical Advice on Cleaning, Separating, Grading and Marketing Grain and Seed.

The Manson Campbell Co., of Detroit, Mich., has performed a great service to the farmers of this country by establishing a clearing house for practical information on scientific methods of handling grain and seed.

It is known as the FARMERS' INFORMATION BUREAU and is in charge of crop experts whose connection with the company has familiarized them with actual conditions in every section of the United States. Its advice is free.

The Experiment Stations and the agricultural papers are doing an important work and the Bureau does not aim to duplicate their service, but to add to it the practical, tested information gathered from every nook and corner of the country in the course of many years of experience in manufacturing Chatham Fanning Mills.

Having such a large capital invested in its business, it was absolutely necessary for the Company to know the needs of the different sections so as to give its machines the widest possible range of usefulness, and it has had experts on the ground, everywhere, to study the problems of the individual farmer. Every crop has been made the subject of thorough investigation. Every variation of the weed pest has been looked into and the remedy found. Grain breeding, seed selection, grain grading and methods of increasing the yield per acre, have been given the most careful attention. Theories have been sifted and the kernels of fact separated from the chaff. The vast fund of tested information has enabled the Company to make the Chatham Fanning Mill the practical machine that it is today and any farmer in need of reliable information can draw on this fund without a cent to pay. Just send your questions to The Information Bureau of Manson Campbell Co. Ltd., 338 Wesson Ave., Detroit, Mich.

The Piano and Organ Man Says:

My special piano and organ buying plan is advertised in this issue, and I want every home not yet in possession of an instrument to read it.

There is a coupon at the bottom of the advertisement and I want to receive a thousand coupons from a thousand readers of this paper.

For every coupon sent in I will send you by return mail a piano and organ buying plan that will surprise you in a dozen ways.

If you want an organ, I will show you how to keep half the price in your pocket. If you want a piano, I will prove to you a saving of over one hundred dollars.

Whether you have ready money or not makes no difference with me. Your promise to pay me a little every now and then is all I ask of any honest home.

One of my customers in Iowa wrote me a letter two weeks after he received instrument I shipped him. He says: "If it wasn't for your easy buying plan, I couldn't have bought an organ for my children until next spring, and they have been teasing me to get one for the last two years."

You will find advertisement on another page. Cut coupon out and send to me today. Address J. B. Thiery, The Piano and Organ Man, Milwaukee, Wis.

Mutual Mail Order System.

The above is the name of an institution at Springfield, Mo., which is prepared to furnish all lines of merchandise to Fruit-Grower readers a tfactory prices. The firm advertises sewing machines anr buggies in this issue, and the low prices made on these are but an indication of the same condition which exists throughout the entire establishment. Springfield is the gateway to the Southwest, with unexcelled shipping advantages, so that the company is in position to fill orders promptly and to get the most favorable freight rates. Our readers, and especially those living in the great Southwest, will do well to look up the advertisement referred to, and ask for particulars about any other line of goods. Address Mutual Mail Order System, Springfield, Mo., and say you do so at the suggestion of The Fruit-Grower.

Valuable Book Free.

The Julius Andrea & Sons Co. have just completed their new book on Farm Telephones, which contains some very valuable information to any one having a telephone or any one who expects to have one. They will send this book absolutely free of charge, and we would advise any of our readers who may be interested in this subject to write to Julius Andrea & Sons Co., 869 W. Water St., Milwaukee, Wis.

UNION PACIFIC
THE OVERLAND ROUTE

Low One-Way Rates

To Many Points in

California, Oregon, Washington

FROM

Missouri River Terminals
Kansas City to Council Bluffs, Inclusive.

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EVERY DAY TO OCT. 31, 1905

$20.00 { to Ogden and Salt Lake City.
to Butte, Anaconda and Helena.

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to Spokane and Wenatchee, Wash.

$25.00 { to San Francisco, Los Angeles, San Diego and many other California points.
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to Portland, or to Tacoma and Seattle,

AND TO MANY OTHER POINTS.

Inquire of
E. L. LOMAX, G. P. & T. A.,
Omaha, Nebr.

MISSOURI PACIFIC RAILWAY

PARADISE FOR THE HOMESEEKER

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KANSAS

Best Agricultural and Stock Raising Region. Soil deep, rich and productive in the growing of Wheat, Corn and Alfalfa. Purchase price from $5 to $30 per acre, which equals the returns of the $50 to $150 per acre lands of other States.

CLIMATE IDEAL, AMPLE RAINFALL.

Buy quick and secure the benefit of an excellent investment. Write for further information, Illustrated literature and

LOW SETTLERS' RATES.

H. C. TOWNSENO, General Passenger and Ticket Agent, ST. LOUIS. MO

PILES NO MONEY TILL CURED. 27 YEARS ESTABLISHED
We send FREE and postpaid a 232-page treatise on Piles, Fistula and Diseases of the Rectum; also 108-page illus. treatise on Diseases of Women. Of the thousands cured by our mild method, none paid a cent till cured—we furnish their names on application.
DRS. THORNTON & MINOR, 1003 Oak St., Kansas City, Mo. and 3969 Olive Street St. Louis. Mo.

Asthma

CURED TO STAY CURED.
Attacks stopped permanently. Cause removed. Breathing organs and nervous systems restored. Symptoms never return. No medicine needed afterwards. 21 years of success treating Asthma and Hay Fever. 58,000 patients. Book 35F free. Very interesting. Write
P. HAROLD HAYES, BUFFALO, N. Y.

CANCER

Cured to stay cured. My TRUE METHOD kills the deadly germ which causes Cancer. No knife! No pain! Longest established, most reliable Cancer Specialist. 16 years in this location. I give a WRITTEN LEGAL GUARANTEE. My fee depends on my success. Send for free 100-p book and positive proofs
DR. E. O. SMITH, 2811 CHERRY ST., KANSAS CITY, MO.

Free to Our Readers.

Dr. W. O. Coffee, the eminent Eye and Ear Specialist of Des Moines, has just completed and published at a great expense two handsome books, which all readers can have free. One of them, an 80-page book on Diseases of the Eyes, telling all about these diseases and how to be cured at home without visiting a doctor. The other a 60-page book on Deafness, telling how everyone can cure themselves of partial or complete loss of hearing. All who write to the doctor immediately can have one of these books free of charge if they specify which one is wanted. Write to Dr. W. O. Coffee, 816 Century Building, Des Moines, Ia.

Special Homeseekers Excursions

OCT. 17th and NOV. 7th

On the above dates special homeseekers' excursion rates have been authorized from Ohio and Mississippi gateways to points reached by the Southern Railroad and Mobile & Ohio Railroad. Round trip tickets will be sold at the remarkably low rate of 80 per cent of the standard one-way rate—less than half fare for the round trip. These excursions present exceptional opportunities to homeseekers to personally inspect the rapidly growing South, and to choose homes which are the best in the United States.

Lands Are Cheap

Full information concerning properties, business openings, rates, etc., upon request.

M. V. RICHARDS,
Land and Industrial Agent,
Washington, D. C.

Chas. S. Chase,
Agt., Land & Industrial Dept.,
622 Chemical Bldg.,
St. Louis, Mo.

M. A. Hays,
Agt. Land & Industrial Dept.,
225 Dearborn St., Chicago, Ill.

Brother Jonathan Series Fruit Books

This is the most complete series of books ever issued on the subjects covered, and every readers of The Fruit-Grower should have the full set of ten. The books are handsomely illustrated and have been prepared by experts on the subjects to which they are devoted. We quote below the titles only on account of lack of space, but on request will be glad to send circular giving complete description.

No. 1—"PROPAGATING TREES AND PLANTS."
No. 2—"A TREATISE ON SPRAYING."
No. 3—"HOW TO GROW STRAWBERRIES."
No. 4—"THE HOME GARDEN."
No. 5—"PACKING AND MARKETING FRUITS."
No. 6—"A BOOK ABOUT BUSH FRUITS."
No. 7—"GROWING GRAPES."
No. 8—"HINTS ON PRUNING."
No. 9—"APPLE CULTURE, WITH A CHAPTER ON PEARS."
No. 10—"SUCCESS WITH STONE FRUITS."

These books will be mailed prepaid to any address on receipt of price, **25c each or five for one dollar.** To any paid in advance subscriber we will send **the first five books** on approval. If you like them, you are to send us a dollar, and if they do not suit you they may be returned. We have sent out a great many on this basis and the books have been so satisfactory that not one set has been returned.

Trade Mark—"Brother Jonathan"

Until Jan. 1, 1906

we will send a book free to any reader who sends one new subscriber with remittance of fifty cents.

Brother Jonathan Series—No 9

HELPS FOR THE ORCHARDIST

These booklets are copyrighted and published exclusively by us. For further particulars, address

THE FRUIT-GROWER COMPANY, SAINT JOSEPH, MISSOURI

Farm and Stock

Published Monthly in the Interests of Corn Breeding, Cultivation & Live Stock

ST·JOSEPH·MO

The above is the cover page of a new general farm paper which will be issued in January, 1906. Farm and Stock will be different from any other farm paper. It will be the same size as The Fruit-Grower, and will be printed in the same general style. It will be to the various associations of breeders what The Fruit-Grower is to the different horticultural societies, and all meetings will be reported fully. CORN BREEDING will be one of the main features.

Farm and Stock will be published monthly—daily papers give farmers the market quotations, and current news, and Farm and Stock will devote its space to keeping its readers posted concerning developments in the agricultural world. In other words, Farm and Stock will be modeled along the lines of The Fruit-Grower, except that it will be devoted to general agriculture, paying particular attention to breding of live stock, IMPROVEMENT OF CORN and other farm crops, etc.

SUBSCRIPTION, $1.00 PER YEAR
ADVERTISING RATE, 10c PER LINE; $1.40 INCH

The Fruit-Grower Company will have general oversight over Farm and Stock, and the same policies which have made such a success of The Fruit-Grower will be adopted for the new publication.

For any further information concerning the new paper, address

FARM AND STOCK CO., ST. JOSEPH, MO.

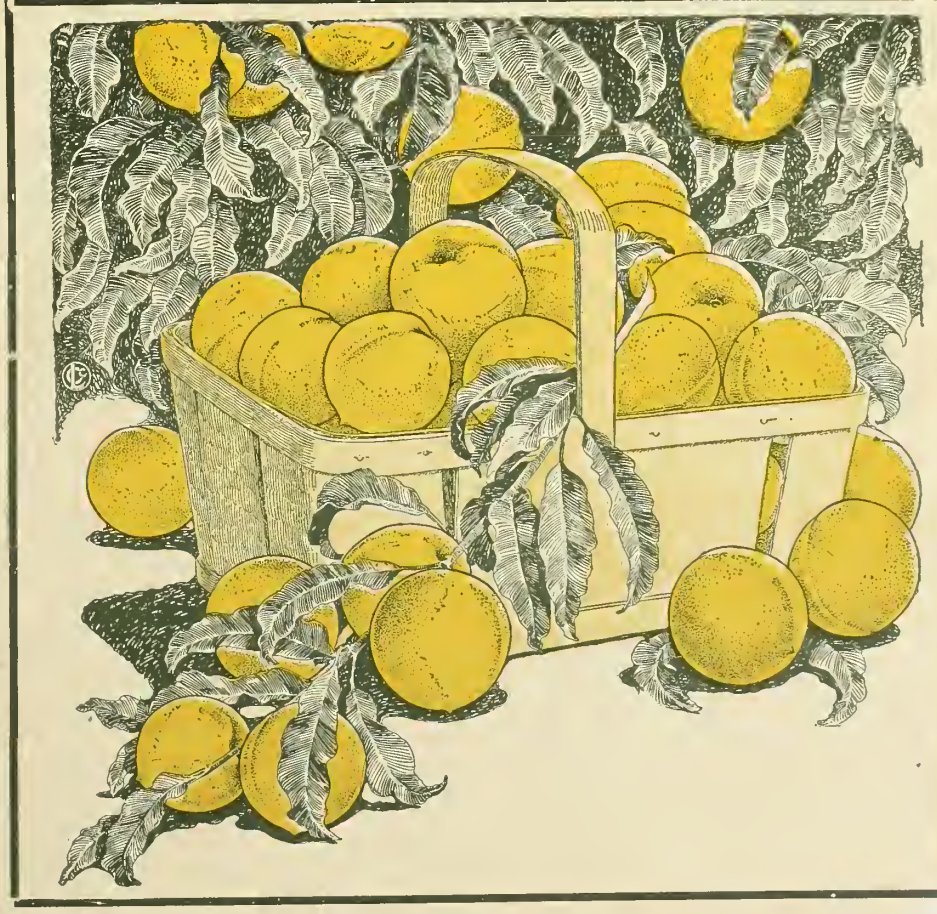
Nursery Catalogues

We have special facilities for printing catalogs for nurserymen and ask that you give us an opportunity to send you prices and samples. Our special designs for cover pages are very attractive and can be printed in one, two or three colors. Our stock of cuts is large and we will furnish them free of charge for use in your catalog if we print it. Write us for information and prices.

Address Printing Department

The Fruit-Grower Company

ST. JOSEPH, MO.



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BRANCHES

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Rockport, Ill.

Portland, N. Y.
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Oldest Nurseries
In The West
Established 1825

Largest Nurseries
In The World
4675 Acres

WE PAY FREIGHT on $5 orders (one-fourth cash to be sent with order) at prices quoted in our Wholesale Price List, to any R. R. Station in

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On Orders Amounting to $7.50 or more, if one-fourth or more cash is sent with the order, we will prepay freight to any R. R. Station in

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MINNESOTA
MISSISSIPPI
NEW JERSEY
NEW YORK
NORTH CAROLINA
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On Orders Amounting to $10 or more, if one-fourth or more cash is sent with the order, we will prepay freight to any R. R. Station in

ARIZONA CALIFORNIA COLORADO FLORIDA IDAHO
MAINE MASSACHUSETTS MONTANA NEVADA
NEW HAMPSHIRE NEW MEXICO NORTH DAKOTA
OREGON SOUTH DAKOTA UTAH VERMONT
WASHINGTON WYOMING

We make no charge for Boxing and Packing. We Do NOT pay freight on orders amounting to less than specified, nor unless one-fourth cash is received with order, nor on shipments by express.

GRAPE VINES—In order to carry out our policy of furnishing only the BEST, we maintain a nursery at Portland, N. Y., in the heart of the famous Fredonia—Chautauqua Grape Belt, which produces the finest vines grown in the U. S. We are headquarters for all the leading Commercial sorts.

STARK BRO'S Improved Tree Digger

STARK TREES

Succeed Where Others Fail—BECAUSE, three generations of Stark Nurserymen have made the production of the BEST trees their life study, their life work;

BECAUSE, Stark Trees are produced under an exact science from the time the seed are selected until the tree is delivered carefully packed for transportation;

BECAUSE, in selecting buds and scions only healthy, vigorous, highly prolific trees of the best strains are used as parentage;

BECAUSE, a tree grown with all conditions favorable has high vitality and will withstand climatic rigors and unfavorable soil even better than the stunted weakling propagated in just such uncongenial surroundings;

BECAUSE, having eight nurseries in five states, each sort is grown under the most favorable conditions of soil and climate, resulting in hardy, healthy, thrifty trees that LIVE and BEAR;

BECAUSE, we are constantly on the watch, not only for valuable new varieties of fruits, but for the best strains as they are developed. As soon as an improved strain is found it is propagated and the inferior discarded;

BECAUSE, only THE BEST roots, scions, soil, location, labor, cultivation, pruning, digging, storing and packing enter into the production and handling of Stark Trees. We ask for your orders

BECAUSE Stark Trees have given satisfaction for more than 80 years, with the result that Stark Nurseries have constantly grown (the only true test of merit) until they are now the LARGEST IN THE WORLD. We are not "here today and gone tomorrow."

APPLE SEEDLINGS—We offer for the coming season's trade several million that, owing to favorable season, are EXTRA FINE. They are Iowa grown from Vermont seed and our own experience has demonstrated that they are superior to all others we have used. Also a fine lot of Catalpa, Black Locust, Mahaleb Cherry, French and Japan Pear Sdlgs., Plum Stocks, etc., Vermont Apple Seed.

WARNING—We are sole owners of the names Black Ben, Champion, Delicious, King David and other leading commercial apples, Gold plum, Stark-Star grape, etc., all of which are our Trade-Marks, duly registered in the U. S. Patent Office under the new law approved Feb. 20, 1905. Planters are warned against imposition by infringers offering trees under these names or trees claimed to be "just the same." We offer the GENUINE at prices that are certainly as low as GOOD trees can be produced and sold. Wise buyers will take no chances.

STARK FRUIT BOOK "WORLD'S FAIR FRUITS" shows in natural colors and accurately describes 216 varieties of fruit. Send 50 cts. and we will send the book post-paid and a REBATE TICKET permitting its return within 60 days when the 50 cts. will be refunded. Or the Rebate Ticket is good for $1 part payment on a $10 order for nursery stock.

Send for Wholesale Price List, Order Sheet, Descriptive Circulars, Half-tone Views, etc.—FREE. WE PAY CASH weekly and want MORE Home and Traveling Salesmen. Address, STARK BRO'S NURSERIES & ORCHARDS CO., Desk 9, Louisiana, Mo.

Volume 16 November 1905 Number 11

THE WESTERN FRUIT-GROWER

ST. JOSEPH, MISSOURI

Thanksgiving Number

Copyright, 1905, by The Fruit-Grower Co., St. Joseph, Mo.

NEBRASKA GROWN

Apple Trees and Apple Seedlings

American Plum Trees,
Black and Honey Locust
Catalpa Seedlings,
Large, Medium & Small

Shade Trees

Grades and Prices Right. If interested, write for Prices and Varieties. Address,

Youngers & Co

GENEVA, NEB.

TEXAS TREES

A great stock of fine trees on new prairie land. One-year trees 7 feet high.

A hundred varieties of Plums; over a hundred of Peaches.

Fortunes in some new varieties.

Some crosses between Blackberries and Dewberries that eclipse the world.

Write for my catalogue and learn a thing or two. Trees taken from the South to the North become totally dormant and stand any winter. Low prices on big lots.

I pay express and ship almost every day all winter.

F. T. RAMSEY.

THE AUSTIN NURSERY
Austin, Texas

PECAN TREES

AND NUTS Gold and Silver Medals awarded our Nut and Tree exhibits, St. Louis, 1904. High grade budded and grafted trees of all best varieties. 770 acres in pecans. Write for catalog "A" WITH WHICH IS INCORPORATED A VALUABLE TREATISE UPON PECAN CULTURE.

THE G. M. BACON PECAN CO., Inc.
De Witt Georgia.

Hardy NORTHERN GROWN

Trees & Shrubs

Healthy, vigorous, productive and free from insect pests. NONE BETTER or cheaper. No traveling salesman can compete with us in price, quality considered. Get Free Catalogue.

GEORGE H. WHITING NURSERIES,
Lock Box 1110 Yankton, S. D.

Conover Peach

A FULL CROP

this season; hardiest peach we have; comes true from seed; passed through the severe cold of last winter and the late freezes and frosts of last spring, and then bore full crop. For history and prices of trees, address

A. L. ZIMMERMAN, Weatherby Mo.

New Market Nurseries

Taylor Perry, Jr., Proprietor

Offer to the trade for Fall shipment, a nice lot of well grown Tree and Shrub Seedlings, Ornamentals, etc., at lowest wholesale prices. 100,000 collected Sycamore Seedlings ready for fall shipment. Price list free.

Taylor Perry Jr., New Market, Alabama

PAEONIES

QUEEN VICTORIA (Whitleyii)....$9.00 per 100
FESTIVA MAXIMA .....30.00 per 100
FRAGRANS, the tall grower and bloom producer ..... 6.00 per 100

For 1,000 rate and other varieties, write. Ask for rates on Lucretia Dewberry and Miller Red Raspberry plants.

GILBERT H. WILD, SARCOXIE, MO.

NEW IDEAS IN GUNS

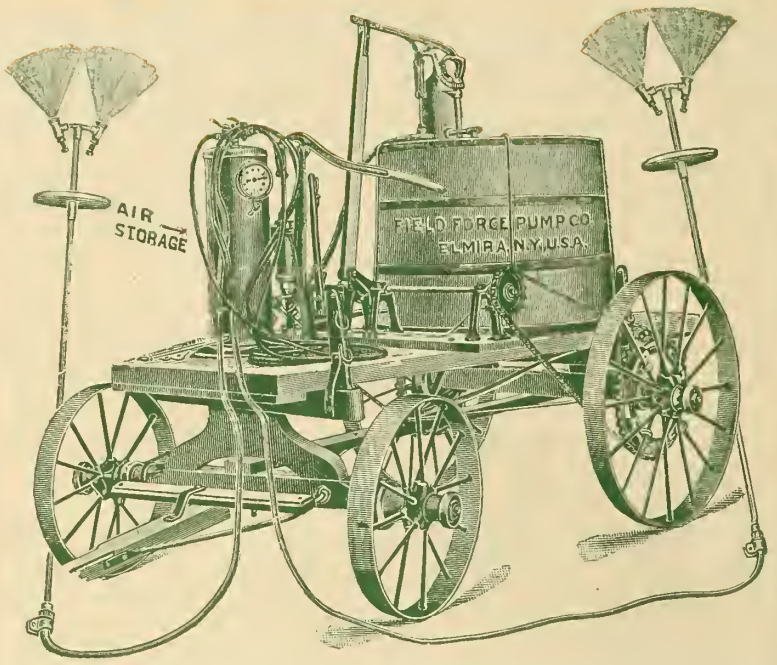
Double Barrel Breech Loaders, $7.95 and up

Single barrel guns $3.75. 22 cart'ge rifles $1.50. *Lowest prices* on shells, hunting clothes, boots, etc. Catalog 927, 160 pages, 5c. The largest and cheapest *Sporting Goods House* in the world

Schmelzer Arms Co., Kansas City, Mo.

Wanted 10 men in each state to travel, post signs, distribute samples and advertise our goods. Salary $78 a month, $3 a day for expenses. Exp. advanced. KUHLMAN COMPANY., Dept. C., Atlas Block, Chicago.

SPRAY WITH THE ORCHARD MONARCH



THE GREATEST AUTOMATIC POWER SPRAYER NOW IN USE—Has two leads of hose and will supply eight nozzles keeping up a pressure of more than One Hundred Pounds. **Has the Best Agitator** ever invented; it swings in bottom of cask and carries brushes which clean the suction strainers. All worked **Automatically**; power is furnished by rear wheels of wagon; no hand pumping, no cost for power; efficient, safe, satisfactory; adapted for large or small orchards. We also make the famous

Empire King—Garfield Knapsack

and a full line of POTATO SPRAYERS. Catalogue FREE.

Field Force Pump Co.
ELMIRA, NEW YORK

John Deere Plow Co.
KANSAS CITY, MO.

Brother Jonathan Series of Fruit Books

This is the most complete series of books ever issued on the subjects covered, and every reader of The Fruit-Grower should have the full set of ten. The books are handsomely illustrated and have been prepared by experts on the subjects to which they are devoted. We quote below the titles only on account of lack of space, but on request will be glad to send circular giving complete description.

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Trade Mark—"Brother Jonathan"

UNTIL JANUARY 1, '06

we will send a book free to any reader who sends one new subscriber with remittance of fifty cts.

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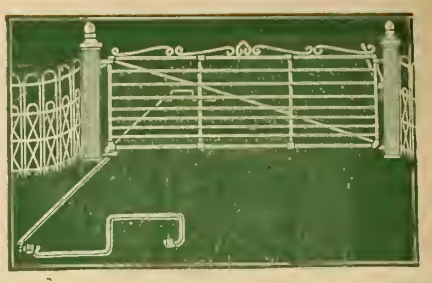
The Fruit-Grower Co., St. Joseph, Mo.



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ALWAYS IN ORDER.

Has been in general use for many years. It is opened or closed by any vehicle without assistance or stopping. By its use runaway accidents are avoided. The gate can be placed at any driveway entrance, attached to ordinary posts, and soon pays for itself in time saved. Machinery is all above ground, and so simple it never gets out of order. It adds to the beauty, value and convenience of any home. Address

MANLOVE GATE COMPANY
272 E. Huron St., Chicago.

$2 Clock for $1

This Clock is a guaranteed time keeper and makes a beautiful and handsome ornament. Solid Brass Works, run by a weight; no spring; no key winding. Has never been sold at such a low price. Made of hard wood. Price $1.00 postpaid. Send today. J. EDW. STROYER & CO., 1 Englert St., Rochester, N. Y.

Every Corn Picker

should write for illustrations and descriptions of the largest line of WRISTLETS, FINGER PEGS, THUMB, CENTER and WRIST HOOKS, single or double, which are invented by an EXPERT HUSKER and also the kind which made Chas. A. Rennack famous by husking over 200 bus. in 10 hours.

R. N. THOMAS, MANUFACTURER,
Shenandoah, Iowa.

Trees & Plants

Freight paid to your station. We have a complete line of Fruit and Ornamental Trees, Shrubs, Vines and Plants. Get our catalogue and price list. Our stock and prices are right. Give us your order; we will treat you right.

THE ROEDER NURSERIES

Remember we pay freight. OSCEOLA, MO.

Strawberry Plants

We have for Fall and Spring an extra fine lot of young, healthy plants, true to name; other plants and trees. Send for Free Catalog.

JOHN LIGHTFOOT

R. F. D. No. 2. Sherman Heights, Tenn.

Millions

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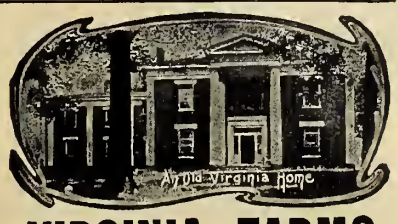

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Volume Sixteen ST. JOSEPH, MO., NOVEMBER, 1905. Number Eleven

Blight Cankers of Apple Trees

The subject of pear blight is one which is of the greatest interest, and any new light on the subject is always gladly received. For several years investigators have been of the opinion that certain forms of canker on limbs and trunks of apple and pear trees had a connection with the disease which is manifest in summer in blighted twigs, and which is called "fire blight" because the blighted twigs look as though they had been scorched. For some years Dr. J. C. Whitten of the Missouri Experiment Station has been working on this theory, and has even inspected pear trees during the winter season, to cut out cankered spots which were supposed to be sources of infection the following spring. Other stations have been working along the same line.

At the recent meeting of the American Pomological Society at Kansas City, H. H. Whetzel of Cornell University, delivered an illustrated talk upon the subject of the relationship between cankered spots and the blight disease. Mr. Whetzel has devoted much time to this subject, and the information he has to offer is perhaps more definite in its results than any other investigator has reported. Accordingly, The Fruit-Grower is pleased to present herewith an article by Mr. Whetzel, which embodies much that he said at Kansas City, with a number of cuts, which make clear his explanation of the different forms of canker. The work which has begun at Cornell will be continued throughout the coming season, and will be reported in The Fruit-Grower when definite conclusions are reached. Mr. Whetzel's article follows:

Early in June, 1904, there was received at the Cornell University Experiment Station an apple branch bearing a peculiar canker (Fig. 1). This was sent in by a farmer living in the upper Hudson River region, not far from Saratoga. The letter accompanying the specimen disclosed a startling condition of affairs in that

Fig. 1—Typical Blight Canker on Limbs.

section. Many trees had failed to leaf out, others had sent out a scanty supply of small curled leaves and were making little or no growth, still others had apparently leafed out all right, but suddenly on one or more of the branches the leaves had turned brown and dried up and the limb had died. Practically all of the trees, even those apparently healthy, showed a considerable number of cankers either in the crotches of the large limbs, on the limbs themselves or on the trunks. An examination of the specimen sent in failed to disclose any fungus growth to which we could attribute the trouble. It was decided that a trip to the infested section should be made and upon entering the Hudson River Valley north of Albany it at once became evident that the writer of the letter had not exaggerated. The young orchards were entirely dead and nearly every one showed one or more dead limbs. Most of these orchards were about eight to fifteen years old and just coming into bearing. Of all the trees of this age it was estimated that at least 95 per cent were diseased, and repeated trips to this region during the present season have fully justified this high estimate. Pears were practically all dead, having succumbed the previous season.

Following this came reports and specimens of the malady from other sections of the state and from other states. A trip to the north central part of the state was made in the au-

Fig. 2—Showing a Typical Pit Canker on Limb.

tumn of the same year (1904) and so prevalent and serious was the trouble that it was decided to begin a thorough and systematic investigation of the disease. The work was taken up in earnest early in March, 1905.

An orchard of 350 trees a short distance from Ithaca was known to be slightly affected and arrangements were made with the owner to conduct our main investigations on his trees. Weekly visits have been made to this orchard and careful notes on the condition of each tree recorded. Several trips to other sections of the state, and especially to the Hudson River region, have been made. A large amount of data in the form of notes, photographs and cultures have been collected. It is as yet, however, too early in the progress of the investigation to make definite statements regarding the cause of all the phenomena observed. In certain cases the cause of the disease has been conclusively determined. Cankers similar to those on diseased trees have been produced by artificial inoculations and it now seems probable that the different forms of cankers and twig blights observed will be found to be in most cases due to the same cause.

History of the Disease.

From an examination of agricultural literature it appears that the disease has been known in this country since 1780. Numerous orchardists and investigators since that time have called attention to certain forms of canker of apple and pear trees and various agents have been suggested as the cause of the same. It is now well established that the twig blight of pears and apples is due to the same organism, and while from time to time these cankers on body and limbs have been referred to the same cause, definite proof of this has not been well established. Attempts at inoculating the bodies of trees or even the limbs more than a year old have not been successful, and Paddock in his work on the New York Apple Tree Canker, in calling attention to the body blight of the pear, says, "These definitely outlined and sunken areas of dead bark commonly known as body blight have long been thought to be due to the action of the pear blight bacillus; however, there seems to be no definite reason for such belief."

In very recent years numerous bulletins have appeared describing cankers of apple trees, but these have been almost without exception investigations of fungus cankers of various sorts. Brzezinski in France, in 1902, described a canker of apple and pear trees which he attributed to a new species of bacteria. The work seems to have been done in France. The accurateness of his investigations have since been questioned.

Notwithstanding this dearth of literature on the subject, so general is the belief among pathologists that the cankers are caused by the blight bacillus that it seems strange definite work has not been done to settle the matter.

General Characteristics of the Disease.

The attention of the orchardist is usually first directed to this disease only when the affected tree is nearly or quite dead. Badly diseased trees either fail to leaf out at all in the spring or, as is more usually the case, send out a sparse growth of mouse-eared leaves, i. e., small gray green leaves with margins rolled or recurved. hey do not have the dense dark green foliage of healthy trees. At first this condition is not sufficient-

Fig. 3—Showing Successive Spreading of the Disease Due to Changes in Weather Conditions.

ly contrasted with the healthy tree to attract notice, but as the season advances the healthy trees expand their leaves to normal size and the affected trees thus appear to suddenly cease growing. Frequently the leaves turn brown and dry up on the trees. Sometimes affected trees will pull through until fall, but they fail to leaf out the following spring. On making a closer examination of these dying trees, sunken spots in crotches, limbs or body are found. Further search in the orchard is almost certain to disclose similar cankers in otherwise apparently healthy trees. The chief distinguishing character of this disease is the presence of these cankers. Along with this goes several other phenomena, the relation of which to the disease has as yet not been entirely worked out. Among these secondary features, perhaps the most constant is the bleeding or exudation of sap from the heart wood where it is exposed by pruning or canker wounds. Often trees in affected orchards which show no trace of recent cankers will exhibit the most profuse bleeding from pruned stubs.

There is another characteristic which becomes quite evident, especially toward the latter part of the summer. The bark of badly affected trees often has a peculiar bronzed or light brown color. When cut into it is dry and pale with streaks of brown and does not have the sappy green color of healthy tissue. Such trees, as if in anticipation of their early death, usually blossom abundantly and set a heavy crop. This was strikingly shown in a tree that I observed this spring. A canker on one side of the body had involved the base of a large limb. The side of the tree formed

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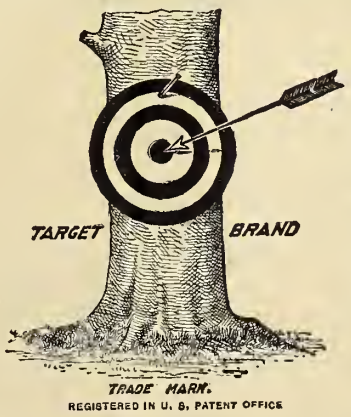

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by the branching of this limb was one solid mass of blossoms to the almost total exclusion of leaves, while the remainder of the tree was well leaved and bore a normal per cent of flowers. The fruit which sets on such diseased trees and limbs matures abnormally early and is usually of very inferior quality or, owing to the drain on the already weakened tree, they may never mature at all, but wither and drop from the dying branches.

Fig. 4—Typical Old Body Canker.

These phenomena in leaves, bark and fruit are to be attributed, I think, directly to the cutting off of the sap supply by the cankers on the body and limbs.

The various forms of cankers which have been under observation during the past two years may be conveniently grouped as follows:

1. Limb and body cankers, or pit cankers.
2. Crotch cankers.
3. Pruned-stub cankers.
4. Collar cankers or collar rot.
5. Scurvy blister of body and limbs.

A few pictures of each of these will give you some notion of their appearance and relation to the different parts of the tree (Fig. 2). The cankers occurring on the upper body and the limbs, exclusive of the crotches, are usually quite similar in form and appearance. They are sunken areas

Fig. 5—Showing Crotch Canker, Diseased Tissue Has Fallen Out, Leaving Wood Bare.

of dead bark of varying sizes, usually not more than an inch or two across, but in severe cases running a foot or more along the limb or even girdling it. The bark at some point in the diseased area is usually killed to and including the cambium, although about the margins it may affect only the outer layers or cortex. When the active progress of the disease is checked for a time a sharp line of demarkation between the diseased area and the healthy tissue is formed. This results from the active growth of a callus by the healthy tissue and the drying down of the diseased bark which causes this crack to form along the line between the two. The disease under favorable conditions may again advance its front and a succession of cracks are thus formed in the cankered area. (Fig. 3.)

Pit Cankers.

In very many cases the disease appears to be active but once during the season and only small cankers are formed. These are usually circular spots with a cone-shaped projection through the bark to the cambium. These I have designated as "Pit cankers." Very frequently they never spread further. The dead tissue dries up and finally decays or drops out leaving a conical pit. The margins of this plant callous rapidly, but usually do not at once cover the bared spot of wood at the bottom. During the following seasons the disease may spread slowly from the margins of the pit and so after a time form a large ugly canker of the type here shown (Fig. 4). Many of these pits finally heal entirely, but some of them exude sap throughout the season, even after the wound is nearly closed.

Crotch Cankers.

In those orchards where the disease has been most destructive cankers have appeared in the crotches as well as on body and limbs. They are, so far as I have been able to determine, of exactly the same nature as the limb and body canker. They have the same distinctive marks, the raised and blistered margins when actively progressing and the cracked

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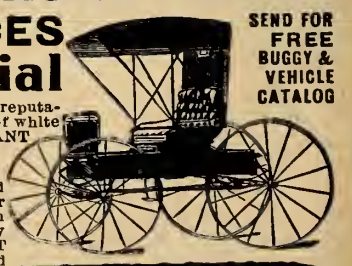

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border and sunken surfaces when old and dried (Fig. 5). This dead tissue soon decays and falls out, leaving the wood at the crotch bare, or if the crotch be of the proper shape to hold moisture, the wood becomes soft and rotten. Many of the cankered crotches also exude sap. They do not seem to heal as readily as do those on limbs and body.

Pruned-Stub Cankers.

In the orchard which has been under continuous observation during the past season it was clearly observed that the stubs of many of the pruned limbs and especially of those pruned

Fig. 6—Typical Pruned Stub Canker.

in 1904, showed a collar of cankered bark. Sometimes this ran down the side of the limb to quite a distance. The pruned limb had failed to heal properly and the callous where formed was slight (Fig. 6). The dead bark still clung to most of the stubs thus affected and when cut away showed the wood beneath dead and rotten, filled with the white mycelium of some decayed fungus. This form of the disease was confined largely to one side of the orchard where two badly cankered trees were observed. From the peculiar distribution it seemed likely that the pruning knife had spread the infection from the two diseased trees.

Collar Rot.

At the base of many of the trees large cankers are often observed. These sometimes almost or quite girdle the body, eventually killing the tree. They are usually accompanied by a roughening of the bark about their margins. In most cases they appear to be the same as the cankers on the limbs and upper part of the body. Whether they are of the same nature as the "collar rot" of King trees is a problem yet to be solved.

Scurfy Blister.

There is another phenomena almost constantly met with in affected orchards. This I have designated as scurvy blister. It is most frequently observed on the bodies of the trees, but may sometimes extend to the limbs. The outer layer of bark assumes a darker color and becomes raised or blistered especially along the advancing front of the disease. The epidermis becomes loose and peels away easily. The cells of the cortex take on a dark watery green and are soft and crumbly. The trouble spreads quite rapidly and then ceases very suddenly. The diseased tissue dries down and cracks away from the healthy cortex along the line of the advancing front exactly the same as in the case of the body cankers already referred to. The scurvy blister differs from the other cankers in that it never extends deeps into the bark and when scraped away shows healthy tissue beneath. It spreads from year to year and may be active almost any time throughout the summer.

Not New York Apple Tree Canker.

It may be well at this point to note the differences between the canker already described and the well-known New York apple tree canker caused by the black rot fungus, Sphaeropsis malorum Berk. The latter disease is often very destructive, not only in the state from which it was first described, but also in other states as well. It usually attacks old trees, although I have recently received fine specimens on young trees from Iowa and have observed it occasionally in New York. Diseased trees affected with the Sphaeropsis show a very dark, almost black, bark where the disease is active. The tissue becomes sunken and dry at once and the margin along the advancing front of the disease is sunken instead of raised or blistered. The line of demarkation is not so definite as in the blight canker. The distinctive character of the disease, however, is the early appearance of the fruit bodies of the fungus in the diseased area. These small black pimples are always formed in great abundance in a canker of any considerable size. No fruit bodies of any sort appear in the blight canker until late in the autumn or the following season. They then often show fruit bodies of a variety of saprophytic forms which have attacked the dead tissue. The old cankers of the two diseases appear quite differently also. The New York apple tree canker shows a rectangular cracking or checking of the bark that is characteristic and never observed in the blight canker. The Sphaeropsis canker is always black, the blight canker brown.

The Cause of the Canker.

The very general opinion of growers throughout those sections where the disease is most severe is that the trees were killed by freezing. A sudden fall of temperature below zero late in the autumn of 1902, following a wet and unusually long growing season is referred to by farmers as the initial cause of the trouble, the first marked effects of the disease having been observed the following June. The winter of 1903-4 was a very severe one, extremely low temperatures having been recorded throughout New York. In some sections the blacking of the cambium between the wood growths of those years is proof that the trees did suffer from the severe winter. That this weakening of the trees may have had much to do with their susceptibility to the canker disease I am willing to allow, but that it was the direct cause of the cankers finds no acceptance in my mind. Moreover, careful questioning of growers in the Hudson River region brought out the fact that the cankers were observed in the bodies of the trees previous to 1902 and a few of the affected trees had died before that time.

That the cankers were caused by some fungus was my first thought, but failure to find any fungus mycelium in recently cankered tissue and

A Few Words to Members of The Fruit-Grower Family

On or about the 15th of November the publishers of the Fruit-Grower will mail to every subscriber whose time expires previous to January, 1906, a letter containing a notation of the month in which his subscription became delinquent.

If every reader whose subscription expires December, 1905, or any previous date, will write us at once and send remittance, we shall be saved the trouble and expense of sending out this letter.

On January 1st, 1906, the subscription price will be advanced to $1.00 a year, and after that date renewals will not be accepted at any other price. In order that this advance in price will work no hardship on any member of the Family at this time, we will allow old subscribers to remit for from *one to four years in advance* at the old rate of *50c a year.*

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Bear in mind also that no matter how far in advance your subscription is paid, you may send remittance at 50c per year to pay you ahead from one to four years. It is our intention to allow everyone who reads The Fruit-Grower to take advantage of this offer, whether paid up or not, but remittance positively must reach us by January 1st, 1906.

When The Fruit-Grower was started nine years ago we printed sixteen pages as a rule, and very seldom over twenty-four pages, and at that time the rate of 50c per year was an equitable one. All readers have observed, however, that of late years we very seldom print under thirty-two pages, and frequently give sixty-four, and we have found that a publication of such high character as The Fruit-Grower cannot be furnished at 50c per year without causing us a great loss. Hence, it becomes absolutely necessary to advance the price, and considering the value given at this time as compared with The Fruit-Grower several years ago, this really is not an advance in price, for we believe that we are now giving more than the value of the extra 50c.

The publishers of The Fruit-Grower have also found from experience that they must depend largely upon their friends who are now regular readers of The Fruit-Grower for increasing its circulation, and we hope that every member of "the family" will make it a point to say a good word in favor of The Fruit-Grower to his friends and neighbors and make a strong effort to send in at least one new subscriber during 1906. We will allow a liberal commission to any one who will make an effort to secure new subscribers for us. If you care to make the effort, write for terms and sample copies and full information. Write at once to

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the non-appearance of fruit bodies until the cankers were quite old soon dissipated that notion. When fruit bodies of fungi did appear, they were of saprophytic forms of several species. No one species was observed to occur constantly in the diseased areas.

The Bacteria Found.

During May of the present year while examining a badly cankered tree in the University grounds, I was surprised and delighted to discover what I was at once sure was the cause of the trouble. It had been damp, rainy weather for several days and many thick, milky drops were oozing from the surface of a freshly cankered area at the base of a large limb. An examination showed this liquid to be alive with a short rod-shaped bacillus. The diseased bark was soft and watery and sap from within was found to be teeming with the bacteria. I had for some time suspected that the canker was a bacterial disease, but my failure to find an actively spreading canker had made certainty impossible. Pure cultures were obtained at once and a series of inoculations made. Inoculations direct from the diseased bark were made into a healthy pear tree and a healthy apple tree (Fig. 7). This resulted in well-developed cankers, especially in the pear tree. Inoculations of pear and apple twigs and blossoms were also made from the canker. These all gave excellent cases of blight in from ten to fourteen days. These twig blight experiments were twice duplicated during the season with pure cultures o fthe organism obtained from the canker. The period of incubation for the canker on the bodies of the trees was much longer. The exact time was not determined, but the pear took sooner than the apple.

Fig 7—Canker in Crotch of Pear Tree, Produced by Direct Inoculation from Canker on Apple Tree.

The twig blight of pears and apples became very severe in July and August throughout the section about Ithaca. The fruit was frequently affected. A large number of cultures from these different sources were obtained and a comparative study made of the organisms. Those from the twigs, fruit and cankers both of the apple and the pear were found to be the same. Inoculations were made from the pears to apples and from apples to pears, always with the same result, that the typical blight appeared in about ten days. There can be little doubt, then, that the organism of the apple canker is identical with that of the fire blight of pears and apple twigs, bacillus amylovorus.

Methods of Infection.

There are several ways in which infection from this disease may occur. No doubt there are other agents than those which I have observed. I shall, however, confine myself to cases that seem well authenticated by actual observation. I soon observed that a very large per cent of the cankers on the limbs and upper part of the body occurred where a sprout had been pruned away. For a long time I attributed this to infection from the pruning knife or from insects that followed the pruner to suck up the exuding sap. That this was in some cases a correct deduction will appear later. The riddle was definitely solved for me early in July. At this time twig blight became very prevalent. In the orchard under observation, the Greening trees suffered severely from it. The water-sprouts which were now being put out abundantly were especially subject to the attacks. Just how the disease is communicated to the twigs and water-sprouts I am not prepared to say. I believe it is generally attributed to insects. Once in the water-sprouts, however, the disease progresses rapidly down the succulent tissues toward the limb from which the sprout springs. If conditions are favorable and the sprout not too long, the bacteria reach the base and spread into the surrounding bark tissue of the limb, giving rise to a typical limb canker. If the sprout arises from the body, as is often the case in young trees, a similar result follows and we have a typical body canker. The dead spur or sprout soon drops away, and as its woody part rapidly decays for some distance into the limb or body, it is quite impossible after a time to tell just how the sprout was removed.

Inoculation by Pruning.

There were on the trees along one side of the orchard a large number of cankers that could not be explained in the ways already described. They formed collars of dead bark about the stubs of large limbs pruned out the previous season. Instead of forming a callous and proceeding to close the wound, the tissue had died often for a considerable distance back from the cut surface and in some cases the canker had run down the side of the adjoining limb. There were two trees on this side of the orchard that were badly cankered and from which dead and dying limbs had been cut the previous season. I at once suspected the pruning knife or the insects that followed after had been responsible for the infection. Proof of my theory came from an unexpected quarter. While making inoculations into the body of an apple tree on the station grounds, I had occasion to remove from near the base a large water-sprout of several years growth. This I did with my knife which I had but shortly before used to cut from a fresh canker a piece of bark for inoculation purposes. Sometime after I observed a well developed canker about this pruned stub.

Inoculation from Wounds.

Of a similar nature to this are the cankers that arise from wounds or bruises on the limbs and bodies of trees. These wounds commonly known as "barking" may be made by careless workmen in plowing or working about the trees or from the gnawing of animals, one of the worst of which in New York is the woodchuck. A large per cent of such wounds heal eventually, but frequently through the agency of insects or other means, these wounds serve as infection courts for the canker bacillus. An interesting wound infection came under my observation this season. In cutting a cankered branch from a tree I accidentally "barked" a large limb with the freshly cut end of the diseased branch. I thought little of it at the time but returning to the tree later to get material for

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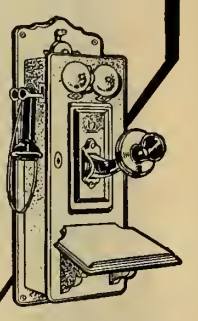

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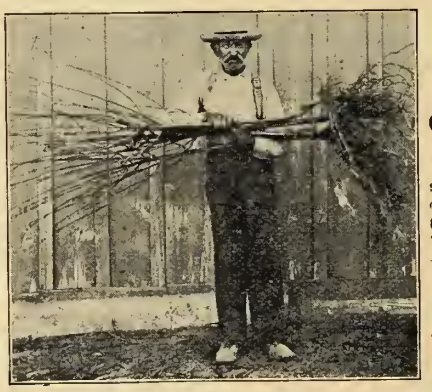

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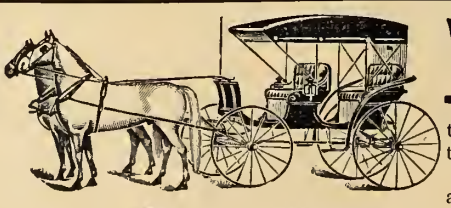

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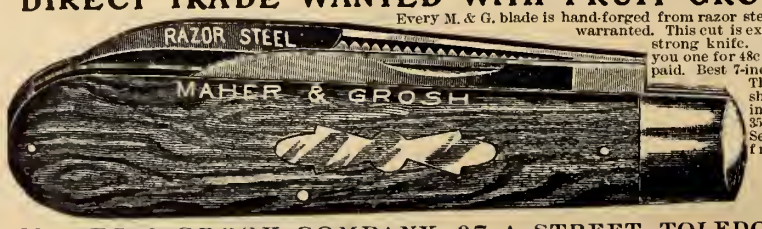

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cultures from the diseased stub, I was delighted to find on the wounded limb about the abrasion a large and actively spreading canker (see Fig. 3).

Disease Spread by Insects.

I believe that insects are responsible for a large number of infections, especially those on the bodies and in the crotches of the limbs. To prove this in most cases is quite a task, to say the least. A large number of the cankers especially at the base of the trees did not seem to have had their origin either in a bruise or from a blighted water-sprout. I was convinced that the puncture of insects was responsible for the infection. As I went from tree to tree one day on my weekly inspection, the proof of this conviction was presented to me (Fig. 8). You can see in this picture the hole made by the insects and surrounding it the well marked boundaries of a recent canker. Whether th borer itself caused the infection or whether it was brought later by flies that came to feed on the exuding sap cannot be said. In either case it was the borer that afforded the infection court.

As a general deduction, then, it may be said that infection occurs only through a wound of some sort. Moreover I believe that the infection court must be of such a nature that

Fig. 8—Showing Canker About Hole Made by Borer Near Base of Tree.

it will not dry out quickly. An abundance of moisture is known to be necessary for the rapid development of the blight organism. This was repeatedly demonstrated in the large number of pure cultures which I had under observation during the summer. The growth was most abundant and vigorous in liquid media. Where the diseased tissue of freshly spreading cankers was cut out with a knife and the wound exposed without any other treatment, the canker ceased to spread and the place healed rapidly.

Part Played by Secondary Fungi.

There is one feature of this canker disease to which I have been able to give but little attention, but which I feel sure is to a large degree responsible for its destructiveness. This is the entrance of secondary fungi and bacteria through the infection courts thus formed. In the majority of cases the canker does not spread sufficiently to kill the tree. In fact the host often succeeds in quickly healing a canker wound completely. The dead tissue of the canker offers an excellent pabulum for saprophytic fungi and bacteria of various sorts, and these quickly avail themselves of the opportunity presented so that in a very short time after the canker is formed the mycellum of different fungi may make its appearance in the dead tissue. Where the canker occurs in the crotches of the limbs there is the added factor of abundant moisture which is held in the cavity, the dead tissue acting as a sponge. Under such conditions certain decay-inducing fungi quickly extend their operations to the heart wood, and even though the wound be eventually healed, the tree is permamently affected with heart rot. This was especially noticeable in the case of the pruned limb cankers. The collars of dead bark were like sponges to hold moisture for the heart rot fungi which quickly spread to the wood of the healthy limb through the entrance afforded by the dead pruned stub. Where a pruned surface heals over properly there is no dead bark to act as an infection court, and fungi find it much more difficult to effect an entrance through the dry smooth surface. In the Hudson River Valley the high percentage of dead trees is due, I feel quite sure, to the work of these secondary fungi which, gaining an entrance through the dead canker spot, spread gradually through the heart wood and even through the living bark. Several well-known semi-parasitic wound fungi were found repeatedly in affected trees. This matter of the secondary wound fungi is a problem in itself and will without doubt yield interesting and profitable returns to the investigator.

Treatment.

We now come to the portion of the subject that is of special interest to the grower, and which to him is the end and aim of all investigations into the nature of the disease, namely, the means of combating it. Any intelligent treatment of a disease depends upon a more or less complete knowledge of the nature of the organism causing it. The work of the past year has, therefore, been devoted almost entirely to a study of the phenomena exhibited by the disease and the cause of the same. I have, however, made some preliminary experiments which seem to give some indication of the methods to be used in combating it. The first and most difficult demand of the grower is that we CURE the diseased plant. In most cases this is impossible or the value of the plant does not warrant the effort required to save it. But in this case the saving of a tree just coming into bearing seemed worth the while. I, therefore, treated cankered trees in various ways. I will not burden you with unsuccessful or doubtful remedies. The treatment which at present appears most successful is to clean out the canker, i. e., remove with a sharp knife all diseased tissue, swab out the wound with a 0.2 per cent (two-tenths per cent) solution of corrosive sublimate or a 3 per cent solution of copper sulphate and when dry paint over thoroughly with some heavy paint. The painting should be repeated later in the season. This sort of treatment was given in the spring or early summer so that wounds would have time to heal well, which they did in most cases. A sharp watch should be kept for the appearance of these cankers and they should be promptly cut out and treated.

Cultivation Helps to Make Trees Susceptible.

It has long been known that highly fertilized and cultivated pear orchards suffered most from attacks of the twig blight and it is not surprising that the same seems to be true of the apple trees. Although my observations on this point are limited they seem sufficient to make it a safe statement that cultivation and fertilization greatly increases the susceptibility of the apple tree to this disease. This seems to have been shown in the case of one orchard visited. One end of the orchard had not been cultivated for several years, while the remainder had been cultivated every year since setting until the last two seasons. The untilled portion showed a very low per cent of affected trees, while the cultivated trees had almost completely gone out.

Susceptibility of Varieties.

My observations seem to show that there is also considerable difference in the resistance of different varieties to the disease. Of those varieties that have come under my notice, only one seems to be entirely immune to attacks of the organism. In an orchard of some 200 trees, all have gone out except seven Wolf Rovers, which show not a single canker and are strong and thrifty. A provisional arrangement of the varieties observed according to their resistance ability may be said to be: Wolf River, Talman Sweets, Pewaukee, Red Astrachan, Tetofsky, Grimes Golden, Wine Sap, Fameuse. The more susceptible varieties seem to be: Baldwin, Ben Davis, Mann, Hubbartson, Fall Pippin, Stark, Greenings.

Observations made in several orchards where top grafting has been practiced indicates that desirable varieties especially susceptible to the canker may be grown by top grafting on resistant stocks. Talman Sweets and Wolf River seem to be especially desirable. The grafts should be set well out on the main limbs to avoid the formation of large crotches by the scions. Continued observation will no doubt revise and add to the list of resistant and susceptible varieties.

The writer appreciates the incompleteness of his work in many points and begs that you will favor him with any observations or suggestions that you have to offer, now or at any future time. H. H. WHETZEL.

Cornell University, Ithaca, N. Y.

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My paint is so good that I make this wonderfully fair test offer:

When you receive your shipment of paint, you can use two full gallons—that will cover 600 square feet of wall—two coats.

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This gives you an opportunity to paint your buildings when they need it, and pay for the paint at your convenience.

Back of my paint stands my Eight Year, officially signed, iron-clad Guarantee.

This is the longest and most liberal guarantee ever put on a paint.

For further particulars regarding my plan of selling, and complete color card of all colors, send a postal to O. L. Chase, St. Louis, Mo.

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W. G. Campbell, Jr., General Manager James M. Irvine, Managing Editor

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In compiling a list for Forty Thousand subscribers, it is an easy matter to make mistakes, but we guarantee fair treatment to everyone. If you find an error in your address tag, or do not receive paper promptly, write us and we will trace matter up at once.

Entered as Second-Class Matter in the Postoffice at Saint Joseph, Missouri

Vol. 16. NOVEMBER, 1905. No. 11

Farmers Who Are Land-Hungry.

The other day the editor of The Fruit-Grower spent a day in a farming community in which he had never been before, and the gentleman who drove him around told all about the farmers, their lands, their crops, etc. All the farmers are prosperous, for it is one of the best farming countries on earth. All have good farm homes and barns, and their crops this year are very large. But it seemed to us, from what our informant told us, that most of the farmers are hungry—land hungry. None of the farms were less than a quarter-section of land, worth from $80 to $150 per acre. A farm of 160 acres of good soil is a good farm, but many of these farmers could not enjoy what they had, because they wanted more. One man owns nine quarter-sections of this land; in a Missouri county he owns 400 acres more of just as good soil, and in the wheat belt of Kansas he owns a great deal more land. This man has a wife and one child, and works year in and year out as though his very existence depended upon it; he is worth perhaps half a million dollars, but is so busy looking after his farms that he finds little time to enjoy life. Are there any farmers like this in your community? Farmers who are land hungry, and who bend every energy to the making of money, that they may buy more land? Have you not seen many men of this type? Men who wear their lives away, who work their hired help like slaves, and whose wives and whose daughters work even harder? And the farmer boys on such farms—no wonder they leave the farm. We hear a great deal nowadays about the greed of corporations—and they are certainly greedy enough. But is it any less wrong for farmers to be as greedy? Sometimes we think it is worse in the farmers, for better things are to be expected of them. We hope none of The Fruit-Grower readers live that way. If such a farmer reads this paragraph, let him consider that he can take none of his land with him; he will leave this world bare of everything save his character—and the right kind of character cannot be built up by devoting one's time solely to the making of money. Enjoy life, and help your family to enjoy living; get around and visit your neighbors; spend a little money—no, not a little money, but lots of money, if you have it—in making the farm home more beautiful and convenient, and farm life more attractive. Do this, and you will live longer and be happier, and so will all the members of your family. And you will leave the world better than when you found it.

No Cheap Apples in Colorado.

A reader of The Fruit-Grower recently wrote us to inquire where in Colorado he would be able to buy some apples at a low price to ship in bulk; he said he did not want to barrel the fruit, but would ship it in bulk to Texas points. We had to tell the gentleman that we knew of no place in Colorado where fruit of that kind could be had, for it has been our experience that Colorado apples are usually of too good quality to justify their being handled in this way. There are no low-priced apples anywhere this year, and the fruit which is well cared for is never sold at a low price in Colorado, for the market has taken all the apples grown at fancy prices. This is a splendid tribute to the work of Colorado orchardists. Would there were more like them.

Help for Horticultural Societies.

The St. Joseph (Mo.) Horticultural Society has had the most interesting and best-attended meetings during the past summer of any year in its history. Perhaps the experience of the society will help others. The laws of Missouri permit the county commissioners of each county to appropriate a sum not exceeding $150 per year to encourage agricultural exhibitions. In many counties this sum is annually appropriated for the benefit of the county fair. Last spring the St. Joseph Horticultural Society appointed a committee to wait upon the county commissioners and ask that this sum be appropriated for the use of the society at its various meetings. The sum of $100 was set aside to pay premiums, and at every meeting of the organization during the summer the members have made good exhibits of their fruits as they ripened, and premiums were paid from the fund donated by the commissioners. At one meeting an appropriation was made from the funds of the society to pay premiums on roses exhibited by the wives of members; another month premiums were awarded for the best fruit pies made by the wives and daughters of members. During the summer the meetings were in the form of picnics, and the season was most enjoyable. The meetings have been helpful and everyone enjoyed them fully. Other societies may secure this help from the county authorities, and it will be found a most effective way of increasing the interest in the society.

Express Companies Opposed to Parcels Post—Of Course.

Express companies naturally oppose the adoption of a parcels post law, for they are interested in carrying all packages which would be sent by mail if such a law were adopted. But there is every reason in the world why farmers should want a parcels post law, which will enable them to have packages shipped by mail which now go by express, at exorbitant charges. With a parcels post, for instance, one could order bulbs for fall planting and have them come by mail, and the charge would be reasonable. But where bulbs are to be sent by express, with an extra charge for every transfer point, one has to limit one's order to a small quantity. Farmers ought to be united in favor of the parcels post, and they ought to make this fact known to their representatives in Congress.

Don't forget to renew your subscription. You can renew for not more than four years at 50 cents a year; after January 1, rate will be $1 a year.

How many of The Fruit-Grower readers have practiced summer pruning of fruit trees? Tell us your experience.

Future of Apple Orcharding in the Mississippi Valley.

Within the past few months, after the failure of this year's apple crop was certain, many persons have seriously discussed the question as to whether apple orcharding in the Middle West will be profitable again.

This subject is very timely now. The last full apple crop in the Mississippi and Missouri Valleys was that of 1897. Fruit was plentiful that year, of good quality, and sold for high prices. The next year the crop was not nearly so large, and in 1899, the year after the cold winter, it was almost a failure. In 1901 and 1902 the crop, as a whole, was profitable, yet not a full crop, by any means. In 1903, 1904 and 1905 the crop has not been profitable, and hence the raising of the question as to the profitableness of apple growing.

Before deciding upon this question, one should consider the causes which have led to the poor showing of the past few years. The chief cause will be generally admitted to be the weather conditions at blooming time or immediately thereafter. Does anyone believe that the climate of the Middle West has changed permanently? We will not expect these weather conditions to continue, nor does anyone who is pessimistic over the outlook for apple culture. We believe the weather conditions will average up well, taken over a long period of years, and that we have simply had a succession of bad years at a time when the apple crop was easily injured.

Even this year, in every part of the country, there are orchards which have good crops of fruit. These trees were subject to the same conditions which affected neighboring orchards, and yet they bore fruit, while other trees were barren. In many cases this condition was due to the health and vigor of the trees; they were better able to withstand unfavorable climatic conditions, just as persons with good, strong lungs are able to withstand severe weather which would be beyond the strength of persons weakened by disease or with delicate constitutions.

There is a lesson to be learned here: Orchards must receive the attention that will keep them thrifty and vigorous. In some places this will mean that they must be cultivated; under other conditions it will mean that they must not receive too much cultivation; to bring some orchards into thrifty condition will mean that they must be fertilized; and to keep trees healthy and vigorous means that orchards must be sprayed to prevent injury by fungous diseases and insects.

Trees which are weakened by disease are not able to withstand unfavorable conditions. Last year, for instance, most of the apple trees in the Middle West shed their foliage unusually early, and all during the summer the foliage was unhealthy, from apple scab. It was hardly to be expected, therefore, that these trees would be in good condition last spring, with strong, vigorous fruit buds, and there were many persons who predicted last winter that the apple crop for 1905 would be very short, because of this condition of foliage last summer. It is a fact that some orchards, which were free from scab last summer, bore fairly good crops of fruit this year, showing that healthy foliage is necessary one year for next year's crop. Many growers stopped spraying in 1904, after the late freze had destroyed the crop; as a result, apple scab attacked the foliage of their trees, the leaves were unhealthy, and fruit buds were not strong and vigorous; and of course there was no fruit this year—a most favorable season would have been required to have permitted these weakened trees to bear a crop this year.

Apple growing will be profitable in the Middle West, where trees of right varieties are properly planted—but they must receive better care than our grandfathers' orchards received, for the reason that insects and fungous diseases have increased, and we must fight for a fruit crop. But do not give up the fight. In every section where apples are profitably grown, this fight must be maintained. Some persons, of course, will not be willing to make this fight, and they will get out of the business. But the man who will use the means at his command to fight insect and fungous enemies will find his profits all the larger.

There is a growing sentiment that smaller orchards will be the rule, for the reason that the required care cannot be given large acreages. When one tree needs spraying, every tree in the orchard needs the same attention, and it is almost impossible to get enough help to do the work properly in the required time. The tendency for years has been to plant in large blocks, but the pendulum is swinging back, and smaller orchards, which can be well cared for, are more popular. By smaller orchards, we do not mean one of an acre or so, but orchards of forty, sixty and eighty acres, as contrasted with the big bonanza orchards which have been so much written about, but which, as a rule, have never been profitable.

This matter is worthy of careful consideration. We believe the Middle West can grow as fine apples as were ever produced, and that the business will be profitable. Our methods must be somewhat changed, however, to adapt them to the changed conditions. Is this not the opinion of members of The Fruit-Grower Family?

For the encouragement of those who are pessimistic, it may be said that the foliage on apple trees has been better this season than for many years, and the orchardist who will care for his trees next season will start out with brighter prospects for a good crop than he has had for some time.

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SEND US 25 CENTS to pay express charges today, cut out this ad., state which one of the six colors you want and we will send you a full quart can of that color, our highest grade Seroco ready mixed house paint, a good brush, the valuable instruction book "How to Paint," the complete 16-page book of color samples, all information, how to calculate the amount of paint required to cover a given space, how to select harmonizing colors, everything will be sent to you immediately by express prepaid, not another penny for you to pay. You will get enough paint with material free to do quite a job and paint information that you ought to have. SEND **25 CENTS AT ONCE.** (Stamps accepted). Address,
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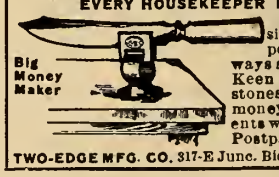

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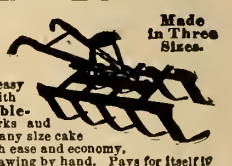

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THE FAMILY CIRCLE

"I have been a subscriber of The Fruit-Grower, and by following its valuable advice I have made a clear profit, above all expenses, of $1,000 in three years. I cannot get along without The Fruit-Grower; it is growing better all the time."

That is what J. M. Dickens, Neodesha, Kan., wrote the other day, when he renewed his subscription for two years.

Of course, that made us feel good, and we told the gentleman so.

We also told him how he could show his appreciation in a very practical way. Let us tell all the members of The Family:

Get us some new subscribers before the subscription rate is advanced on January 1.

That's the way to show your appreciation.

Why should not every reader of The Fruit-Grower get at least one new subscriber before the rate advances?

It can be easily done. In every neighborhood are farmers who have orchards and fruit gardens, or who ought to have them, and all of them should read The Fruit-Grower.

We know what they will say when you ask them to subscribe:

"I have only a small orchard and grow fruit for home use only." "My orchard is a small part of the farm; if it bears fruit all right, and if it fails to bear, all right; but I don't take enough interest in fruit to justify my subscribing." "The women folks look after the fruit crop; they are the ones to see."

The foregoing are some of the excuses offered. You will be told that the fruit crop is so uncertain that one is not paid for giving any time to the orchard.

And yet these persons are the very ones who ought to read The Fruit-Grower. They are the ones who need to know the experience of others.

When a man tells you his orchard does not pay, and he cannot subscribe, suggest to him that perhaps if he gave the orchard better attention it would yield better returns. And one way to help make the orchard profitable is to read The Fruit-Grower and learn the experience of other growers who are successful.

Will you not do this for us? Now is the time to do very effective work. Subscriptions will be accepted until January 1 at rate of 50 cents a year; after that date rate will be $1 a year.

And one other thing:

Look at the date on the wrapper in which you receive this issue of The Fruit-Grower. If you time has expired, renew today. You can renew at rate of 50 cents per year for four years in advance, but for no longer period.

Here is another way in which readers of The Fruit-Grower can help us:

Whenever you write to an advertiser, say you saw his advertisement in this paper.

How can that help us?

In this way: Every advertiser wants to know what publications are profitable to use as advertising mediums; what papers bring results. Those papers which bring results are used, those which do not bring results are dropped.

As everyone knows, a good advertising patronage is necessary to the success of evry publication—the subscription department does not pay its own way, as a rule.

The Fruit-Grower is no exception. If any money is to be made, it must be made from the advertising patronage. And in order to get this patronage it must bring returns to advertisers.

And how are the advertisers to know if The Fruit-Grower brings results unless you state, in answering advertisements, that you saw the advertisement in this publication?

See the point?

By mentioning The Fruit-Grower you can help us hold our advertising patronage.

Again: Always address your replies to advertisements just as the address of the firm is given in the advertisement itself. For instance, the address of Burlington Basket Co., is given in the advertisement as follows: "Burlington Basket Co., Box 111, Burlington, Iowa."

In answering the advertisement of this firm, use the box number given, for in some cases the number of the box, or the street number, gives an indication of the paper from which the reply comes. This is not always the case, so it is always well to mention The Fruit-Grower in your letter.

Will not every member of The Fruit-Grower Family do this?

Every reader will answer one or more advertisements this season, for the articles advertised are needed on the farms. Why not, in answering, state that the advertisement in The Fruit-Grower is responsible for your letter, so that this paper shall have credit? It will help us immeasurably.

Remember this in answering advertisements. This is a way to help us in a very effective way.

It is intended to make The Fruit-Grower better for the coming season than it has ever been before, and we want our readers to help us in this work.

We want them to sit down and write us a letter suggesting improvements for the coming year. If any feature of the paper should be changed, to improve it, tell us how you would bring about the change.

If any new features can be added which will improve the paper, tell us about it. Help us to make The Fruit-Grower better than ever before. Your suggestions will be appreciated, even if we cannot adopt all of them—but we will adopt some of them, at any rate.

Now that the subscription season is at hand, we want to eall attention again to a few things which need to be remembered at this time:

When you send your renewal, do not fail to write your name and address plainly. Don't make a funny little curlicue and then wonder why we cannot understand that it is not some certain letter of the alphabet. Our subscription clerks are not well acquainted with your name, you know, and you will have to write plainly for them.

And if your name is now on our list as J. M. Smith, sign your name that way. Don't write it John Smith, and then expect us to know that J. M. Smith and John Smith are one and the same. Write your name the same way every time.

If you change your address from one place to another, give your old address as well as the new one. This is important.

And above all things, see that your letter is properly addressed and sealed, and that your letter and inclosures are placed therein. Every year we get many letters to which no names are signed; other times money orders are received, with no letters to show from whom they come.

Think of all these things when writing The Fruit-Grower—or anyone else, for that matter.

Now, if members of The Fruit-Grower Family will remember these things, and will act accordingly, they can help us very much during the coming season.

Let us sum up these points again:

1. Renew your subscription at once.
2. Try to get your neighbors to subscribe.
3. Mention The Fruit-Grower when answering advertisements.
4. Write your name plainly, and see that your mail is properly addressed and sealed before leaving your hands.

Is this asking too much?

We think not, and that every member of The Fruit-Grower Family will help us in this work, to the end that the coming season shall be the best we have ever had, is the earnest desire of BROTHER JONATHAN.

WARNOCK'S TREE PAINT

Has been advertised to the world for more than two years. We question if any other make of Tree Paint or device ever offered to horticulturists has met with such general favor and universal endorsement as has been given our Tree Paint.

Consider the following questions: Do you want to protect your trees from Rabbits, Mice, Borers of all kinds, Canker Worms, San Jose Scale, Oyster Shell Bark Lice, Ants, Sheep and Goats? In doing so do you want to reduce labor to the lowest fraction? Do you want these results for the least outlay in money? Do you want to know your trees are perfectly safe should it rain forty days and forty nights? Of course you will say I do to all these questions. A postal card will put you in correspondence with us and you will receive testimonials that will convince the most skeptical, because they are given by the most reliable, unbiased orchardists. Address

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817 S. Cottage St. Independence, Mo.

Wooden Veneer Tree Protectors

will protect your trees from rabbits, mice and borers; will also protect the trunks from sunscald. Can be left on throughout the year, and will last for years. A cheap, effective protection. The accompanying cut shows the protector as applied to a tree. This is the protection recommended by most of the horticultural societies, and millions of them are in use. We are headquarters for them. Write us for prices.

Berry Boxes & Fruit Packages

We handle all kinds of packages, and received the Gold Medal at the Louisiana Purchase Exposition, 1904, for our exhibit. During the winter season low prices are made on boxes. Ask us about this. Don't wait until the rush is on, but send list of your wants early.

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Apple, two and three year. Special prices on large orders of Ben Davis and other commercial varieties.

Standard Pear, one and two year. Fine lot Kelffer.

Cherry, one and two year.

Catalpa and Black Locust Seedlings.

Roses, Shade Trees, etc.

Send Us a List of Your Wants
Personal Inspection Invited

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Englewood Station, Chicago, Ill.

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We have an unusually fine stock of One-Year-Old and June Bud Peach Trees, One and Two-Year-Old Apple, Pear, Cherry and Plum Trees, Grape Vines, Shrubbery, Roses, etc. Also all kinds of Small Fruit Plants. Strawberry Plants by the Million. Send for Catalogue and Price List before you buy. Get our low delivered prices.

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Fifty varieties one-year buds, two and three-year grafts. Peach, Cherry, Pear and Plum Trees; a good assortment of varieties. Shade Trees, Ornamental Shrubs, Roses and Small Fruit Plants, Gladioli Bulbs, Cowee's World's Fair strain.

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Big Horn Basin Gov't Irrigable Lands

WORK IS BEGUN ON THE RAILROAD which is to traverse the lands described in my article on page 17 of the October Fruit-Grower, and will be pushed to completion before July next. **Every quarter section** of the land I represent, which is to be opened to settlement in December, **is within three miles of this railroad.**

You have a chance to get some of this land by attending to the matter at once. Send for illustrated booklet, giving all particulars. Address

J. W. GREGORY, ST. JOSEPH, MISSOURI

If your subscription to The Western Fruit-Grower has expired, renew today.

Maj Holsinger's Department

Scions from Bearing Trees.

"Is there any merit in selecting scions from bearing trees?"—J. Y.

This question has been under discussion for quite a long time. Generally the consensus of opinion is favorable, but why? It has ever been my experience that the first trees to bear are diseased trees, especially those that are infested by borers. I have been unable to see any difference. As to slow bearing sorts being hastened by top grafting from bearing trees, is a myth. The first Yellow Bell I ever saw was on a graft top-grafted. The scion grew and bloomed and ripened a splendid specimen. As to the bearing of tardy varieties like Spy and Yellow Bell, I feel sure I can bring them into bearing much sooner than they otherwise would by girdling. In my expeience I would use any healthy scions of the variety and feel certain of satisfactory results. Theories are O. K. when supported by common sense; often they are mere twaddle.

No Peach Yellows in Kansas.

A. R. H., Hagerstown, Md.—Wants to know "how to treat peach yellows."

That is a poser for one who lives in a community that is immune from this disease. When in Maryland 40 years ago I first saw this disease. My father-in-law had a splendid orchard until the disease struck it and soon the orchard was destroyed. I remember visiting this orchard with him. He called my attention to the first tree affected, being on the southwest side of the orchard and then tracing it in a northwesterly direction, widening as it went. He was of the opinion that the disease was carried by the wind that was prevalent in that section. I have always been of the same opinion. That it may be inoculated, as can pear blight, is quite probable. I think, however, it is indigenous to certain sections, while there are other sections that are immune. I have never seen a well defined case of peach yellows in Kansas. This, too, after having purchased trees from infected district. As to remedy for peach yellows, when once established, I know of none. The only remedy is to move to the Southwest, where it is as yet unknown.

Time for Digging Dahlias, Tube Roses and Gladiolas.

It is my uniform custom to allow them to remain in the ground until well frosted. After tops are killed I cut off near the surface, digging when dry and storing in a cool, dry place. They are safely kept under about the same conditions as is necessary to keep potatoes. Dahlias should not be separated, as some will be injured thereby. In the spring they will start to sprout and then should be severed by a sharp knife, for if they are torn apart some will be destroyed.

Manure Around Fruit Trees.

Sometime ago I saw a young orcard with manure piled about the trees. This is a serious mistake, as it will encourage the mice to harbor in the manure and during winter, when feed is scarce, they will feed upon the bark of the tree, girdling it. Never use manure in this way, nor place it about the roots, but scatter broadcast if you would desire best results.

Asparagus as Hay.

I was mowing my asparagus today. Have you ever known that it is a good cow food? Some years ago I was induced to cure it for hay, seeing the cows eat it after having cut it, intending to burn soon as dry enough.

Prof. Rose informed me a few days since that he considered it "not only a good hay for cows, but that he believed it would pay to grow it for that purpose, were there no other consideration of value attached to it." My cow eats it while in a green state and seems ravenously fond of it when properly cured; whether or not it possesses much value as a food, this I know: the cows eat it and seem to do well on it. And it is no more trouble to cut and cure for hay than to get rid of it in some other way.

R. E. B., Rich Hill, Mo.—I am an amateur grower of the choicest fruits for family use, grow everything in hills and practice intensive culture. I am sorely troubled over a disease in my red raspberry canes, the tips especially break down, which I cut off at that breaking place; it threatens to ruin my patch of 300 hills. I inclose sample of the affected tips, do not know whether it is anthracnose or what to do to stop it. If you will be good enough to inform me what it is and what to do for it now and hereafter, I will very much appreciate the favor. A description of height to nip red raspberry plants first and second year in the Western Fruit-Grower, would be very helpful to me and no doubt to other readers. Will kainit drive away white grubs from strawberry plants?

The canes sent me have been attacked by the red necked agrilus. The eggs of this insect are usually deposited in July and the tiny young larva when hatched, eats into the cane. These will break readily. The parent is a beetle about 3-10th of an inch long, with a small bronzed head with a bright coppery neck, and burnished black wing covers. The under side is of a uniform shining black. The only known remedy is to cut out all infested canes and burn. We usually cut back our red raspberries to 2½ to 3 feet. As to kainit, I have had no experience, but knowing something of the habits of the white grub I have serious doubts of its keeping this insect away. FRANK HOLSINGER.

Missouri Society to Meet in Kansas City, Dec. 28-30.

A letter from Secretary Goodman of the Missouri State Horticultural Society says the annual meeting of the society will be held in Kansas City, December 28 to 30. Reduced rates will be made on the railroads. The Coates House will be headquarters and will make special rates for members. The meetings will be held at this hotel, as was the meeting of the American Pomological Society.

Mr. Goodman writes that horticulturists from other states are being secured for places on the program, and in the December number we hope to be able to present the program of the meeting.

Southern Illinois Horticultural Society Meeting.

The thirty-second annual meeting of this society will be held at Olney, Ill., Nov. 21 and 22. The premium list shows that the fruit exhibit will be a feature of the meeting. Premiums of $1.50 for best plate of apples and $1 for second best plates are offered for apple exhibits. Entries are open to the Southern Illinois district only, except in the case of fruits and seedlings not previously exhibited. J. W. Stanton is president of the society and E. G. Mendenhall is secretary.

Blueberry Experience.

I have written several communications for publication on the blueberry, or improved huckleberry. After another season of work on the lines of improvement, so to speak, I wish to say that my expectations have been fully realized and even more. I secured from a friend in Maine a small lot to grow for comparison and I now have them from four different sources. All are as nearly alike as can be, but I have one sort of which I call "The Perfection" which I secured here in the hills, which are about three times as large as some which I have received from other states. I have been selecting and propagating from the largest and best of all I have and will next year try to hybridize it for better results still.

I also found growing here a fine seedless persimmon of which I set a lot of grafts, got a fine lot of them growing; not many, but some of them are ripe now. I want to send a case to St. Joseph market and test its value.

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The Reliance Company has nine full mining claims in Hell Canon about twenty miles from the city of Albuquerque, New Mexico, on the Santa Fe R. R. Three of these are **Gold Placer** claims. These have been thoroughly explored and carefully tested by the best mining experts in the country. They report that at the smallest estimate these claims carry over 450,000 tons of gold-bearing gravel. Every ton of this will yield from $8 to $300 a ton. It is all ready to put through the mill and can be treated at a cost of less than $1.00 a ton. This will give at least $7 net profit from every ton, or $3,150,000 to be given to the stockholders as dividends, just as soon as the mill is completed. This will give you $24 for every $1 you invest today. That is the very lowest estimate value that can be put on it, for through the entire center section the gravel is extremely rich in gold. Competent mining men assert that from $10,000,000 to $25,000,000 will be taken from these claims.

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In addition to these placer claims the Reliance Co. has **Six Gold and Copper Quartz Claims** which they are rapidly developing. Already they have three tunnels and numerous shafts, and have opened up a gigantic vein rich in gold and copper ore.

Mr. Wm. A. Jenks, M. A. I. M. E., one of the most eminent and trustworthy mining engineers of this country, whose report can be thoroughly relied upon, says of this vein: "This giant vein with its numerous mineral zones is so persistent in its course and so strong in itself that it must go to great depths. The quantities of rich ore that can be mined from this are beyond calculation. The Reliance is an exceptionally fine gold proposition with an immense copper business looming up in the near future. This company has particularly attractive features seldom seen in so good a location."

DIVIDENDS EVERY MONTH.

From this vein the company has for the past eight months been producing rich ore that they are shipping to the smelter. This ore has been growing richer and richer every foot deeper they go down. A recent shipment of 44,000 pounds from the Belvidere tunnel gave a net return of $403 after paying all smelter charges, and a smaller shipment from the Folsom netted $314. The ore averages over $30 to the ton in gold and copper. Immense quantities of this ore are being mined and stored on the dumps. In a recent letter from the superintendent he informs us that they are now taking out ore that averages $40 to the ton.

By the first of the approaching year the company will be shipping large consignments of this ore regularly to the smelter and will begin to pay **Regular Monthly Dividends** to the stockholders. The earnings of the company will increase as the production of the mine grows larger and the dividends will grow bigger. As soon as the company's mill is completed they should be paying at least 20% to the stockholders.

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We recommend Reliance stock to you as the best investment on the market today. It has the smallest capitalization of any mining company. This gives every stockholder the opportunity to get large dividends. It is a proven mine and is producing and shipping ore of high value. It is on a paying basis and will soon be paying **Big Dividends to the Stockholders.** We urge you to buy it now at the low price of 50 cents a share. This price is bound to advance soon. Buy now before it advances. There will be a big demand for it when the dividends commence and the stock will advance to more than $1.00 a share. This stock offers you the best opportunity to get big dividends and a steady and permanent income for life.

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Inside of three months from the time the mill starts the company will pay to each stockholder every cent that has been paid for this stock. From then on, the dividends will be large on account of the small capitalization.

Send Your Orders Now for the Stock at 50 Cents a Share, to

H. E. STEPHENSON & CO., Bankers and Brokers

(Member of Boston Mining and Stock Exchange.)

262 WASHINGTON ST., BOSTON, MASS.

Expect to do so soon. This persimmon is largest size for native.

I want to further state for Mr. Benj. Buckman's benefit (the veteran fruit-grower of Illinois), that we have some very fine quality black haws here. As to the blueberry's importance I want to quote a Kansas City packer's correspondent's letter from East Tawas, Mich., dated July 18:

"The annual harvest of blueberries has commenced. The plains of Iosca County have for the past four summers yielded great crops of this luscious berry without a break, which is unusual; it is estimated that about 10,000 bushels will be shipped from the stations in this county. During the season whole families camp out on the plains and pick berries and make more money in this way than in any other. The blueberry crop is worth more to those interested in it than the wheat crop of the county, as the cost is only the picking and marketing."

The above from July 18th "Packer." This is one illustration of the importance of the blueberry. I am trying to make them better.

The muscadine is another of our wild fruits of which I am interested. I write this in response to numerous requests from your subscribers, many of whom have written me requesting me to give it through your paper. If you will give space to it, I will give my manner of growing, etc., in a future issue. H. O. LANE.

Mena, Ark.

Work in the Strawberry Bed This Fall.

Autumn is an important time in the management of the strawberry bed. It should be given such attention as will prepare the plants to do their best at fruiting time next spring. All weeds and grass which may have appeared should be pulled out, and the patch left clean as can be. Too many strawberry fields go into winter foul and weedy, and of course they are in this same condition next spring, with little opportunity to clean them out then. Do this work this fall.

Another thing which should be attended to now is the thinning of the plants. Most persons allow too many plants to remain in the rows. Growers in Southwest Missouri have found it a good plan to go over the fields after the first frosts, when runners will not likely be formed again, and cut out all late-formed runners, and also cut out many of the plants which have rooted, leaving the plants in the row perhaps six inches apart. This thinning of the plants insures better fruit next spring.

Of course, someone will say it would have been better to keep these runners from forming than to cut them off after they have rooted. That is true. The theoretical way would have been to cut the runners off as soon as thy put out, but, practically, very few growers are able to do this. And now when more runners will not form, the plants can be thinned with a sharp hoe, and the plants which are left will be better prepared to bear a crop of good fruit next spring.

Don't neglect this thinning until spring—you will not do the work then, even if it were practicable. Now is the time, and you will be pleased with results, provided your plants are too thick—as they are in most fields.

Making of Vinegar.

So many times we start but fail to make vinegar out of the cider which has been made from the wind-falls or cheap grade apples which accumulate during the fall season.

If the farmer will bear in mind the agents or factors at work in the changing of cider into vinegar, he is not likely to go astray; however, it is not infrequent to meet with individuals who have fifty barrels of cider on hand, failing in their efforts to convert it into vinegar.

Should a farmer wish to grow corn, he plants the seed, otherwise he would not expect to secure results; if he seeks a stand of clover, he sometimes plants it with his wheat which is first harvested, then the clover crop follows. Thus, to make vinegar, which is the result of growing two crops of micro-organisms, it is necessary that the seeds for the crops be present; that is, the yeast germs must be present for the production of hard cider—this is cider in which is found alcohol, then when the alcohol has been manufactured by the yeast germs, the seed for vinegar making or acid germs must be at hand to change the alcohol into acid. In other words, the sugar in the cider is changed to alcohol by yeast, and the alcohol into acid or vinegar by rod-like germs.

To grow clover, you must have sunshine, warmth, plenty of air, and moisture. These come with the spring and summer seasons. In the same way, to grow the micro-organisms which are going to convert the cider into vinegar, you must have warmth, plenty of air—the moisture and food are already in the cider. Two conditions must therefore be furnished: A temperature which is favorable, between 75 degrees F. and 90 degrees F., and plenty of air. That is, a half-barrel of cider will change into vinegar more quickly than a full barrel, if left open at the bunghole. Try this by taking a shallow dish of sweet cider, covering it loosely, and allowing it to stand in a warm room. In less than one month you will have excellent vinegar.

What about the seed which has already been referred to? To start off vinegar making, you will find it advantageous to add mother-of-vinegar to the cider. This mother-of-vinegar if not of too long standing is simply a mass of living micro-organisms which at once go to work in the production of vinegar. Ordinarily there is a sufficient number of alcohol and acid germs on the fruit which is used in making cider to start the cider on its way towards vinegar, but this is not always true. It is well to beware of new barrels, oil barrels and the like for vinegar making—they do not contain the seed as do old vinegar barrels.

In conclusion, the essentials for vinegar making are a suitable temperature, 75-90 degrees F., plenty of air, and the seed, mother-of-vinegar.—Dr. C. E. Marshall in the Michigan Farmer.

Persons who want a good man to look after a fruit farm or manage an estate, should write C. Boudewynse, Pittsfield, Mass., who has had experience in this line in Europe and America.

100,000 Apple Trees

Two, three and four-year-old. Prices on application. Also Pear, Cherry, Plum and Peach. Write for prices and catalogue. It costs but 1 cent to know my prices.

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Late Fall Spraying for San Jose Scale

There can be no question that San Jose scale is on the increase, and that it is spreading throughout the country. On the other hand, it is not the serious pest it was once thought to be, for the reason that growers are learning how to combat this pest. Different experiment stations are working to devise ways of fighting San Jose scale, and among these stations the New Jersey station, through Prof. John B. Smith, has done good service. A bulletin (No. 186) has just been issued by this station, entitled "Late Fall Spraying for San Jose Scale," which we reproduce in part for the benefit of Fruit-Grower readers:

"During the season of 1904 a long series of experiments was made with summer applications, which are set out in some detail in the report for that year. The results were by no means satisfactory, and early October conditions were such that it meant either a radical, effective application or a large number of dead trees. It was decided to risk applications at winter strength even before the foliage was off, and 'Kill-o-Scale' and 'Soluble Petroleum' were applied to several hundred trees, mostly peach, in October. The damage to the remaining foliage was unexpectedly light, and at most hastened its fall only a few days, while the effect on the scales was as unexpectedly good. The trees were still swarming with larvae, recent sets were numerous and the late breeders were in full activity. Some trees were sprayed once and some twice to determine the effect on the fruit buds, and no further applications were made during the following winter or spring of 1905.

Effect of Fall Spraying.

"Meanwhile numerous winter applications were made under the direction of the office with 'Kill-o-Scale,' 'Scalecide' (both soluble petroleum), lime and sulphur in various combinations, kerosene-limoid and a great variety of other materials. Some of these applications were made early and some late in the winter, and some not until the trees were almost ready to start. Besides keeping a close record of all the applications made under the immediate direction of the office, many orchards were visited in all parts of the state, and the effects of the treatments made by the owners were carefully noted. Details of these applications and examinations will appear in due time in the annual report, but the interesting and important conclusion is that the wrong time for spraying has been generally advised, and that instead of delaying until late spring, our work, to be most effective, should be done in late fall, while the scales are yet active and before the trees are really dormant.

"The reason that winter and early spring applications were recommended originally is that injury to fruit buds was noted with some insecticides and on some trees. Whale oil soap, at the rate of two pounds in one gallon of water, applied before midwinter, was found to be particularly fatal to fruit buds, while if used in spring, just before the trees started, practically no harm was done. So the mineral oils applied in early winter seemed more harmful to the tree as a whole, and gradually the tendency to recommend late spring treatment became fixed. An additional inducement to this purpose was the belief that the insecticide, remaining on the trees, would in a way act as a protection, and as to the crude oil this was undoubtedly true.

Summer Applications Only Hold Insect in Check.

"The experience gained during the summer of 1905, supplementing the records of previous years, emphasizes the point that the summer applications at present known can never do more than keep the scale in such check as to preserve the tree in fair condition until fall. While it is true that the larvae succumb quite readily to even weak mixtures of oil or soap, the breeding scales remain unaffected, and so do the sets after they have passed the white stage. An application made on Monday, during the breeding period, may be so thorough that on Tuesday not a moving larva will be seen and white scales will be discolored or collapsed; but on Wednesday crawling larvae will be again in evidence, and next day white sets will appear. After midsummer, when broods are no longer distinct, it would require spraying at four-day intervals to take care of the young as they emerge, and that is a manifest impossibility in orchards, were it even certain that the trees would not suffer thereby.

"A long series of trials and observations bring out, further, that foliage varies in susceptibility with climate changes, and that applications that are safe under ordinary conditions in one year may be distinctly harmful under others at another time. An illustration of that occurred this season at New Brunswick, where the droughty conditions rendered the foliage of shade as well as fruit trees so sensitive that even the weakest soap mixtures produced serious scalding of the foliage. In other sections of the state similar conditions produced similar results, and, on the whole, I have never seen so much injury to foliage produced by fungicides as well as insecticides.

"The insecticides tested as summer applications during the seasons of 1904 and 1905 included several tobacco extracts and preparations; fish oil soaps, kerosene emulsions, several forms of soluble petroleum, crude and distillates; kerosene-limoid, and several combinations of lime and sulphur. The results were, with all, either lack of effect against insects, or if effective against the scale, then injury to the foliage.

Effect of Winter Spraying.

"As to the winter washes that were used or whose effect was noted, all of them were both successful and unsuccessful.

"'Kill-o-Scale' and 'Scalecide' were applied at several widely separated points in the state, and with almost uniform success. 'Kill-o-Scale' did slightly better as the winter wash, but both did almost perfect work applied at winter strength in October. No injury of any kind was caused on trees or fruit buds; the remaining foliage was somewhat scalded, but the dropping was only a little hastened. A second application of 'Kill-o-Scale' near the end of October did very little more harm to foliage and none to fruit buds. The trees so treated came out normally in the spring of 1905, blossomed well, and up to the time of writing promise to mature their fruit. Best of all, out of over two hundred peach trees treated twice, very few showed any trace of live scale up to the end of August, and those treated once only were almost as good.

"Adjoining peach orchards comprising in all several hundred trees were treated in March with 'Kill-o-Scale' and 'Scalecide,' and while the results were satisfactory they were not so completely effective as the fall applications. On apple, pear and plum, both fall and winter applications were made and results were approximately uniform—always good; never quite complete. In a few cases where they were unsatisfactory, the

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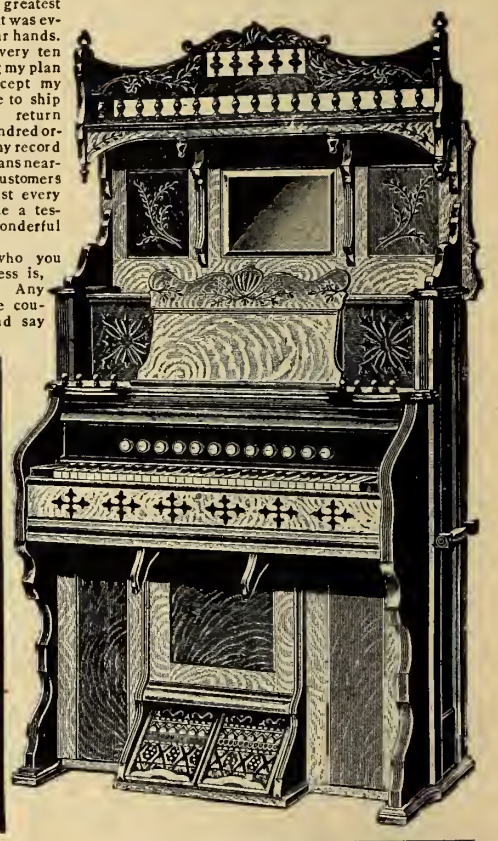

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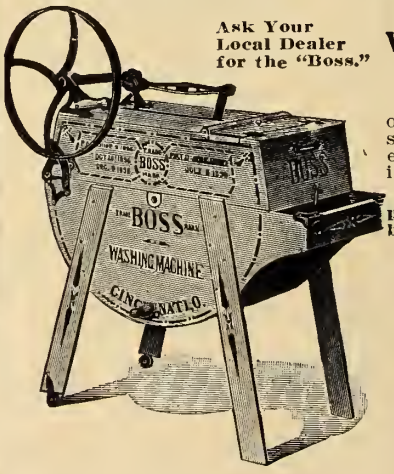

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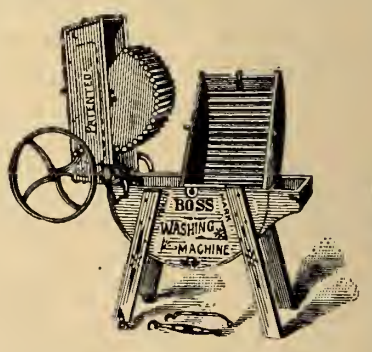

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reason was found in causes outside the material itself.

"Lime, sulphur and salt, as a winter wash, maintained its standard of effectiveness on peach and plum, and did better on apple and pear than in 1903-04. As to its use as a fall wash, the published records by the New York (Geneva) Station show that material injury, amounting to a killing of an average of 20 per cent of fruit buds, was caused, but that the additional vigor of the trees really balanced this. On peaches the injury extended to a killing of sappy shoots, and that has been noted elsewhere, even of winter applications. On the whole, the benefits were greater than the injury.

"The self-boiled mixture of lime, forty pounds; sulphur, twenty pounds; water, fifty gallons, was used extensively at one point near Riverton, and I also saw its work in Delaware. The results were excellent on peach in Delaware, and almost as good on apple and some pears at Riverton. It must be admitted that when properly made and very thoroughly applied this combination produces an extremely good effect. Its failure on several varieties of pear is not explainable. There is no reason why the material should not be as safe for fall work as the previous combination.

"The addition of soda to the lime and sulphur, to facilitate a combination, may cause a more severe action on fruit buds than is the case with the others, and for the present the lime-sulphur-soda mixtures are not recommended for autumn work.

"The K.-L. (kerosene-limoid) combination was, generally speaking, a failure in New Jersey, but not unrelieved by at least one gratifying success in a pear orchard where the lime-sulphur-salt mixture had previously failed. As to some of these failures—mostly on apple, by-the-by—it is probable that the method of making, rather than the combination itself, was at fault. Professor Close informs me that results in Delaware were very satisfactory, but that they were not entirely so I can testify from personal observation. It is more than probable, however, that as a late fall mixture it would be much more effective, and it should be as safe as the soluble petroleum combinations.

Recommendations.

"In consideration of the experiments and observations already recorded and commented upon, the following practice seems indicated:

"As soon after October 15th as possible, when the crop is off, when the foliage has begun to thin out and drop, and while the scale is yet active, apply that insecticide with which you are most familiar at full winter strength and as thoroughly as possible. An exception must be made of whale oil soap, which should not be applied stronger than one pound in one gallon of water, if at all.

"It is obvious that the date given (October 15th) cannot be arbitrarily adopted in all parts of the state in all seasons, or even for all trees. In the hilly north frosts cause the foliage to fall much earlier than in the warm, sandy plains of the south, and the peach is usually trimmed out before the apple foliage begins to drop to an considerable extent.

"So long as the sap circulates the scale continues active, and so long as there is foliage it is not too late to spray.

"Begin, then, as soon after the middle of October as possible, on those trees that then mature and begin to drop their foliage. When that period of maturity has arrived the functions of the leaf have been accomplished, and any scalding or scorching does not affect the tree itself. It is better to wait until the leaves are partly off to facilitate getting at all points on the twigs and branches, but a little foliage is really an advantage, because it catches spray that would otherwise go through the bare wood, and some of the drip will reach the tips and branches. If the infestation is very bad, it will be better to duplicate the application two weeks later, if oil was used, or in the spring, if one of the lime and sulphur combinations was employed.

"I have suggested using that insecticide with which the grower is most familiar, but personally I much prefer the mineral oils, clear or in combination.

Three Good Insecticides.

"'Kill-o-Scale,' sold by the Griffith & Turner Company, Baltimore, Md., and 'Scalecide,' sold by the B. G. Pratt Company, 11 Broadway, N. Y., are very similar in composition and effect. Both may be diluted with twenty parts of water. The records show 'Kil-o-Scale' as the more effective combination, but the 'Scalecide' used in the experiments was the first material produced, and while the makers were working at my suggestion as to the amount of oil required. A better emulsion is now made, and I believe that these two soluble petroleum preparations will prove equally effective. Their advantages are ease of application, spreading and penetrating power, and absence of corrosive effects upon machinery and operator. 'Surekill,' sold by Siebrecht & Son, of 425 Fifth avenue, N. Y., seems to be a similar product which I have not yet had a chance to test, practically. The only Jerseyman who has used it, so far as I know, has found it very effective.

"The 'Target Brand Scale Emulsion,' sold by the American Horticultural Distributing Company, Martinsburg, W. Va., is another petroleum preparation in which napthol is used as the emulsifying agent, and this, it is claimed, may be used while the trees are in foliage, at the rate of one to thirty, without harm to the leaves and with good effect. Experiments thus far made did not result favorably, but used in October or late in the fall, generally at a strength of one part to fifteen or twenty of water, it should be as effective as any other of the petroleum mixtures.

"None of the oil emulsions should ever be allowed to get very cold, and all of them should be used as soon as possible after being received, for there is always a danger of separation. Cold favors this more than heat, and that accounts for some poor effects.

"My second choice is the K.-L. combination, and limoid has, in the New Jersey experience, proved superior to Corson's lime or the dry hydrate of lime. Where one treatment is employed, 25 per cent of kerosene may be used; where two applications are to be made, 20 per cent will answer.

How to Make the K.-L. Mixture.

"As a great deal of stress is laid upon having the K.-L. properly made, the following directions should be carefully followed: Pour the kerosene into a barrel and for each gallon of oil stir in four pounds of limoid, keeping the mixture in continuous motion until it forms a thin, sloppy mass. In case some of the kerosene separates out, sprinkle a little more limoid to absorb it. To this add water in quantity equal to the kerosene, stir vigorously to get it well mixed, then add as much water as is needed to

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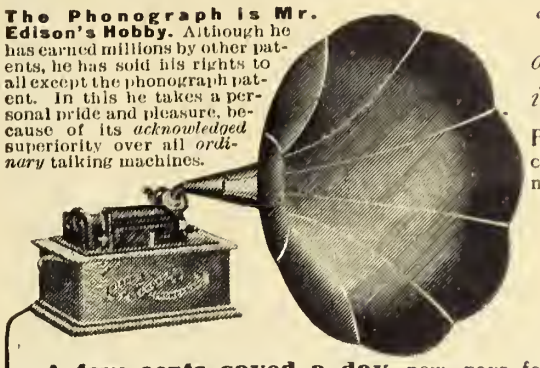

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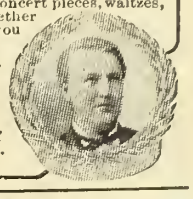

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obtain the desired percentage and pump the mixture back into itself until a thorough emulsion is obtained. It is then a smooth mixture, which flows as freely as water through a Vermorel nozzle, provided it is well agitated and no foreign matter gets in. In this combination the very fine lime particles take up the kerosene and act as carriers, which, when thoroughly mixed with water, spread the oil in a thin film over the scale-infested surface. A very thorough and even mixture with the water is therefore necessary, and that can be only obtained by pumping the mixture back into itself as directed.

"To those who have an emulsion pump that works well, the application of a 20 or 25 percent mechanical mixture of oil and water is suggested. In this case it may be either crude oil or kerosene; for the limoid combination crude oil is not suitable.

Use of Sulphur Sprays in Autumn.

"Those who have found the lime and prefer to use them, will find it and prefer to use them ,will find it advantageous to make the fall application, even if they intend to make the spring application as well. For the boiled mixture, the fifty pounds lime, fifty pounds flowers of sulphur and fifty pounds salt, still holds my preference. The soda combinations are not favored for fall applications, and the self-boiled mixture has not been heretofore described. The formula that has proved most useful is forty pounds lime, twenty pounds flowers of sulphur, fifty gallons of water. Put the lime, which should be of the best, into a barrel, dust in the sulphur with it and add boiling hot water to slake. Use water enough to start a violent boiling, cover the barrel with a blanket to confine the steam, stir from time to time with a hoe, adding more hot water as needed until the lime is entirely slaked. Then keep covered with the blanket for an hour, dilute to spraying strength, preferably with warm water, and apply immediately.

Life History of the Pernicious Scale.

"Nothing of practical importance has been added to our knowledge of this insect during the year or two just past, but as all the publications of the Station that contain a description are out of print, a brief review of its life cycle may not be unimportant.

"The winter is passed in the half-grown condition, covered by a round black scale, about one-twentieth of an inch in diameter. A single scale on a plump young shoot is easily recognized, and agrees with the above description; when the specimens become abundant or crowded together the form may be modified, and on a rough, gray bark they are easily overlooked.

"During the winter the insects do not feed and there is no drain upon the vitality of the tree. The contrary has been asserted because it may happen that the tree goes into the dormant state in apparent good condition, makes a start in the spring and then dies. This, however, is due to the fact that the injury caused in late fall poisoned the sap-carrying layers to such an extent that they are unable to resume their functions in spring. The tree starts from the stored material in the fruit and leaf buds, grows until this is exhausted and then, receiving no nourishment through the roots, it dies.

"Some time in May the insects resume growth, the males develop, the female scales increase in size, and, between June 10th, in the southern counties, and June 20th, in the northern, young begin to appear.

"If the scale, which is the only thing visible on the surface, be carefully lifted with the point of a knife or a needle, there will be found beneath it a small sulphur-yellow, grub-like creature, without legs or other organs of locomotion, and under the microscope the only appendages are the long, sucking bristles. The visible scale, then, is only a protective covering to the true insect that lies beneath it.

"As the season advances the difference between the sexes becomes marked; the male scales do not increase in size, but become somewhat oval, and eventually the yellow grub-like form changes into a very minute two-winged fly, so frail that the least puff of air disturbs it. Nevertheless, it finds and impregnates the female, which does not change its grub-like condition and never gets from beneath its scaly covering. The young are born alive and begin to crawl from beneath the mother covering at the dates mentioned in June. These young are minute, active, yellow atoms, with six legs and two antennae or feelers, and they tend to crawl outwardly to the fruit, the leaves or the young shoots. Though they are so very minute, these larvae may travel for quite a distance, and are very apt to crawl on the feet of birds or the bodies of other insects that may rest or alight upon the infested twigs. If when they crawl from their host it has moved to another tree in another orchard, a new infestation may be started.

Wonderful Progeny of a Single Pair.

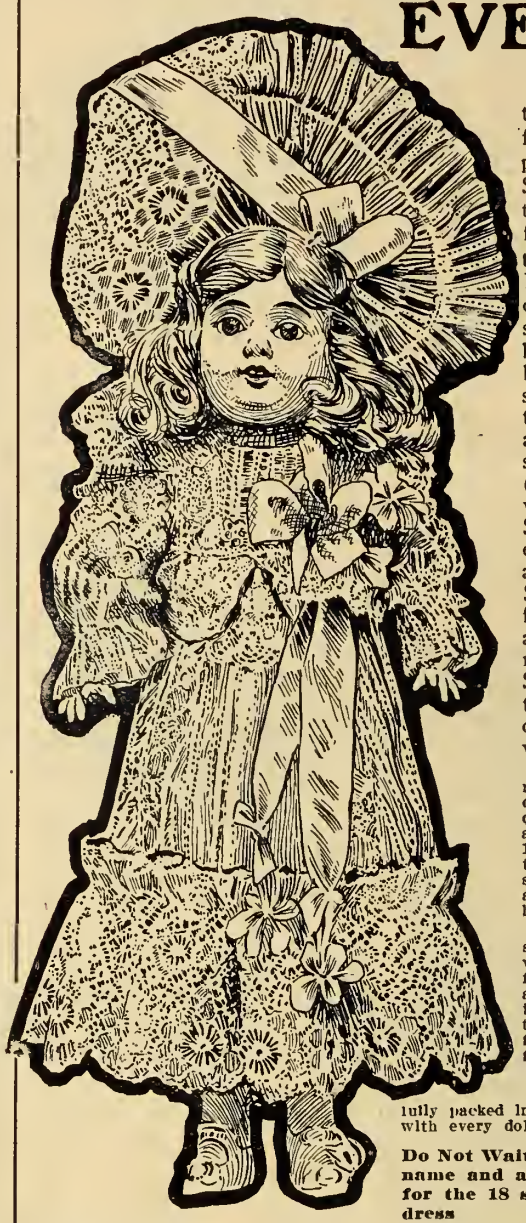
"The female continues to produce young for three weeks or longer, several hundred being borne during that time. The new-born larvae move about actively for from twenty-four to forty-eight hours without feeding, then insert the slender mouth filaments into a suitable place in the plant tissue and begin to suck. Almost immediately they begin to change form, become more circular and disc-like and all appearance of legs vanishes. The insect is really fixed for life under ordinary circumstances, and very soon white, waxy filaments begin to ooze out all over the body; these run together and the creature is snow-white, an appearance which it holds for a short time only. The scaly covering now spreads out laterally, the color darkens and the round center assumes a sort of nipple-like appearance. In about five or six weeks the species is mature, reproducing in turn, and by the end of the season broods are no longer distinct, all stages occurring on infested trees at the same time. It happens not infrequently, that in mid-summer there seems to be a little pause in multiplication, but by mid-September larvae are again present in great swarms. A single pair, starting under favorable conditions in June, may have descendants to exceed one thousand million (1,000,000,000) before snow flies.

"Reproduction continues until the tree is perfectly dormant, and I have seen active larvae in Burlington county during the first week in December. No insect that begins breeding in fall survives the winter, and all insects that become sexually mature, even if they do not begin to reproduce, also die off. The remarkable uniformity in the time when reproduction begins in spring points to a somewhat uniform period of birth for the survivors, and I am inclined to place that period about October 15th, for North Jersey, and November 1st, for South Jersey. The swarms of larvae and recent sets that are then on the trees form the host that reaches the surviving condition. This black scale stage marks the period when the covering tissue is most dense, most closely applied to the tree and hardest to penetrate. This condition continues until the end of May, and all our winter and early spring work is therefore done while the insect is in the most resistant stage. An insecticide that is even moderately effective under such conditions would be enormously more active against less resistant stages; hence the late fall applications, at winter strength, should be, theoretically, the most effective that can possibly be made, and in this case theory and practice agree in result."

This Will Interest Many.

F. W. Parkhurst, the Boston publisher, says that if anyone afflicted with rheumatism in any form, or neuralgia, will send their address to him at 804-12 Carney Building, Boston, Mass., he will direct them to a perfect cure. He has nothing to sell, or give, only tells you how he was cured, after years of search for relief. Hundreds have tested it with success.

DOLL AND RING FOR EVERY GIRL



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Prof. Taft, Michigan Experiment Station; KIL-O-SCALE practically destroyed all of the old scale."

Prof. W. G. Johnson, late Entomologist of Maryland, now Editor American Agriculturist, New York: KIL-O-SCALE was quite effective and trees practically clean."

Dilute proper proportions with cold water and spray. Price in bulk: Barrels and half-barrels, per gallon, $1.00; 1-gallon cans, $1.50; 5-gallon cans, $6.25; 10-gallon cans, $12.50.

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Prof. John B. Smith, Entomologist New Jersey Experiment Station, writes of "SCALECIDE": "I believe that applied at the right time and in a thorough manner, this is as good, if not a better remedy, for this pernicious insect, than any we have up to the present time."

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WORK IS BEGUN ON THE RAILROAD which is to traverse the lands described in my article on page 17 of the October Fruit-Grower, and will be pushed to completion before July next. Every quarter section of the land I represent, which is to be opened to settlement in December, **is within three miles of this railroad.**

You have a chance to get some of this land by attending to the matter at once. Send for illustrated booklet, giving all particulars. Address

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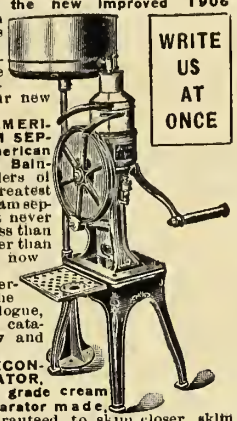

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How to Make Powder for Dusting Trees.

In the September number of The Fruit-Grower in Questions and Answers, J. C. B., Saluda, N. C., asks for information about the dust process of spraying fruit trees. Perhaps I can give some points from actual experience that might interest and benefit him, as well as other readers of your most valuable journal.

The dust process, like a great many other good things, has to be studied and understood before it can be appreciated. Some fruit-growers in our community this season, who had always used the liquid process and were prejudiced against the dust method, tried the dust process with their minds made up that it was going to be a failure, and, as a matter of course, put as little money into it as possible, bought the lowest-priced machine, and made no preparation until the spraying season was on them, and then in the rush, with no means of making dust, no formula, a poor spraying machine, and, worst of all, no patience, they ruied the whole thing out and returned to the old-fashioned method which, compared with the dust, has many disadvantages, with not a single advantage.

The liquid process takes about six men and four horses to operate, and often the cisterns are pumped dry or maybe an extra team is used to haul water several miles from a stream, and then if the ground is soft and muddy it is impossible to draw the heavy tanks through the orchard, when two men and a one-horse wagon can take a dust sprayer and cover three times as many trees in the same length of time and do it better.

There are three things on which the dust process is hinged. First, the right formula; Second, the right machine with which to make the dust; Third, the right machine with which to apply the dust. And I think these three things are kept from the public because each manufacturer has a special formula which he wishes to get a trade mark on or some machine, either for making or applying the dust which he thinks is the only machine. As I have no patented formulas, and am in no way interested either in the manufacture or sale of any dust-spraying machinery, I will try and give my whole outfit as concisely as possible:

My rig consists of a No. 6 Ideal duplex corn grinder manufactured by the Stover Mfg. Co. of Freeport, Ill. This machine costs about $18.00. I also have a shaking shoe corn meal sifter covered with No. 30 brass wire. This sieve can be gotten of any one who makes milling machinery for about $20.00; this sieve has a speed of about 600 revolutions per minute. This outfit can be driven by a six-horse power either steam, gasoline or horse power; most fruit-growers and farmers have an engine of some kind, and if not any threshing engine can be hired for a small compensation. This little, cheap outfit has a capacity of from one-half to one ton of dust per day. A ton of dust will cost about $25.00 for actual material and will spray thoroughly (three applications) 60 acres of 20-year-old apple trees. The above outfit will do the work for a whole neighborhood. The following directions will be found useful and satisfactory:

Make three boxes 6 ft. long, 15 in. deep and 30 in. wide, of wood that will not catch fire readily, and put three bushels of fresh unslacked lime in each box; now dissolve 25 pounds of bluestone in 11 gallons of boiling water, pour the above quantity of liquid bluestone on each three bushels of lime which will reduce it to a hot dry dust. (We have demonstrated that the virtue of the bluestone is not reduced by the slacking process.) And no matter how finely bluestone is ground, if used on a tender peach leaf it will burn it full of very tiny holes. We use three or four boxes in order to prepare that many barrels of lime at a time. Let this hot lime stand over night to cool, and see there is no fire in the boxes before retiring.

Next morning add 25 pounds of flour of sulphur and 5 pounds of Paris green to each barrel of lime and mix thoroughly; run this over the sieve, which will take out about half, and the rest which goes over the sieve must be run through the grinder, using the extra fine burrs. As most of the sulphur and Paris green will go through the sieve in the first operation, it will be necessary to mix the part from the sieve and that from the grinder together. There would be no need of sieving, except that the lime with the fine part in it packs in the mill and does not feed, but when the fine part is sieved out the rest grinds nicely, and fine enough so as to not need sieving again. Do not use hydrated lime, as you never know its age nor strength; it is also too fine; it balls in the machine and is so fluffy and light that when it starts upward you never know where it will light. The formula which I have given is for apple trees and has proven so much superior to the liquid both as a fungicide and insecticide that we have relegated the liquid process.

This formula will also exterminate the green cabbage worm and clear out slugs from currants and gooseberries. For grape rot and peach rot use 12 pounds of bluestone and sulphur each, to the barrel of lime; leave out Paris green; it is very effective and perfectly harmless both to fruit and foliage. Last, but not least, is the machine with which to do the spraying. We own the Cyclone, and two other makes of sprayers, and in actual orchard tests the Cyclone did so much better than the other two that we could not afford to use them if they cost us nohing.

D. GOLD MILLER.

Inwood, W. Va.

To Land Agents and Homeseekers.

The Chicago Great Western Railway will, on the first and third Tuesdays of each month to December inclusive, sell round trip tickets at only one fare plus $2 to points in the following states: Alabama, Arizona, Arkansas, Colorado, Florida, Georgia, Indian Territory, Kansas, Kentucky, Louisiana, Mexico, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New Mexico, North Carolina, North Dakota, South Dakota, Tennessee, Texas, Utah, Wyoming and Virginia, also to Alberta, Assiniboine, Canada Northwest, Manitoba, Western Ontario and Saskatchawan. For further information apply to M. F. Montgomery, City Passenger and Ticket Agent, 414 Felix street, St. Joseph, Mo.

It is believed that the planting of grape vines will be heavy this year. The crop was generally profitable.

Remember that The Fruit-Grower will be $1 a year after January 1, 1906. Better renew now, while your renewal can be sent at 50 cents a year.

CHEAP SEPARATORS

It is universally recognized that in point of goodness DE LAVAL Separators stand alone. Hence the claim of imitating machines to cheapness.

There is nothing else perhaps in which "cheap" means as much as in Cream Separators.

The really "cheap" machine is not that which costs least, but that which gives the most capacity, recovers all the butter-fat, produces the best cream, runs easiest, and will last longest.

These are the qualities which represent recognized goodness in the DE LAVAL, and in any and all of which no other Separator is comparable.

Most "cheap" Separators are in a class with rhinestones, "dollar" watches, and other trashy imitations of the real thing. But worse than all that they WASTE butter-fat every time they are used, and so would be dear as a gift.

The genuinely cheap separator is the GOOD separator, which soon SAVES instead of LOSES its cost, and may be bought on such easy terms as to actually PAY FOR ITSELF during the first year of use, and then be good for another twenty years more of clear profit.

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Two large twin sister dolls, elegantly dressed, perfect beauties and a Sweet Little Baby Doll that will please the hearts of many thousands of little mothers. We give the three dolls FREE for selling only 34 of our fine Handkerchiefs.

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BOYS, GIRLS you can obtain entire doll outfit, football or baseball outfits, sweaters, punching-bags boxing gloves watches etc.

Your choice for selling only 34 of our fine hemstitched handkerchiefs at 10c.

SEND NO MONEY, write at once, premium sent day money is received. Express prepaid

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A COMPLETE FOOT BALL OUTFIT

Consisting of a pair of intercollegiate football pants heavily padded, sleeveless jacket sewed with best and strongest linen, handmade eyelet for lacing, fine quality worsted belt. Boys we give this complete football outfit for selling only 34 of our fine Handkerchiefs.

Forest Tree Seedling
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Shade Trees, Fruit Trees
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If you are interested write for prices.

Peters & Skinner, North Topeka, Kas.

Strawberry Failures in Wisconsin.

Everyone knows that varieties of strawberries behave very differently in different parts of the country, and that one man's experience will not be that of another grower elsewhere. Notwithstanding this, reports of behavior of varieties are interesting and sometimes helpful. The following report by George J. Kellogg of Wisconsin of some of the varieties which failed with him will be interesting. It is taken from Indiana Farmer:

Cameron's Early—Not satisfactory, small and not very early.

Challenge—Set an enormous crop of fruit, but did not mature a berry.

Sutherland—Catalogue says "large, delicious, productive." After three years trial, it is small and unproductive.

Uncle Sam—Small, light in color and worthless.

Oom Paul—Catalogue says "six filled a quart box." That may have been when only one berry was allowed on a plant, but in hedge row or matted row, it is a worthless variety.

Midnight—After three years' trial, both in hedge and half-matted rows, it lost its foliage this season and is worthless.

Velvet—At a cost of three dollars per dozen, did fairly well the first season, but the last two it has lost its vigor and foliage and while I shall pet it another year, it is a failure.

Monitor — Catalogue says, "deep red;" it is a poor yellow and worthless.

Wild Wonder—Beats them all as a humbug. It came at one dollar a plant, promising as large as hulled black walnuts, as sweet as the wild strawberry, as productive as any known variety and vigorous enough to run out white clover and June grass. After two years of petting, this year is my first crop. It took two hundred berries to fill a quart. They are shaped like the wild strawberry, but not as good as Jessie or Warfield in flavor. They are a rampant grower and productive of so small a berry they are not worth the picking, when other berries are plenty. This is my experience with these varieties.

A Woman's Fruit Farm.

I have intended ever since the berry crop was harvested, to write and give my experience with the object in view that it might help some one as much as I have been helped by others. Growing strawberries with me is very up-hill business, as everyone who has tried it knows. There is a great deal of hard work about it and there is no man to help us here. My husband had been in very poor health for a couple of years, not able to work at all, and on July 23d he died, leaving me a small piece of ground which I had been setting to choice fruit a little at a time as I could, to meet this time that I knew would come and I wanted to get the place in shape to make our living. Now we have some of nearly everything growing.

To go back now to the berries. We had this year about one-third acre of strawberries, which we picked and marketed ourselves, my daughter taking them one-half mile to town. We never had any trouble to dispose of them and were told that they were the finest berries that went to market. We sold the most of them to two different grocers at $2.40 a crate at first and later at $2.00. Many of the berries measured from 4 to 5½ inches in circumference. My plants were secured from Three Rivers, Mich., and were all that plants could be. We sold $100.00 worth and had all we could eat for five weeks and canned 60 quarts.

We had our first ripe berries May 21st from Michel's Early, and had the last ones July 1st. My favorites were Kansas for late and Haverland, medium to late. There was a great demand for the Kansas, they were so large and dark red and as to bearing, you could not step till you made a place to put your foot. The patch was a sight and everyone went wild over them. Haverland is a fine-flavored berry and a great bearer of large, pointed, scarlet berries, which ripen evenly; no green tips. Kansas ripened the same, but it is not a good market berry, being too soft.

Senator Dunlap was another favorite; it is a good bearer, and the berries ripen evenly, are dark red. Jim Dornan and Marshall are very large, but should be grown in hills or single row, as the foliage is too heavy for matting. I will set plants from them in the spring and try not to let them get too thick. I am not very much impressed with Tennessee Prolific, as it did not ripen perfectly, requiring two days to become fit to pick, but it is a good bearer. William Belt is another fine berry with us. I also grew Bubach, Brandywine, Splendid, Parson's Beauty and New York. These I shall try another year and if they do not do better for me I will discard them; cannot tell in one year.

You will see by this that my patches have become matted; it is so hard to have things just as we would like them and so many things require a man's strength, but the patches are free from weeds.

As soil has a great deal to do with different varieties, I will state that our ground is cleared out timber land. There are a good many stumps yet that are not rotted, among my berries and trees, and the soil must be all right, for I never saw trees and bushes grow as they do here. We had apples last year from trees two years set which were bought at the Stark Nursery and had twelve on this year. It takes no more ground to grow a good thing than a poor one, and I have tried to get the best I could, according to my judgment. I suppose when they all bear I will see where I have made mistakes.

I am so interested in The Fruit-Grower and when it comes I find it is after ten o'clock before I can put it down, I see so much of interest. I will be glad to receive any advice that will be of use. Can any one suggest a good market vegetable? How would bush lima beans and sweet corn be? It must be something that will not require too much attention during the strawberry season.

My letter has become so lengthy and yet there are many things I would like to know, but will reserve my questions till another time and store up all the knowledge I can from our paper this winter, to help me along another year. I have three Maynard plum trees I am looking forward to.

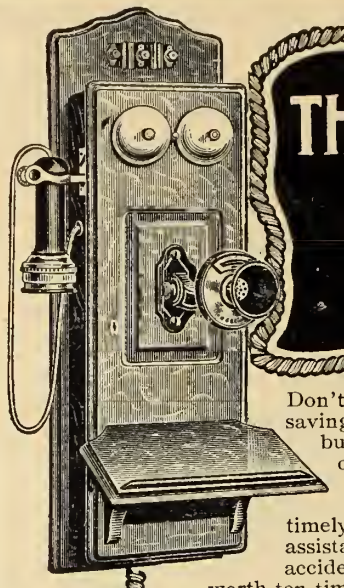
MRS. NETTIE WARNER.
Kewanee, Ill.

Good Farm Help Wanted.

I want a practical horticulturist to take charge of an orchard of 100 acres, with some small fruit; also want two all-round farmers, young men. Men must have good character and habits and be stout and healthy. Will pay orchardist $50 per month, with house and cow; will pay all-round farm help $30 per month and board. If someone can supply me with three men who will fill the above requirements, write me at this address, "Romlan" care Western Fruit-Grower, St. Joseph, Mo.

Moved to Topeka, Kan.

H. L. Messick, inventor of Messick's Tree Fertilizer, has taken charge of some large apple orchards, near Topeka, Kan., and hereafter will make that city his headquarters. For more than a year Mr. Messick has been a resident of St. Joseph, Mo. Mr. Messick reports an increased demand for his fertilizer, and increased facilities for handling the trade will be provided in his new location.



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APPLE SEEDLINGS—Nebraska and Kansas grown.
APPLE GRAFTS—Piece and Whole Root.
FRUIT TREE STOCKS—Imported—French Pear, Mahaleb, Mazzard, Myrobolan, Quince.
FRUIT TREE STOCKS—American Grown—French, Japan and Kieffer Pear. Americana Plum Stocks.
FOREST TREE SEEDLINGS—Complete stock.

Winter Wholesale Trade List ready December First.

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Our Specialty **BOXES** FOR PACKING Green or Dried **FRUITS** Our Specialty

If interested, write us for prices. CALIFORNIA PINE BOX & LUMBER CO., Rialto Bldg., San Francisco, Cal.

Questions and Answers

Readers of The Fruit-Grower are invited to use this department. If you have any questions to ask, send them in, and we will try to have them answered by competent authorities. If they are not answered at once, keep watch upon the department, for the answers may be delayed and published later. This department should be one of the most helpful in the paper. If you can answer any unanswered queries, send in your experience.

The Largest Apple — Will someone give the weight and measurements of largest apple on record? We have raised one here at Bridgeport which weighed 38 ounces and measured 18 inches in circumference. Another apple weighed 28 ounces, 16 inches in circumference.—Wm. Kryger, Bridgeport, Wash.

Salt Spray for Pear Blight—I wish those who have tried the salt spray for pear blight would give their experience. Has it proved effective, and has it harmed the tree? What strength was used, and how many applications were made, and when? — Lorenzo Crocker, Maroa, Ill.

What to Plant in Wet Soil—What would you advise to plant in a young apple orchard where trees have died of wet feet?—L. C. Fouquet, Chandler, Okla.

Unless the soil can be drained, we would certainly plant no more apple trees there. If any fruit tree will grow there, it will be the plum; if it fails, then no other tree will succeed.

To Cover Blackberry Canes—Replying to W. M., Goodenow, Ill., in September Fruit-Grower: Cut out old canes after fruiting, then bend down the young canes and tie the top of one lot

of canes to the bottom of the next hill. Do not cover with straw or anything else; branches of pine trees are the best yet, but bending down is usually sufficient, unless in a very severe climate with but little snow. The bending down protects the plants from the cold, piercing winds, and if a few inches of snow covers them they will never get winter-killed. — C. Boudewyns, Lenox, Mass.

Gulnea Hens for Grasshoppers—Replying to W. M., Goodenow, Ill., in September Fruit-Grower, whose garden vegetables were being destroyed by grasshoppers: Nothing is as effective for all insects of this kind as a dozen guinea hens; they eat the insects, but do not harm the vegetables, and do not scratch. After guinea hens, I would recommend turkeys, but no other fowls. —C. Boudewyns, Lenox, Mass.

Subscriber, Illinois—(1) I have a young apple orchard set out three years. The trees have done well, but this year we had our 17-year locusts and they ruined every tree by stinging the limbs close to the trunk. Most of the limbs have dried up, and what are green break at the slightest touch. Now, what I want to know is, will the trees branch out again, or would it be better dig the trees out and plant new trees? (2) What is the earliest and latest blackberry which will do well in Central Illinois?

Answer by Dr. Whitten: (1) So long as the trunks of the trees are healthy, they should put out good branches in spring. I would not dig out trees that have healthy trunks. New branches will tend to come out most abundantly near the tops of the trunks. If any of the trees have very long bodies it will be well to cut them back some so they will not branch too high. Leave some new wood wherever possible. (2) Probably Snyder.

R. L. M., Nashville, Tenn.—I have five acres of Kieffer pears five year old, planted in ground originally wild forest lands, cultivated one year before pear trees were set out. Of course there are yet some stumps in this orchard. Every year I have lost from one to two trees and I am desirous of knowing the cause of it, sometimes the finest tree in the orchard and apparently the most thrifty from outward appearances, will completely succumb within a period of two weeks, there being no visible appearance of decay or sickness preceeding. On examination it will be found that decay has set in at the surface of the ground and has extended downward and emanates from the body of the tree, as the tips or ends of the roots will sometimes be still alive after the tree has become entirely dead. My supposition has been all the while, that the disease was a species of root-rot which is to be found among forest trees, but what puzzles me, is that the disease should begin at the collar of the tree and work downward.

Answer by Dr. J. C. Whitten: The correspondent's supposition that his pear trees are diseased by a species of root rot is without doubt correct. Root rot usually begins at or near the collar of trees. I have seen many cases where the crown of the trees and a large portion of the root just beyond the trunk was rotted off when apparently healthy rootlets below were quite numerous. We know very little about the work or life history of this disease however, and I can hardly recommend any efficient remedy for it. Usually it is not very abundant in orchards and is not likely to kill a very large percentage of the trees when it is only attacking one here and there, as it apparently spreads slowly. In land where the trees have died, some growers dig a fairly large hole, build a fire in it, throw a portion of the soil taken out onto the fire, and in that way kill the fungus by means of heat before replanting tree.

D. N. W., Dayton, Va.—I have an orchard which has been set three years; varieties are Winesap, Johnson Winter, Ben Davis, Black Twig and Gano; soil is a black gravel, comparatively new and strong, and has been well fertilized and cultivated. This has caused a vigorous wood growth, making the limbs long and slender. Would it be advisable to cut the limbs back? If so, when should it be done? I also have a pear orchard containing Kieffer and several other varieties; same age as apple trees, and has received same treatment. I have been advised to set the pear orchard in grass and cut the tops back in spring. What does The Fruit-Grower advise?

Answer by Dr. Whitten: I would not advise cutting the apple limbs back much except where it may occasionally be necessary to shorten some of them to keep the tree symmetrical. So long as they are growing vigorously they will become stout and strong before they reach bearing age. Severe cutting back will induce still more rank growth. What pruning is done is usually best done in late winter and very early spring. Pruning should be finished early enough so the trees will not bleed when cut. Similar advice may be given with regard to pruning the pears. It will no doubt be best to seed the pear orchard down to clover, or to grass in case clover does not thrive well in the neighborhood. Pear trees in sod begin to fruit earlier and are less liable to blight than when they are given clean culture.

Material from the $50,000,000 St. Louis World's Fair

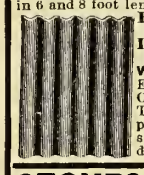
Special to readers of Western Fruit Grower. Low prices on Lumber, Building Material, Merchandise, Machinery, Household Goods, etc.

SAVE 30 TO 50% on anything you need on the farm, in the home or shop. Study carefully the reasons why we are able to quote lower prices than anybody else, and then decide to place a trial order with us. The Chicago House Wrecking Company, (Capital and Surplus $1,000,000) is the largest institution of its kind in the world. We are constantly buying stocks of New General Merchandise, Household Supplies, etc. at **Sheriffs', Receivers', Trustees', Assignees' and Manufacturers' Sales**
This means that new goods of standard merit and quality are sold direct to you at less than actual cost price. You would be compelled to pay 30 to 50% more at other houses for same material. Do not fail to read the following special offers if you want to save money on your purchases.

NOW IS THE TIME TO BUY supplies or materials you may need for contemplated improvements about your place. History repeats itself, and now after having dismantled every exposition of modern times, including the **Chicago World's Fair, 1893; The Pan-American Exposition at Buffalo, 1901; The Trans-Mississippi Exposition at Omaha, 1899,** and innumerable public buildings, we have purchased the **$50,000,000 St. Louis World's Fair** and consequently have an immense stock of first class material of every kind and for every purpose. Shrewd purchasers; those who know a good bargain, and appreciate the quality of material used in the constructions of the most magnificient and expensive World's Exposition of modern times, are flooding us with orders. There is nothing used in the construction of a building of any kind, or for furnishing same, that we cannot supply. Look up your needs and get our catalogue. The prices speak for themselves. Tell us what you want. Every day finds our stock of big World's Fair bargains much smaller. Write today.

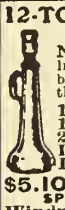
OUR GUARANTEE
We positively guarantee that all purchases of any kind made from us will be thoroughly satisfactory, and articles and supplies exactly as represented. You can place your order with us in confidence that you will not only receive just what you order and pay for, but with the further assurance that in case you find the goods not as represented, you can return same and your money will be refunded without quibbling or delay. Send us your inquiries for what you may be in need of in the line of general farm and building supplies, household goods, etc.

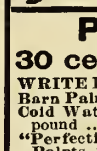
Our REFERENCES
We welcome investigation as to our reliability. Look us up in Dun's, Bradstreets or any other responsible commercial agency or express company. Ask any banker, or refer to the Drovers Deposit National Bank, and other Chicago banks.

STEEL ROOFING and SIDING
new, painted on both sides, most dursble and economical roofing for houses, barns and sheds—in fact for all buildings.
$1.50 PER 100 SQUARE FEET.
This is our No. 15 grade, semi-hardoned, flat. 24x24 inches.
Corrugated, V Crimped or standing seam, per sq., **$1.60,** also comes in 6 and 8 foot lengths at 50c per sq. more.

Beaded Ceiling and **Siding,** per sq..$2.25
Imitation Brick Siding per sq...$2.25
WE PAY THE FREIGHT East of Colorado, except Oklahoma, Ind. Terr, and Texas. Prices to other points on application. No special tools needed. Full directions furnished.

LOWEST PRICES ON LUMBER OF ALL KINDS
Including building material of every description from the St. Louis World's Fair. Here is one chance to get a lumber bargain
SEND US YOUR LUMBER BILL FOR ESTIMATE.
Save 30% to 50% if You Buy At Once.
Studding, joists, planking, dressed and matched flooring, sheathing, timbers, in fact lumber for any purpose, from the exhibition palaces World's Fair. Quick delivery. Besides lumber we have all kinds of sash, doors, hardware, electric appsratus, flags, poles, tools, turnstiles, statues, railing, moulding, iron rods, and thousands of other articles,

Linoleum and Carpets at Half Price
FROM THE WORLD'S FAIR.
1000 Yards Oil Cloth, good as new, excellent patterns, various designs, 1, 1½ and 2 yards wide, per sq. yd. .19 cents
3000 Yards Semi Scotch Linoleum, finest quality, practically new, handsome assortment of designs, in 2 yard widths, medium quality, per square yard, 35 cents. Heaviest quality, per square yard . . . . . 40 cents
250 Floor Rugs, heavy texture, 6x9, each $1.90
Large Variety, combination of colors, from . . . . . 50c to $50
400 Yards Ingrain Carpets, dark green body, floral designs, full widths thoroughly renovated looks like new, Price per yard, .30 cents

12-TON JACK SCREW, 80c

Four Carloads, Brand New Cast Iron Stand, wrought iron screw, deep set thread. The best made, and biggest bargain in the lot at these prices:
1¼ in. diam.. 12 ton..$0.80
1½ " " 16 " " 1.10
2 " " 20 " " 1.15
House Raising Jacks, 1.40
Lever Jacks, each,..... 5.00
$5.10 Anti-Freezing Pump
SPECIAL OFFER ON PUMPS.
Windmill Lift Pumps, each.$3.65
Double Acting force pumps 9.00
Pitcher Spout Pumps,..... 0.95
Kitchen Force Pumps..... 4.50
Thrasher Tank Pumps..... 5.50
Hydraulic Rams..... 4.75
Galvanized Storage Tanks.

STOVES & RANGES
From the World's Fair.

We have over 200 stoves, used only during the Exposition.
Oak Heaters, each, **$3.95**
Hot Blast Stoves:
Small size at . . . 7.00
Medium size at . . . 9.50
Large size at . . . 12.75
Cannon Heaters:
Small size at . . . 4.80
Large size at . . . 7.75
Air Tight Wood Heaters, from . . $1.50 to 7.50
Kitchen Range from 4.00 to 20.00

MODERN PLUMBING MATERIAL
We offer you a saving of 20 to 50 % on anything you need in this line. We can furnish you all the comforts of a city dwelling even if you have no water supply. With our modern "Country Homes Water Supplies" you live like a king. Write us.
Handsome Steel 4½ ft. Bath Tub . . $6.30
Wash Stands, handsome, complete. 7.50 up
Water Closets " 7.00 up
Enam'd Slabs....1.10 up

A Modern Bath Room Outfit, Complete . . 25.00 up

"EAGLE" FELT ROOFING 80c for 100 sq. ft.

2 Ply "Eagle" Brand Ready Roofing without supplies, per sq. ... 60c
Vulcanite Roofing with nails, caps and cement, per sq. $1.75
Galvalzed Rubber Roofing, extensively used on high grade buildings, practical for lining purposes. Nails, caps, cement, furnished complete, 108 sq. ft. ..$1.50
Better grades also.
Eave Troughs, Down Spoutings, Valleys, Ridge Rolls, etc.
SAMPLES FREE.

World's Fair Furniture
$100,000 worth of high grade furniture from the World's Fair.

100 Morris Chairs.....Each, $5.50
150 Couches.....Each, $4.00 to $5.00
250 Office Desks.....each, $16.00
2,000 Dressers.....Each, $5.00
3,000 Iron Beds.....Each, $2.25

Kitchen Cabinets $8.75

Handsome and useful piece of furniture for the house.
Better than a pantry An ornament to any kitchen.
Beautiful Kitchen Cabinets just like illustrstion, all nicely golden oak finished, each . . $8.75

Extension Table $10.25
Best selected oak, with finest Golden Oak finish, top 42 inches, pillars 7 inches thick, hand carved, 6 ft. extension, each.....$10.25
8 ft. extension..$11.75

500 Tables in handsome designs from St. Louis Fair at $3.90 to $25 each.
Send for Catalog.

CHAIR BARGAINS

500 beautiful box fashioned dining room or library chairs exactly like illustration. Can be had in Golden, Flemish or Weathered Oak finishes. Seats of genuine hand caning. Pattern entirely new. While they last each.....98c
Others at 90, 80, 70, and 60c.

EXTRAORDINARY BED BARGAIN
$5.95 EACH.

Exactly like illustration, heavy posts, handsome scroll work fillnig. Five colors, black, red, white, green or blue. Two izes, full and three qusrter, complete with well braced spring and splendid cotton top mattresses all for **$5.95**

PAINTS
30 cents Per Gallon
WRITE FOR COLOR CARD, FREE
Barn Paint, in barrel lots, per gal..30c
Cold Water Paints, per pound 6c
"Perfection" Mixed Paints, per gal.....75c
"Premier" Brand, 3 year guaranteed, per gal..95c
Varnishes, Venetian Red Oils, stains and everything in the paint and oil line.
Orders Filled Promptly

GASOLINE ENGINE $60

2 H. P. fine farm engine, for sawing wood, pumping, churning and general purposes. An economical farm power. **Guaranteed,** $60.00
With pumping jack, ... $65.00
Machinery of all kinds. Engines ranging from 1 to 1000 H. P. Pumping machinery and equipment.

100 LBS. WIRE $1.40
Lowest Prices on Galvanized Wire.
Wire Shorts, No. 14 gauge, per 100 lb. bale $1.40
Annealed Wire, new, 11 to 16 gauge, per 100 lbs....$1.90

B. R. Telephone Wire, continuous lgths, 100 lbs. $2.75
Painted Barbed Wire, 100 lbs. $2.20
Galvanized Barbed Wire, 100 lbs. $2.60
Poultry Netting, gal., 100 sq. ft.. 40c

50 HANDSOME GOLDEN OAK FINISHED DRESSERS
$7.75 EACH.

Like illustration, have large French bevelled mirrors, size 18x20. Bases contain splendid cabinet work, well polished — usually retailing at from $11.00 to $15.00, while they last, each $7.75
Others Dressers as low as $7.50

WIRE NAILS, $1.50 PER 100 LBS.
10,000 Kegs Mixed Wire Nails, each containing 100 to 110 lbs. and ranging from 3 to 30 pennyweight, all kinds in each keg. Special prices per keg, ... $1.50
Wire Spikes, per 100 lbs. 1.90
Wire Nails, one size, per 100 lbs. 2.00
Cement Coated Wire Nails, per keg 1.70

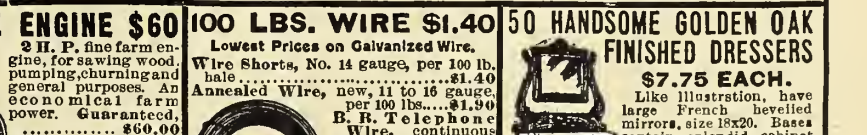
PIPE 10,000,000 feet of pipe, overhauled and in good condition. It comes from the World's Fair. Wrought Iron Pipe with screwed ends and threaded couplings, straight and in good condition.

1 inch, per foot ..... 3½ cts.
1¼ inch, per foot ..... 4½ cts.
1½ inch, per foot ..... 5½ cts.

OUR NEW 500 PAGE CATALOG No. 399 FREE
This book is one that every shrewd buyer must send for. It is full of bargains from cover to cover, and quotes the very lowest prices on everything needed on the farm and in the home. You will save money by referring to it often. The list above shows only a few articles out of thousands described, but the prices give you an idea of what you can save by sending your orders to us. Cut out this ad. Make a cross mark on those items that most interest you, and we will send you much valuable information. Also fill in the coupon to your right. Our new catalogue will be sent you absolutely free and prepaid.
Or send us your name and address, where you have seen this ad. and what items interest you.
CHICAGO HOUSE WRECKING CO., 35th & Iron Sts., Chicago, Ill.

Chicago House Wrecking Company,
35th & Iron Sts., Chicago.
I am a reader of **Western Fruit Grower.** Send me one of your large 500 page catalogues as advertised in this paper.
NAME.....
ADDRESS.....
R. R. OR P. O. BOX.....
STATE.....

THE SWEETEST GIRL IN IOWA
Wants every boy reader of this paper to read every word of this adv.



DEAR BOYS;—
I am the assistant Ed. of the handsomest paper, at the subscription price, in the U. S. In order to get every hustling American boy to help me to make the paper a still greater success, I will give to each boy sending me a club of only 12 subscribers at 25c each, $3.00 in all, a very handsome blue steel sportiug rifle—take down pattern, automatic shell ejector, walnut stock—shoots 22 caliber—bullet or shell cartridges and is the finest gun in the world for small game or target practice.
Now don't say to yourself you would like to have the rifle but can't get subscribers—I know you have tried to get up clubs to cheap papers, or tried to sell cheap pictures or jewelry. Our paper is 10 times more beautiful than you expect—thousands of people say its wonderful how easy it is to get subs.—everybody subscribes as soon as they see my beautiful paper. Write me to-day for full free outfit which will be sent at at once.
MAY WAUTERS, Ed. L.F. M. Co., Room 45, Des Moines, Iowa
SPECIAL NOTE.—So proof positive am I that it is easier to get subscribers to my paper than it is to sell pictures or jewelry, that I will give each and every boy sending me the club of 12 subscribers for rifle within 20 days from receipt of free outfit, an elegant gold finished, quick train, lantern pinion, fully warranted watch. There now—this will prove that I have faith in my paper. You get a splendid rifle by sending me a club of subscribers and I make you a present of a watch outright, just to prove to you that it is easier to get subscribers to my beautiful paper than to sell pictures or jewelry.

Sprague Canning Machinery Company
Sales Office 42 River Street CHICAGO, ILL.

PILES **NO MONEY TILL CURED. 27 YEARS ESTABLISHED**
We send FREE and postpaid a 232-page treatise on Piles, Fistula and Diseases of the Rectum; also 100-page illus. treatise on Diseases of Women. Of the thousands cured by our mild method, none paid a cent till cured—we furnish their names on application.
DRS. THORNTON & MINOR, 1003 Oak St., Kansas City, Mo. and 3000 Olive Street St. Louis, Mo.

Hood River's Apple Crop.

The following from the Hood River (Ore.) Glacier gives some particulars of the sale of this year's apple crop. Most of the fruit was sold to New York dealers, and will be sold in that city and in some of the best markets of Europe.

"Results will not be announced for several days, but negotiations for the Hood River apple crop are practically closed. The prices will be higher than ever before received by Hood River growers. There were four foreign bidders in the field for the 75 carloads of apples that will be shipped and the bids ranged from $1.75 to $3 a box on board cars at Hood River. The apple crop is valued at $150,000. The Hood River strawberry crop this year was 176,840 crates, valued at $176,000.

"The lowest bid on Newtowns was $2 a box, and the bids ranged up to $2.50. The bulk of the Newtowns will go at the latter figure. The Spitzenbergs will bring $3. These two varieties will go east and a large part of them will be shipped to foreign countries.

"The average price of all kinds of apples in the valley is estimated at $1.75 a box. The Mammoth Black Twigs, Hyde Kings, Arkansaw Blacks and Northern Spies go to New York at higher prices than ever before. The Gravensteins go to Alaska. They are found to possess especial qualities for shipment and preservation in that latitude.

"Hood River men are jubilant over the success of their fruit season, and the advertising Hood River has secured as a horticultural section through the exposition. They have been liberal in expenditure of money and active in all projects to bring their district to the attention of the country and stimulate the demand for Oregon apples.

"R. M. Hall, advertising agent for the Harriman lines in Oregon, has returned from a trip through Hood River Valley accompanied by a photographer for the advertising department and a writer for the Sunset Magazine. He took 15 photographs among the orchards for use in the Harriman Railroad literature to be issued in 1906. The Sunset representative will write an article on Hood River Valley for the next issue of the magazine, and it will be illustrated with a number of photographs taken for that publication.

"'Steady progress is being made by the fruit men in Hood River Valley toward the attainment of ideal conditions, and the highest results, in the horticultural industry in Oregon,' said Mr. Hall. 'The crops are becoming more valuable in quality and the orchards are increasing in fruitfulness. The farm of Oscar Vanderbilt, a former railroad man now turned orchardist, is an example. He paid $16,000 less than two years ago, for a farm of 110 acres, and last week refused an offer of $40,000 for the property. His net profit this year was $6,000. One Baldwin tree in his orchard yielded 22 boxes of apples that sold at $1.75 per box. There are usually 75 trees to the acre. Had every tree been brought up to this degree of productivity the land would have yielded $2,887 per acre. The prize Baldwin tree was 10 years old.'

"Mr. Vanderbilt has 55 acres under cultivation, of which six acres is in alfalfa."

The figures given for the strawberry crop must be wrong in some way, for Mr. Shepard, manager of the Strawberry Association, told The Fruit-Grower the crop this year brought $1.60 per crate.

I want every home not yet in possession of an instrument to read my special piano and organ plan. There is a coupon at the bottom of the advertisement and I want to receive a thousand coupons from a thousand readers of this paper. For every coupon sent in I will send out by return mail a piano and organ-buying plan that will surprise you in a dozen ways. If you want an organ I will show you how to keep half the price in your pocket. If you want a piano, I will prove to you a saving of over one hundred dollars. Whether you have ready money or not makes no difference with me. Your promise to pay me a little money now and then is all I ask of any honest home. One of my customers in Iowa wrote me a letter two weeks after he received instrument I shipped him. He says: "If it wasn't for your easy-buying plan, I couldn't have bought an organ for my children until next spring, and they have been teasing me to get one for the last two years." You will find advertisement on page 14, this issue. Cut coupon out and send to me today. Address J. B. Tilery, The Piano and Organ Man, Milwaukee, Wis.

The Forbes Chocolate Co., Cleveland, Ohio, in this issue advertises a fruit jar wrench and holder which should be in every home. Everyone has had experience in trying to open fruit jars where tops are stuck tight; this wrench is almost a necessity. The wrench and jar holder which Forbes Co. advertises are very cheap and they certainly do the work required of them. These articles have been used in the home of the editor of The Fruit-Grower and the tightest top can be removed from a fruit jar very easily. We recommend that our readers write Forbes Chocolate Co., Room 140, 74 Frankfort St., Cleveland, Ohio. The Fruit-Grower unhesitatingly recommends this device.

With Our Advertisers

Need an incubator? J. W. Miller Co., Freeport, Ill., can supply you.

If you want farm scales, write McDonald Bros., Pleasant Hill, Mo.

Andersen Bros., Minneapolis, Minn., want hides and furs of all kinds.

S. J. Baldwin, Seneca, Kan., calls attention to general line of nursery stock.

Red Ruby Raspberry—Introduced by Valley View Fruit Farm, Marlboro, N. Y.

H. L. Messick, inventor of Messick's Tree Paint, has removed to Topeka, Kan.

Farm Poultry, Boston, Mass., is a good poultry magazine. See ad on poultry pages.

Columbia Novelty Co., East Boston, Mass., have an interesting proposition on page 20.

W. A. Mason, Clinton, Ky., would like to tell you about the S W strawberry—said to be a wonder.

Fruitland Nurseries, Augusta, Ga.—General line of nursery stock, particularly for Southern planters.

Not too late to plant peonies in southern sections. Gilbert H. Wilns, Sarcoxie, Mo., has large stock.

Slaughter, Van Petteu & Robinson have Kansas farms to sell. See "Farms for Sale" department.

J. A. Gage, Beatrice, Neb., advertises nursery stock, with special attention to tree seeds and seedlings.

Southern planters will be interested in advertisement of Chickasaw Nursery & Seed Co., Duncan, Ind. Ter.

C. M. Davidson & Co., Huntington, W. Va., want two good men on a fruit farm. Good positions to good men.

Red Cross Supply Co., have a premium proposition which will interest some members of the Fruit-Grower Family.

Milne Mfg. Co., Monmouth, Ill., advertise their celebrated stump pullers, which have given such general satisfaction everywhere.

If you want apple grafts, apple seedlings, or any other kind of fruit tree stocks, write Shenandoah Nurseries, Shenandoah, Iowa.

Otto Katzenstein, Atlanta, Ga., has a plan to re-establish forests and tree plots. If interested—and you ought to be—write him.

Texas trees and other lines of nursery stock are furnished by Austin Nursery, Austin, Texas. Stock can be shipped almost any time.

If you know of three good men who want positions on a fruit farm, address "Roman," care The Fruit-Grower Co., St. Joseph, Mo.

As the hunting season approaches, one thinks of good firearms. Schmelzer Arms Co., Kansas City, Mo., advertise good shotguns at reasonable prices.

George H. Lee Co., Omaha, Neb., advertise a full line of poultry supplies, including the celebrated Lee's Lice Killer. See the advertisement on page 24.

Ladies' Favorite Magazine, Des Moines, Ia., wants some of our boys to get subscribers, and as premiums offers rifles, etc. Now is a good time for this work.

Robert Ridgway, Amboy, Ind., advertises a plan to render hogs immune against cholera. The plan is well recommended, and is guaranteed by Mr. Ridgway.

Jenkins Music Co., Kansas City, Mo., advertise talking machines, but the company can furnish anything in the music line, and the firm is in every way reliable.

Forbes Chocolate Co., 74 Frankfort street, Cleveland, Ohio, manufacture one of the best fruit-jar wrenches we have ever seen. We know, for we have used it.

Every farmer ought to put up his own ice. To all such, John Dorsch & Sons, Milwaukee, have a proposition to furnish ice-making tools. Investigate this matter early.

Charles Schild Co., 5 Frankfort street, Cleveland, Ohio, have a proposition which will interest every poultry-keeper—how to get eggs in winter. Ask the advertiser about it.

Keith's Magazine interests everyone who contemplates building a home, and also those who are charged with the care of a home. Its advertisement in this issue is worth investigating.

Holsinger Bros., Rosedale, Kan., took a gold medal at St. Louis on their fruit display, the principal feature being Cumberland raspberries. Plants of this and other varieties are offered for sale.

If you are interested in Texas fruit lands, write E. W. LaBeaume, general passenger agent of the Cotton Belt Route, St. Louis, Mo., and have him send you literature concerning that country.

Fruit-farming on the Southern Atlantic coast has many advantages—early season, near to best markets, etc. Seaboard Air Line, Portsmouth, Va., will tell you all about the best locations.

J. F. Gaylord, Catskill, N. Y., is the first of the spray pump advertisers to start the season's campaign. Lots of the Defeuder pumps, made by Mr. Gaylord, are in use—and more will be next season.

O. L. Chase, the paint man of St. Louis, so firmly believes his paints are all right that he guarantees them—and the guarantee is reliable, too. His advertisement appears on page 9, and is worth reading.

Maher & Grosh cutlery for years has been the standard of excellence; their pruning, budding and grafting knives are very fine. If you want a knife or razor, write Maher & Grosh Co., 97 A St., Toledo, Ohio.

Norfolk & Western Railway passes through a most excellent fruit country, which needs to be developed. Markets are at hand, and growers will find good soil and climate. Address Agl. Dept. 70, Roanoke, Va.

B. G. Pratt Co., 11 Broadway, New York, manufacture "Scalecide" which is highly recommended for destroying San Jose scale. Now is the best time to fight this pest, according to New Jersey Experiment Station.

How about your fences? Need any good wire fencing? If so, see the advertisement of Advance Fence Co., Peoria, Ill., one of the best manufacturers in the business. This work ought to be attended to this winter.

If you want Hood River (Ore.) fruit lands, or if you want to know anything about the prices of lands out there, write Geo. D. Culbertson & Co., Hood River, Ore. The Hood River Spitzenberg apples sold for $3 a box this year.

Stromberg-Carlson Co., Chicago, Ill., and Rochester, N. Y., manufacture all kinds of telephone appliances, and make a specialty of instruments and lines for farmers. Their booklet free, will tell you all about these and also how to construct and operate telephone lines of any capacity, from a line from one farm to another to the most elaborate system, with "Central" plant.

Humphryes Mfg. Co., Mansfield, O., will issue a booklet containing the various spraying formulas, etc. It will be sent for 4 cents postage, and will be ready December 15. But if you want a copy, better send your name and 4 cents now.

Elliott Telephone & Electric Co., Indianapolis, Ind., advertise a telephone which is said to be one of the best in the country, especially for party lines. Fix up a telephone system before winter sets in—it will be a great thing when the roads are bad.

Harrison's Nurseries, Berlin, Md., sell good trees. In the firm's advertisement an illustration is presented, to show root system. This firm is prepared to handle all orders, from the smallest to the largest. Now is the time to send for catalogue.

Orchard Monarch Spray Pumps are advertised by Field Force Pump Co., Elmira, N. Y. This company also manufactures the Empire King Barrel Pump and the Garfield Knapsack Sprayer. This line of pumps are good ones, and Fruit-Grower readers should send at once for new catalogue.

The Chicago House-Wrecking Co., Chicago, Ill., bought the World's Fair buildings at St. Louis, and has great quantities of building material, pipe, wire, etc., which is offered at low prices. The catalogue tells all about the articles offered, and is free for the asking. Ask for catalogue 399.

Have you any good snapshot pictures of outdoor scenes? The Artsepia Studio, 706 Felix, St. Joseph, Mo., is prepared to make a proposition for the negatives of any good subjects. Look over what you have in this line, and write the above advertiser.

American Horticulture Distributing Co., Martinsburg, W. Va., manufacture a line of insecticides, and at this season are pushing their preparation which is recommended for San Jose Scale. This insect is to be fought from the time leaves fall in autumn until the new growth puts forth in spring. The advertisement of this firm should be interesting at this season, for that reason.

Talking machines have been greatly improved within the past few years, until today they are a source of enjoyment to thousands of homes. Gustavus Babson, Manager, Chicago, Ill., has an advertisement in this issue which should interest every Fruit-Grower reader. See the ad. which explains how you can try the machine free of charge. Address Gustavus Babson, Mgr., Dept. 303 B, 149 Michigan ave., Chicago, Ill.

Have you killed hogs yet? Before you do, you ought to send for an Enterprise Meat Chopper, for it can be used for grinding sausage, making mincemeat, etc. They are low in price and very serviceable; will not rust and will stay sharp. One is needed in every home. Write to Enterprise Mfg. Co., 321 Dauphin St., Philadelphia, Pa., for a copy of Enterprising Housekeeper, a book of 200 choice receipes and kitchen helps; free.

How Can I Get Well

The cry of millions is now answered—If you suffer from kidney trouble, bladder trouble or rheumatism, write me at once and I will give you the answer to this question—I will not charge you anything for it—I will also send you my large illustrated 68-page book, entitled "How Can I Get Well?" as well as a Free Double Treatment for your cure, all without one cent of expenses to you.

In order that all men and women who have given up hope of ever being well again may know that now a genuine, guaranteed home cure for uric acid germ diseases is really in my possession, I stand prepared to prove it to you by offering to send a free double treatment of the new cure to any reader of this paper or their friends who may be afflicted with this disease in the form of too frequent desire to urinate, weak back, prostatic trouble, Bright's disease, dropsy, diabetes, stone in the bladder, gravel, wetting the bed, swelling of the feet and ankles, sciatica, lumbago, gout and other forms of the worst kind of rheumatism, kidney trouble and bladder disease.

This has cured legions. Will it cure you? Write the doctor and see.

I do not claim to cure all diseases, but I do cure the diseases I claim to cure. To prove this ask Mr. James H. McClung of Berthoud, Colo., whom I cured of Bright's disease; Mrs. Mary Furstenberg of Boody, Ill., whom I cured of diabetes; Mr. A. P. Yochum of Pittsburg, Pa., whom I cured of rheumatic gout; Mrs. Phebe J. Brown of Kalispell, Mont., whom I cured of dropsy, and thousands of others whom I have just as successfully treated with this new double non-alcoholic home treatment for each of the diseases and symptoms mentioned in the first paragraph.

All I want to know is that you have one of these diseases; then you write me what disease you have, and give me your name and address, and I will do the rest to cure you. Send no money, no stamps; I will not send anything C. O. D., nor send any bills. But I will send you free, without anything to pay:

My Double Treatment, Free of Charge, for Your Own Disease—(the genuine, original and improved cure-treatment); and

My Free 68-page Illustrated Book telling the Truth About These Diseases, Giving Different Home Methods, How to Analyze Your Urine, etc., etc. And in your letter you can ask me as many Medical Questions as you want and I will answer them fully and freely.

To those who earnestly want to be cured this is a heaven-sent free opportunity. Will you take advantage of it? Yes! Then write me today in care of my firm simply as follows, and all that I promise you will be sent you at once and entirely free.

THE TURNOCK MEDICAL CO., 2823 Bush Temple, CHICAGO, ILL.

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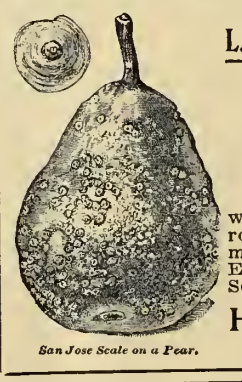
ANY BOY or **GIRL**, 18 years old or less, can learn how they can have my **private pet PONY "Bob"** with his **elegant** rubber-tired **PONY CART** and **finely Custom-made HARNESS** delivered at their door without a cent of cost. I will pay all transportation charges myself. I do not want a single cent of your money. **"BOB"** with his **PONY CART** and **HARNESS**, just as I shall deliver him, is easily worth $300.00. I will send you full particulars showing you that there are absolutely no blanks. If you wish the **PONY** and complete **OUTFIT** delivered to you, all charges prepaid, address a postal, asking for full particulars how to secure him, to **CHARLES E. ELLIS, Pony Dept., 24 North William St., New York City, N. Y**



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L.S.&S. **"HORICUM"** L.S.&S.

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The San Jose Scale Killer

For Fall or Spring Use.

We aim to kill scale and not trees. One spraying will not kill all the scale. Many of them get under the rough bark. They are very minute, but their multitude makes the San Jose Scale a plague like the plagues of Egypt. **"Horicum" is Simple, Strong and Ready for Use.** Sold by seedsmen. Send for pamphlets, worth having, to

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PAY a bigger interest on the investment annually than any other fruit lands in the world. Crops are more certain than in any fruit raising district on the continent. Prices are uniformly higher for orchard products than any section of the United States. As much as $3.00 a bushel obtained for our apples this fall. An average acre of trees 8 years old will yield a crop of 300 to 400 bushels at least, when reasonably cared for; and more when older. There is little or no danger of harmful frosts. No wind storms, or hot winds. Very equable, mild and healthful climate, with some of most beautiful mountain and river scenery in America. Health, wealth and beauty. What more could the most critical wish? Write to

Geo. D. Culbertson & Company
Leading Land Agents
HOOD RIVER, OREGON

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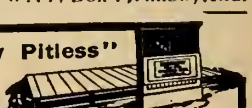
By feeding the sow Ridgway's Vaccine—10 cents a litter—the pigs are vaccinated before birth, hence are born CHOLERA PROOF. One million successful tests, 10,000 strong testimonials. In further proof will ship my own suckling pigs and expose them for weeks in sick cholera herds at MY OWN EXPENSE AND RISK. No other MAN, DOCTOR or VETERINARY ever did or yet dares take any such risk. WHY? Simply because he would lose both his hogs and business. During the past six years I have shipped and exposed in sick cholera herds, scattered from Virginia to Nebraska, and from Michigan to Florida, over 1,200 of my own suckling pigs, WITHOUT LOSS FROM CHOLERA. I give a written guarantee backed by $10,000.00 approved security. Book free.

ROBERT RIDGWAY, Box F, Amboy, Ind.



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WAGON AND STOCK SCALE
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By a Scientific and Never-failing Process. No Knife no pain. Absolutely no danger. IN TEN DAYS THE PATIENT IS SOUND AND WELL—cured to stay cured. Write for proofs, booklet, etc., FREE.
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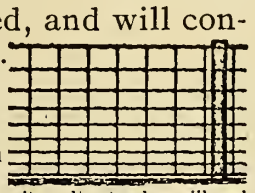
By the Makers

There are many fences on the market. Some tell of their wonderfully hard wire; others speak of new form of construction that make all other forms look ancient and worthless. But through all this it remains a fact that more miles of American fence are in use than of all others combined, and will continue so.



American fence is for sale by the dealer in your town. You can find it there, examine the different styles and make a selection to suit your requirements. Or, write us direct and we will send you a catalogue and tell you where you can get the fence.

THE AMERICAN STEEL & WIRE CO.
CHICAGO NEW YORK
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GOLD MEDAL
Awarded us at St. Louis Exposition for Small Fruits. Principal feature was
Cumberland Raspberry
Best of all Raspberries. for size, color and profit. Send for catalogue of all kinds of Small Fruits.
HOLSINGER BROTHERS
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Cockerel
Bargains in Fine Stock
Buff Rocks, Barred Rocks, Golden Wyandottes, Silver Wyandottes. Bred from selected pens that scored 90½, 94½; at $2.00 to $5.00 each. Write at once.
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without artificial heat, egg foods or stimulants—an easy, inexpensive, positive way. Our Free Booklet tells how to prevent fowls sufferiug from roup, colds, cholera, loose bowels, etc., and how to get eggs in coldest weather. Send a postal to CHARLES SCHILD COMPANY, 5 Frankfort Street, Cleveland, Ohio.

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Our monthly Bulletin giving valuable advice and latest information on high class investments. Also shows how to make your spare dollars earn big dividends. Everyone should read it. Send at once.
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judging from present prospects, if you buy KANSAS CO-OPERATIVE REFINING CO. stock now while it is selling
AT 7 CENTS PER SHARE
PAR VALUE $1.00. It will sell at 15 cents or higher within a very short time, with good prospects of its selling at 50 cents to $1.00 and paying BIG DIVIDENDS almost before you know it. This is a great independent oil refinery, strictly co-operative and has great prospects. When the plant is in full operation it is estimated that the company can pay dividends of 30 to 40 per cent. Everybody knows there is an enormous profit in refining oil.
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FOR SALE—Dairy Farm in Loudoun County, Virginia. Between three and four hundred acres. Less than one and one-half hours ride from Washington. Good railroad facilities. Outbuildings complete in every respect and in first class condition. Good fencing. Large silo, filled for winter. Two dwellings on place for manager, etc. Good watering facilities with large storage tank. Excellent herd of cattle and well equipped dairy. Good land and whole of farm can be cultivated. Excellent opportunity to purchase first-class, well-equipped dairy farm. M. V. RICHARDS, Land and Industrial Agent, Washington, D. C.

SAVE YOUR TREES
Stevenson's New Idea Rabbit Trap will do the work. Catch 'em alive. All kinds of animals. None escape. Self setter. Price $3.50. Stevenson Nursery & Poultry Farm, Fordyce, Ark.

Apple Crop of 1905.

The prices paid for apples this year are likely the high-water mark for this fruit—for many years past, at any rate. In New York prices for winter fruit have ranged from $1.50 per barrel to $2.68 per barrel, the latter price having been paid in Orleans County. The yield for New York State ranged from 5 per cent of last year's crop to 90 per cent of that crop; the highest report was from Nassau County.

Berkeley County, W. Va., had a very large apple crop, of fine quality, and prices were high. Growers have had a most profitable season.

In New York state winter apples are in hands of dealers. Growers will not have to take the risk of handling the fruit—and there is certainly great risk, considering the high prices at which much of this fruit was bought.

Colorado growers have sold about all their apples. Prices ranged from $1.35 to $1.65 per box of fifty pounds. It is said that President Coburn of the Colorado State Board of Horticulture, received about $12,000 for his apple crop.

Poor old Ben Davis! Apples of this variety brought only $2.40 per barrel in a Northwest Missouri orchard this year. The fruit was very fine in quality, and we predict that the man who bought these apples will not lose on the transaction. The apples were really fancy.

The Hood River (Ore.) crop is not so large as that of a year ago, but prices have ranged somewhat higher.

New Cantaloupes.

A new cantaloupe was sent out from Rocky Ford, Colo., this season, which promises to become as popular as the old Netted Gem. This variety originated with D. V. Burrell, who has devoted much time to the improvement of the cantaloupe, and is called Burrell's Gem. It is similar to the old Netted Gem, but has a smaller seed cavity, thus securing more "meat;" quality is said to be even better than the old variety. Kansas City dealers report that the demand for Burrell's Gem was greater than the supply.

Cantaloupes have done well in Lawrence County, Tennessee, and this section promises to become a great melon country. The "Sweet Mountain" Rocky Ford cantaloupes grown there have created a most favorable impression on Eastern markets.

A committee has been appointed by the Texas State Horticultural Society to name fruits found in that state where owners do not know the names. The work of this committee will naturally include the classification of and identification of many fruits which have originated in Texas. J. H. Connell, Dallas, Texas, is secretary of the committee, and specimens of fruits should be sent prepaid to him, accompanied by all information obtainable in regard to the tree, its age, characteristics, etc.

McClure's Magazine Free — Three Months' Test Offer.

"Take the magazine at my risk."
"It costs you nothing for three months."

Mr. S. S. McClure, editor of the well known and popular McClure's Magazine, has made this liberal and unusual offer throughout the country.

When a man is willing to send "the goods" on trial, he must have some confidence in them himself.

As a matter of fact, McClure's Magazine is so well known and so well liked everywhere, the only wonder is that every family has not subscribed long ago.

The plan is this:

By merely filling out and mailing a coupon, you can get the magazine for three months as a test. At the end of that time, if you like it—and we don't know who wouldn't like it—send one dollar to the publisher for a full year's subscription.

If you do not want it longer, at the end of three months just write and say so, telling why you don't want it, and the three magazines already received will not cost you a cent.

Nothing could be more simple.

This is the first time a magazine has ever advertised an offer like this—we say magazine—yet it is hardly right to call McClure's a magazine—it is a book—just about 300 pages, every month, of the most interesting, brilliant, instructive reading to be found in this or any other country.

It is a pleasure to indorse a magazine like McClure's and a pleasure to recommend to our readers the kind of magazine we like to read ourselves.

McClure's presents as great a variety of reading matter as can be found in any publication, but one thing is true of all of it—every article and every story is good and the advertising pages are clean. McClure's gives the kind of reading that educates and uplifts the whole family. It is clean, moral and wholesome in tone.

McClure's keeps its readers informed about great events, the doings of great people are described and pictured in its pages, it reflects the highest ideals of life and teaches its readers how to attain them.

McClure's has special representatives, writers, artists and photographers wherever big events are happening. No expense is spared to get the finest illustrations; in fact, McClure's has its own regular staff of talented artists and writers constantly designing and writing new and interesting features for the pages of this most enterprising and up-to-date magazine.

President Roosevelt, ex-President Cleveland, Gladstone, Mark Twain, Rudyard Kipling, Huxley, Tyndall, General Miles, Arch Deacon Farrar, Walt Whitman, Bret Harte, A. Conan Doyle (author of the "Sherlock Holmes" stories), Robert Louis Stevenson, Nansen, the great Arctic explorer, and others equally famous, have all written for McClure's.

Its stories are by well known authors of good standing, its articles of political and public interest are by noted men of affairs.

"The Railroads on Trial"—That is the subject of a most important series of articles now being contributed by Ray Stannard Baker—every land owner and every shipper should read this series.

The great men who have become great by self-education read such things as McClure's—Lincoln was such a man.

Women who have become famous for the great works they have done received their inspiration through such reading as McClure's.

There is good material in the boys and girls of today—but they must have good reading. Boys and girls raised on such reading as McClure's will never acquire a taste for cheap, trashy, unwholesome literature.

Boys and girls who read McClure's are inspired to dreams that result in deeds worth while.

Men and women who read McClure's are kept in touch with the outside world at its best. No "getting rusty" for readers of McClure's.

We cordially recommend that every reader of our paper accept this three months' trial offer of Mr. McClure's. We are glad to feel that our readers are the class who have a taste for such high class reading as McClure's Magazine—it speaks well for us, as well as for them.

Don't miss a good thing, especially when you get a chance to try it three months for nothing. Find their advertisement which contains the coupon, fill it out and send it in today.

Ridgway's Hog Cholera Vaccine.

Regarding the method of Robert Ridgway, Amboy, Ind., to render hogs immune from cholera, the American Swineherd says: "Nothing of late years has struck the farmers and breeders with more force or favor than the immuning of unfarrowed pigs. It is creating a sensation in many places where it has been put to the severest test. Robert Ridgway, the discoverer of immunizing pigs in a manner in accordance with science, has made the most important discovery affecting the hog industry that has been made. With his tests he convinces all that his Process cannot be evaded, dodged or gainsaid. If you give him an opportunity he is sure to convince you, as the evidence will be unimpeachable.

"All that Mr. Ridgway asks is a trial. Thousands are already using the Process. We would recommend all persons interested and every hog raiser to write to Robert Ridgway, Amboy, Indiana."

Old Methods Obsolete.

The days when a man stood on a log all day long jigging a saw up and down to make lumber to build a house, are past.

Is there any reason why a man should stand all day, and day after day, in cold wet slush, jigging a saw up and down to cut his ice crop? While the time limit on the ice harvest is usually not so short as is that of the grain harvest, there is a decided advantage in securing it quickly when the proper time comes. The great time, labor and money saving device known as the Dorsch Ice Plow is a true friend in time of need. Cutting as much ice in one day as a man could saw in twenty, its use appeals strongly to every one who packs ice for his own use or for sale.

The reliable firm of John Dorsch & Son, 258 Wells St., Milwaukee, Wis., will send an illustrated catalogue of ice harvesting tools to anyone interested.

Truss & Cable Fence Co., Cleveland, Ohio, write that the fence manufactured by the company is proving more popular than ever before, and preparations are being made for a larger business than ever before. The plant has been enlarged, the company reorganized, and persons wanting wire fencing of any style will do well to address the above company for a copy of its new catalogue. Free to those who mention The Fruit-Grower.

Mr. W. F. Schell, proprietor of the Wichita Nursery, Wichita, Kansas, has just issued his new fall and spring catalogue and price list of nursery stock. It is made up in a very handy form being about 3½x5½ inches, profusely illustrated and contains a great deal of valuable information for the man interested in the growing of fruits. Mr. Schell is one of the pioneer nurserymen of the West. His knowledge of nursery stocks was recognized by being appointed one of the commissioners of horticulture at the World's Fair in 1904 and he is now vice-president of the Kansas State Horticultural Society. Readers of The Fruit-Grower and those interested in horticulture will receive valuable information in condensed form by sending to Mr. Schell for one of these catalogues.

C. W. Brown of Monticello, Iowa, says that if the eggs are fertile The "Mandy" Lee will bring out a chick for every egg. It's the Hatching kind. Catalog free. Geo. H. Lee Co., Omaha, Nebr.

BARBERS
MAKE EASY MONEY
We teach the business thoroughly in 6 weeks. You can make expenses while learning. Barbers make $15 to $25 weekly. Our FREE Catalog tells about it. Write today.
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Bronchitis, Asthma and all Bronchial troubles cured. We have absolutely cured hundreds of patients and we have grateful letters of proof from every one of them.
A Free Trial Treatment
of Lung-Germine and a book on the care of your health and the cure of consumption, if you WRITE TODAY.
The Lung-Germine Co., 1199 Weber Block, Jackson, Mich.

READ ABOUT THE 3W STRAWBERRY
in October issue. Doing well everywhere
W. A. MASON, CLINTON, KY.

PER WEEK $1
Edison Phonograph or Victor Talking Machine and a dozen records, $1.00 a week. Edison Records reduced to 35 cents. 30,000 VICTOR and EDISON Records in stock. Send for newest list. Wholesale and retail. Victor, Zonophone and Columbia Records taken in exchange on new Victor Records. SEND FOR CATALOGUE "K." SENT FREE.

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Wholesale Fruits and Produce
Berries a Specialty

a Sure Way
to make money is by sending us your shipments of
FRUITS, BUTTER, EGGS AND POULTRY.

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Hand and Power. Manufactured by
THE G. J. EMENY CO., Fulton, N. Y.

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WE MAKE THE RIGHT KIND.
Send for Catalogue.
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Extraordinary Offer
Strictly first-class fruit trees and all other nursery stock for fall shipment, at just one-half regular prices. Large stock of everything must be reduced. Especial inducements to dealers. Headquarters for Baldwin Cherry Trees, the best ever. Buds and scions true to name in any quantity.
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Taught by Mail We give our entire attention to this one study. We locate positions everywhere. If you wish to earn $20 to $40 per week, write us. Every student receives expert personal attention. Our system is so simple any one can learn. Our FREE EMPLOYMENT BUREAU open to all our pupils. Penmanship and Letter Writing FREE. One free scholarship in every town. Ask for particulars.
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Investor's Review 1534 GAFF BUILDING, CHICAGO, ILLINOIS

RUBY RED RASPBERRY
A new variety which has proven itself the best to plant for profit. A fine stock of plants for sale. Price list and circular on application. C. G. VELIE & SON, Valley View Fruit Farm, Marlboro, N. Y.

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FREE OUTFIT TO AGENTS
FRUIT JAR WRENCH AND HOLDER. So simple, so handy, never fails in tightly sealing or easily opening fruit cans. Very liberal offer to agents. Other specialties. Write for free descriptive matter. FORBES CHOCOLATE CO. Room 140, 74 Frankfort St., Cleveland, O.

MUSICAL COMPOSITIONS
and Song Poems Published on ROYALTY
We arrange and revise for publication. MONARCH MUSIC COMPANY, 436 Baltimore Building, Chicago, Ill.

All the fall is a good time to improve your poultry flocks—stock is cheaper at that time, and the new blood will be in evidence next spring. H. B. Lames, Des Moines, Iowa, advertises some high-scoring stock in this issue. His ad is not in the poultry department—came too late.

J. B. Thiery, Milwaukee, Wis., would like to hear from every Fruit-Grower reader who wants a piano or organ. The proposition which is made in the advertisement on page 14, is certainly a fair one, and those who want a musical instrument will do well to investigate it.

The cabbage crop is not so large as last year, and better prices are expected.

WHAT DO YOU SAY?
Several hundred thousand farmers say that the best investment they ever made was when they bought an
Electric Handy Wagon
Low wheels, wide tires; easy work, light draft. We'll sell you a set of the best steel wheels made for your old wagon. Spoke united with hub, guaranteed not to break nor work loose. Send for our catalogue and save money.
ELECTRIC WHEEL CO., Box 217 . Quincy, Ill.

Protect Trees
Worth planting, worth saving. Add ½c to the cost of your young trees and prevent sun scalding and blistering and keep off rabbits, mice and all kinds of tree gnawers, with the
HAWKEYE
Tree Protector
An elm veneer, easily put on and big enough to protect as long as protection is needed.
PRICES:
100 Wrappers - $0.60
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For circulars giving full particulars address
BURLINGTON BASKET CO.,
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OUR FREE BOOK
tells you how farms are killed by cutting off timber; it explains how to save brooks, keep up fertility better, prevent crop loss from drought and hot and cold winds, etc. You need this book. Its advice will surely make money for you. Write now for it.
OTTO KATZENSTEIN & CO., Box 102.
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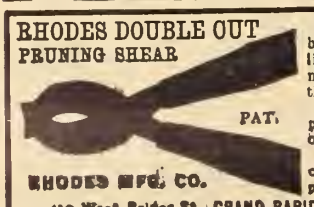
FRUITS
That made Iowa famous by winning Gold Medals at the St. Louis Fair,
Were Grown from
Wragg Trees
and Wragg Trees are grown only by
J. WRAGG & SONS CO.
Waukee, Iowa.
Send for Catalogue and Prices. Agents Wanted.

BERCKMANS' TREES
Are as good as the best. 50 years in business is our guarantee.
Catalog Free.
P. J. BERCKMANS CO., Inc.,
Fruitland Nurseries. AUGUSTA, GA.
460 acres in Trees and Shrubs. Established 1856.

RHODES DOUBLE CUT PRUNING SHEAR



PAT.
Cuts from both sides of limb and does not bruise the bark.
We pay Express charges on all orders.
Write for circular and prices.
RHODES MFG. CO.
419 West Bridge St., GRAND RAPIDS, MICH.

FOR CLOSE PRICES ON
Apple, Plum, Pear, Cherry, Peach and Grape Vines
WRITE
WOLVERINE NURSERIES
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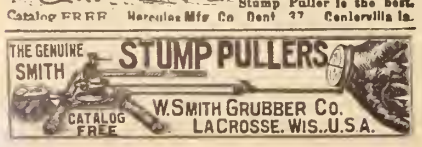
MAKE MONEY
pulling stumps, grubs, etc., and clearing land for yourself and others. Hercules Stump Puller is the best.
Catalog FREE Hercules Mfg Co Dept 37 Centerville Ia.



Gardening Department

The Value of Good Seed.

This chapter is not specially about gardening, but the moral applies to gardening, as the same principles hold good.

A young man, a neighbor of mine, who has lately bought a run down farm, came to me for advice about getting some of the land into clover to renew it. I told him to get the best grade of clover seed he could find, even at a high price, and put ten pounds to the acre, with a thin seeding of extra plump northern oats. The clover seed cost him $8.75 per bushel and the oats 50 cents per bushel. As is generally the case on a new place, he was short of money and this all made a painful depression in his pocketbook. His nearest neighbor and his father-in-law both kindly informed him that he was foolish to spend money that way. They bought some "pretty good" clover seed at $7.00. It was somewhat foul with trash and weed seed, "but see how cheap it was." They sowed it with some cheap light oats bought at feed prices.

I was out through the fields the other day and it was a great object lesson. My young friend has the finest field of clover I have seen for a long time, heavy, smooth and clean. Not a bare spot or a weed in it. His oats stood up in good shape and made an excellent yield, considering the poor land. That crop of clover will add easily $10 an acre to the value of the land. That other fellow's had a "spotty" crop of oats, badly lodged. The clover will not be worth saving; here and there a fairly good spot, but so full of weeds that it would not be safe to leave it.

Buying Seed with a Microscope.

Next time you are buying seed of any kind, especially grass seed or clover seed, put a sample of it under a small microscope. A common cheap magnifying glass will do. Get several samples of clover seed and lay them side by side on white paper and examine them closely. You will see enough to cause you to keep shy of low grade clover seed forever. In one sample from Ohio I found over a dozen kinds of bad weeds, including dodder, wild carrot, buckhorn, thistle and sorrel. Think of getting a mess like that on your place. I have bought and sold hundreds of bushels of clover seed and if my experience is worth anything to you, you take my advice and don't take any but the very cleanest and best grade, even at a considerable difference in the price.

Purity in Garden Seeds.

In garden seeds there is not so much danger of getting bad weeds, but there is always danger of getting seed that is not true to type. You cannot tell anything by the looks of the seed, and the only thing you can do is to trust to the honesty and reliability of the seedsman. You may have to pay a little more, but sometimes the worst seedsmen in the business are the ones that ask extravagant prices. You can't judge by the price. If you get uniformly good results from a seedsman it will pay you to stick to him and give him to understand that you are depending on him for good seed.

A Good Seed Year.

The prospects are that practically all seed crops will be good this year. The greatest shortage will be in onions. They are running fom 20 per cent to 60 per cent of a crop and some varieties will be in very short supply by planting time. Any who are expecting to plant heavily of onions should lay in their supply of seed fairly early. Vine crops are all fairly good this year and corn and sweet corn are extra good. Wax beans are somewhat under a full crop but there will be no serious shortage. With the exception of them and the onions the seed crop is the best for years.

The Possibilities of a Back Yard.

One of the men working for me bought a couple of lots in May of this summer, about a half acre in all, unbroken sod. It was getting most too late in the season to make any garden on them and he talked of letting me have the use of the land for late potatoes to get the sod subdued for next year's garden, but finally concluded to put it in himself and tend it mornings and evenings. He planted the whole thing in Banner potatoes the last part of May after getting the sod partially broken up with a plow and disk. Then, as an afterthought, he planted beans, and onion sets, and pumpkins and some squashes between the rows. As it was to be tended with a hoe he could easily do this. He was telling me today that he would have over 100 bushels of potatoes and that he had counted over 500 pumpkins and squashes on the ground. Besides he has enough beans and onion to run him through the winter. The tending has all been done at spare times and the only time he has lost from his work is the one day that it took to plow the ground and plant the potatoes. There are dozens of such vacant lots in every town, and while all may not be as rich soil as this clover sod, there are wonderful possibilities in all of them.

Some Cheap Pig Feed.

About the nearest I ever came to having a downright snap is in the wagon loads of pumpkins I am feeding to the pigs now. In a field of White Evergreen sweet corn I was growing for seed, I mixed in a couple of pounds of sweet pumpkin seed. As these seed are small, about the size of a grain of corn, they will run through the planter right with the corn or sweet corn without any extra trouble of planting. When we were cultivating the sweet corn we noticed here and there a pumpkin vine, but they did not make any great show till after the pumpkins began to set on. I never saw pumpkins lie much thicker on the ground and as the sweet corn is a full crop the pumpkins are just "clear velvet." I can't see where they have cost us a cent except about a half a dollar for seed. We are hauling out two big loads a week for the pigs, saving lots of seed from the best specimens, and all hands are reveling in pumpkin pies. We are sure getting the worth of that half dollar.

County Experiment Farms.

In a great many of the counties in Iowa extensive experiments in corn and other farm crops are carried on at the county poor farm. Our county, Page county, Iowa, has such an experiment station and I had a very interesting visit there the other day. It is carried on jointly by the state and the county, and is under the immediate direction of a committee of farmers appointed from the county farmers' institute. As corn is the

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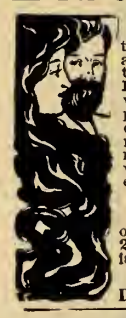
Don't Have Gray Hair



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Don't delay another day, but write at once. We send regular $1 worth for 25 Cents by mail, prepaid. Hale's Turkish Hair Elixir has been sold for 50 years
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on your face and your face always feels soft and smooth, if you use
WILLIAMS' SHAVING SOAP
Sold everywhere. Free trial sample for 2-cent stamp. Write for "The Shavers Guide and How to Dress Correctly."
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11 Cents a Week OR 48 Cents a Month
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MISSISSIPPI WASHING MACHINE
SIX MONTHS FREE TRIAL
With its SPRING MOTIVE POWER AND ROLLER BEARING ROTARY ACTION, it runs easier than any other washer made; a mere child can run it. Forces double the water through the clothes at double the velocity of any other washer and will do double the work in half the time. Will wash cleaner, better, and with less soap than any other washer made. Won't wear or injure the finest lace, and will wash the heaviest blankets or carpets. No more wearing out clothes; this alone will save its cost in a few months. Washing made EASY, QUICK, CLEAN AND ECONOMICAL. Worth twice as much as any other machine advertised or sold at $10.00 to $15.00.
OUR OFFER. Cut this ad. out and mail to us, or on a postal card, or in a letter say, "Send me your new Washing Machine Offer," and you will receive by return mail, FREE, the most wonderfully liberal washing machine offer ever heard of. You will get a proposition never made by any other house. Don't buy any kind of a washing machine, at any price, on any kind of terms, until after we mail you our great offer. Write TODAY and get all we will send you by return mail, free SEARS, ROEBUCK & CO., Chicago.

5.75 IN ALL

main crop here the experiments are mostly in corn, and about thirty acres have been given up to the different plats of corn. First in interest is the variety test where forty-nine varieties of field corn are growing in separate plats. In fact, there are 147 of these plats, as three are planted of each variety, in different parts of the field so that an average may be had. The seed was secured from farmers of the county and from various seed men. An accurate record is kept of the stand, the yield, and all other items of importance.

Then there are plats given up to the comparative merits of planting or listing, of thick or thin stands, of three, four or five cultivations, and many other interesting questions in corn growing.

This is all extremely practical and something that can be done in any county in the corn belt. The results published in the local papers and given in full at the winter farmers' institute will be a big feature.

Tomatoes on a Large Scale.

A subscriber writes me for advice on tomatoes, as he expects to put out 100 acres in the spring. He has been growing on a small scale and using Jewel for early and Matchless for main crop, and he wants to know if there is anything better. They must be bright red varieties as the bulk of them will go to the cannery. The early ones will be shipped to market.

Yes, I would advise Earliana for main crop early instead of Jewel. It is not quite so fine looking a tomato, but it is quite a bit earlier, and ripens its fruit more all together and all early. I think it is the most profitable early tomato that can be grown.

For main crop I would prefer Stone to Matchless. It is fully as large and high colored and for me is a better yielder. For either market or canning I do not think it can be beaten for main crop.

Don't Neglect to Fall Plow.

By all means don't put off too long doing that fall plowing. It will add nearly a third to most garden crops. For one thing it disposes of the cutworm and that is no small item. Then the freezing and thawing of winter thoroughly pulverizes the soil and makes it fine and mellow so that the plant roots can get the good of it.

Best of all, your land is ready to go right to work on in the spring and you can get your crops in on time. Many garden crops such as early potatoes, beets, onions, radishes, lettuce, parsnips and early peas, must be put in very early if they are to be a success and if you have to wait to spring plow you are apt to be too late.

By all means get it done at once.

The Ginseng Business.

I would like to hear from The Fruit-Grower people who have grown ginseng or tried it. I have always been skeptical of the great profits that were supposed to be made in the business . It has been advertised now long enough to determine what is in it anyway. Speak up and let's hear something about the facts in the case.

The Road Drag.

I want to put in a good word for the so-called Missouri road drag. I have been using one all summer on my half mile of road, and I am an enthusiastic convert to the idea of improving our country roads that way. The gardener and fruit grower are worse hit than almost any one else by the bad roads, as their perishable products cannot stand the shaking up they get on bad roads. A common cheap road drag used after every rain will keep our dirt roads as smooth as a pavement and almost as hard.

I made me a cheap plank drag after the approved pattern, and keep it just inside the front gate. After every rain, when the road begins to dry a little, I go up and back about three times the half mile of road from my place to the corner, smoothing the road and dragging the loose dirt toward the middle. The result is a well crowned road with a smooth crust that will shed almost all the water that falls on it. While other roads near me, naturally just as good as mine, have been almost impassable at times, this piece has been like a turnpike.

Make you a road drag and get out and try it, and it won't be long till all your neighbors will be at it.

HENRY FIELD.

Shenandoah, Iowa.

The World's Fair Medals for Fruit.

Persons who were awarded medals at the St. Louis Exposition last year have been in doubt as to what kind of medals they would receive, or whether they would receive any unless they paid for same. Secretary Goodman of the Missouri State Horticultural Society has taken this matter up with the secretary of awards of the exposition company, who announces that the medals will not be ready for several months yet. This gentleman writes that every exhibitor will be given a certificate of award and a bronze medal for all bronze medal awards. Persons who were awarded silver medals will receive a bronze medal, with the words "Silver" stamped thereon, and winners of gold medals will receive bronze medals with the word "Gold" stamped thereon. If any who are entitled to gold or silver medals wish medals of these metals, they can be secured by paying for them; otherwise they will receive a bronze medal, stamped to show the kind of medal to which they are entitled. But it will be some time before even the bronze medals are ready.

Pays to Use Messick's Tree Fertilizer.

Mr. H. L. Messick, St. Joseph, Mo.

Dear Sir: I have for some time been trying to find you and tell you what exxcellent success I have had with your apple fertilizer. I had some around some of my old "Duchess" trees, from which I hardly every cleared more than from thirty to ninety dollars, but this year I must have had altogether over three hundred bushels of apples and cleared over two hundred dollars from only thirteen to fourteen trees.

Also had the same good results from using your plum fertilizer. My young "Gold" plum trees were densely covered with elegant, large, beautiful plums—some as large as a small peach—which sold at a fine price.

These are actual facts and not given you simply as a "hand-me-about" and any one wanting the proof can come right to Hannibal and get them. Some of the best people here visited my orchard while the fruit was on.

Please give me best price on your dry fertilizer per ton now.

Yours truly,

C. M. FETTE.

N. B.—Mr. Messick is now at Topeka, Kan., and should be addressed at that point.

WANTED.

Partner to buy half interest in large peach and cherry orchard. Two years old. Take charge of same. For particulars, address J. C. HALE, Winchester, Tenn.

J. C. M. Johnston, New Wilmington, Pa., wants to know if any of the members of The Fruit-Grower Family has tried budding or grafting sweet cherries on wild cherry seedlings. Has any one had any experience along this line?

Labor and Money Saved at Butchering Time

When the farmer kills, about one half of the hog goes to make lard and sausage. For taking care of these valuable portions he needs just such a machine as shown herewith. It will more than pay for itself in one week's work, and last a lifetime.

ENTERPRISE SAUSAGE STUFFERS

are easy to manage, and they do the work right. The cylinder is bored true. The plate fits true. Meat cannot work up over the plate. The spout is corrugated, preventing air getting into the casing, assuring preservation of sausage. Can be changed to a lard or fruit press in one minute. This is one of the labor-saving machines that save money. Eight sizes and styles. Another is the **Enterprise Meat Chopper.** Cuts sausage perfectly. Look them up in your hardware store, or write to us about them. Look for the name "Enterprise" on the machine. Write for the "*Enterprising Housekeeper*" a book of 200 choice receipts and Kitchen Helps sent free.

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Pulls Stumps or Standing Trees.

Clears a two acre circle with one sitting—pulls anything the wire rope will reach; stumps, trees, grubs, rocks, hedges, etc. A man and a boy with one or two horses can run the

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Stump Anchored or Self Anchoring.

A minute and a half is all it takes for the ordinary stump. No heavy chains or rods. Note the strong wire rope with patent coupler—grips the rope at any point. Does not chafe rope; far ahead of old-style "take-ups." Smallest rope we furnish stands 40,000 lbs. strain. It generates immense power and it's made to stand the strain. We also make the Iron Giant Grub and Stump machine, the I. X. L. Grubber and Hawkeye Grub and Stump Machine. Write for free illustrated catalogue.

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PEACH Grand lot of trees, grown on the bank of Lake Erie, more stocky and hardy than trees grown in the interior. Are two miles from any peach orchards, so free from borers and all other diseases

Large stock of **Fruit Trees and Small Fruits, Grape Vines, Etc.** Headquarters for

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Forty Acres Hardy Roses, NONE BETTER GROWN. 44 Greenhouses of Palms Ferns, Ficus, Roses, Etc., Etc. 52 years. 1200 acres. Correspondence solicited.

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Set it up in your own home and put it to EVERY POSSIBLE TEST for 30 days. Test it for economy in retaining heat, for soundness and durability; for quick, reliable cooking, roasting and baking; test it in ANY WAY YOU CHOOSE to convince yourself that it is just as represented and that we can save you from $5 to $35 on your purchase and give you better goods than you can obtain anywhere else. We have our own big factory for supplying our ever increasing trade. Every stove and range which we manufacture is not only sent on 30 days free trial anywhere in America but is

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$9.95 for this large handsome steel range without high closet or reservoir. With high warming closet and reservoir, just as shown in cut, **$13.95. Reservoir** is porcelain lined. Heavy cast top with 6 full size cooking holes. Large oven, regular 8-18 size. **The body** is made of cold rolled steel, top and all castings of best pig iron. **Grate;** we use improved duplex grate, burns wood or coal. **Nickel** band on front of main top; brackets and tea shelves on closet, band and ornament on reservoir; oven door, etc. Highly polished, making the range an ornament in any home.

$2.95 for this Oak Heater just as illustrated. Burns hard or soft coal or wood. Has drawn center grate, corrugated fire pot, cold rolled sheet steel body, heavy cast base, large cast feed door, ash pit door and ash pan, swing top, screw draft-regulator. Polished urn, nickel top ring, name plate, foot rails, etc.

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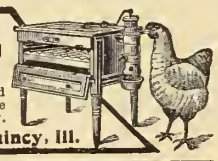

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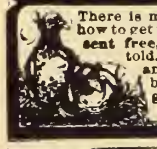

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Poultry Department

Economy of an Incubator.

At about this season every year many persons are asking themselves the question, Shall I buy an incubator this season? For those who are considering this subject now, some suggestions may be helpful.

The use of incubators is undoubtedly an economical method of hatching poultry, provided any considerable number are to be hatched. There is no need of having a lot of setting hens to be fed while they are hatching broods of chicks. If they can be broken of the desire to set and can be started to laying again, then they will be earning more than the expense of operating an incubator; if they cannot be broken of their broodiness, they can be fattened and sold. It is generally recognized that young hens should be depended upon for laying; this being true, when old hens are through laying, sell them; don't allow them to "eat their heads off" while trying to hatch a brood of chicks. The hatching can be done with an incubator.

The person who decides upon buying an incubator should begin early to investigate the merits of the different machines. No one can say what incubator is the best, for opinions differ greatly. The best way to do is to study the different catalogues and find which machine will be most likely to suit you.

Order the machine early. Incubator manufacturers are rushed during the late winter and early spring, and your order may be delayed. Get the order in early, so the machine will be ready when your eggs are on hand. Nothing is to be gained by delay, and much can be lost if the machine is not at hand when you want it.

After you decide upon the machine you will use, you must remember that no incubator will hatch eggs which are not fertile. See that your hens get exercise, and are not overfat, else the germ in the eggs will be weak, and a good hatch cannot be secured. Then, too, one must arrange to care for the chicks when they are hatched. If the hatch is to be taken off early some sort of brooder will be necessary. The young chicks must be kept warm and at an even temperature, and this can best be done in a brooder. It is useless to carefully look after an incubator, use fertile eggs, so that a good hatch can be secured, and then fail to raise the chicks by failing to care for them just after hatching.

When all these things are considered, one will realize that the present time is none too early to begin to arrange for next spring's hatching. If the work is neglected, the chance are that failure will result.

Fattening Turkeys.

The following facts concerning the fattening of turkeys are given in a recent Farmers' Bulletin:

A test carried on in Ireland of different methods of fattening turkeys was recently reported by H. deCourcy. Thirty young cockerels of similar breed, which had ranged on stubble fields for about three weeks and had received some grain during the latter part of this time, were divided into three uniform lots, the individual turkeys weighing on an average of 17 pounds each. The feeding period covered three weeks, and during the first ten days all the turkeys were fed in the morning a mash of equal parts of boiled potatoes, boiled turnips, barley meal, maize meal, and ground oats with one-half as much linseed meal, the grain being wet up with skim milk to a rather stiff mash. Milk and water in separate vessels were also supplied, as well as mixed charcoal and grit. The turkeys were fed in a yard, and after an hour for feeding and exercise were turned into a rather dark poultry house, where they remained until evening, when they were again driven to the yards and fed crushed corn, oats and barley. During the latter part of the test this method of feeding was continued with one of the lots, with the result that the average gain per bird during the entire feeding period was 2 pounds 12 ounces. Of the remaining two lots, one was fed twice a day by hand cramming a stiff mash of equal parts of ground barley, corn and oats with a small amount of melted fat, linseed meal and skim milk, the mixture being rolled into pellets about 2 inches long and 0.75 inch in diameter. The average gain for the entire period was 3 pounds 6 ounces per bird. The remaining lot was fed with a cramming machine a similar mixture wet up with skim milk to form a slop of about the consistency of cream. Owing to their size and strength, it is stated that at first some difficulty was experienced in feeding the turkeys, but this was soon overcome by placing the birds one at a time on a low stand, which raised them off the ground so that the head was on a level with the nozzle of the cramming machine and in such a position that they could be fed conveniently. "After a day or two the turkeys grew accustomed to this manner of feeding and when meal time came they showed much eagerness to mount the stand and receive their share of food." With this lot the average gain was 4 pounds 4 ounces per bird. As will be noted, the greatest gain was with the turkeys fed the soft mash with a cramming machine. The cost of feed ranged from 34 cents per head with the turkeys fed without cramming to 41 cents with those fed with a cramming machine.

At the Manitoba experiment station S. A. Bedford a few years ago studied the gains made by turkeys confined in pens as compared with those allowed their freedom. The birds in pens were given all they would clean, eat of a mixture of wheat, oats and barley 2:1:1. In the morning the grain was fed chopped and wet with milk, but in the evening it was fed whole. It was noted that the turkeys were apparently more fond of oats than of the other grains, so toward the end of the fattening period the proportion of this grain was increased. A little grain was fed the turkeys which were not confined in addition to the food which they could gather. The five turkeys in pens weighed on an average of 6.55 pounds each at the beginning of the test. During the forty-two days of the feeding period the average gain was 4.05 pounds, 6 pounds of grain being eaten per pound of gain. The turkeys running at large also weighed at the beginning of the test 6.55 pounds each and made an average gain of 1.85 pounds. In both cases the greatest gains were made during the first three weeks of the period. It is stated that the penned turkeys when dressed shrank 5 per cent less than those running at large and that they were plumper and were in every way more inviting in appearance.

Feeding Before Market.

Fowls should be kept confined rather closely for a few weeks previous

LEE'S

EGG MAKER

The egg-producing food of the Petaluma country. Fed in connection with the regular food ration. Contains in correct proportion all necessary elements for meat and shell. 50 feeds for 1 cent. 25 lb. pail, $2.00

GERMOZONE

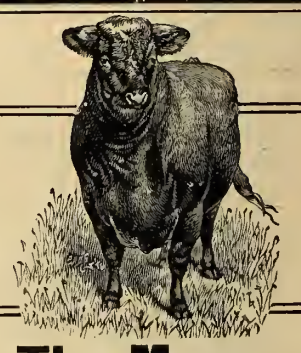
—the poultry medicine. A preventive and cure for Roup, Colds, Inflammation of Throat, Canker, Chicken Cholera, Limberneck. Price 50 cents, postpaid.

LEE'S LICE KILLER

the original liquid lice killer. Strongest and best. Kills all vermin. No dusting, dipping or greasing, if you use Lee's. It's the standard—all others are imitations. Get the best. 1 gal. ex. paid, $1.25.

Write for FREE booklets—Mandy's Poultry School and OTHERS. Also for 1906 Catalog "Mandy" Lee Incubators and Brooders.

Geo. H. Lee Company Omaha, Neb.



The Money Breed

What breed of beef cattle makes most money? Dr. Walter J. Quick of Indianapolis, Ind., will discuss this subject in the November issue of that widely read, authoritative paper

BLOODED STOCK

This issue (Novemher) will be devoted entirely to Shorthorns and Beef Breeds. You're out for money. Then subscribe for BLOODED STOCK. Just 25c for 12 months. You can afford 25c. Why, this number will be worth one hundred times that in advice on buying, breeding, feeding, housing, fattening and marketing. Subscribe now. The December issue will be devoted to "Winter Care of Stock."

Blooded Stock, Box 219, Oxford, Pa.

The National Fruit Grower

ST. JOSEPH, MICHIGAN

A large, handsomely printed monthly magazine devoted to the fruit industry. Ably edited. Every issue full of good things. Latest and best methods of cultivation, handling and marketing all kinds of fruits. Articles from the best horticultural writers appear in its columns. WORTH TEN TIMES ITS COST.

TERMS:—50c. per year; $1.00 for 3 years. Trial 3 months for 10c and 3 names and addresses of live fruit growers. Sample copy free.

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$100,000 offered for one invention; $8,500 for another. Book **"How to Obtain a Patent"** and **"What to Invent"** sent free. Send rough sketch for free report as to patentability. We advertise your patent for sale at our expense.

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GREEN BONE MAKES EGGS

Lots of them, because it is rich in protein and all other egg elements. You get twice the eggs, more fertile, vigorous chicks, earlier broilers, heavier fowls, bigger profits.

MANN'S LATEST MODEL BONE CUTTER cuts all kinds of bone, with adhering meat and gristle, easy, fast and fine. Automatic feed, open hopper, never clogs. Cat'lg free.

10 Days Free Trial. No money in advance.

F. W. MANN CO., Box 108, Milford, Mass.

An extra heavy fence. Every wire—both strand and stay—No. 9 gauge. Thickly galvanized. Best grade steel. We mail free sample for inspection and test. A more substantial, stock-resisting, time-defying fence was never stapled to posts.

WE PAY FREIGHT ON 40 RODS
Write for book showing 110 styles.

Brown Fence and Wire Co., Cleveland, Ohio

BROWN FENCE

16c to 35c Per Rod—Delivered

SAMPLE FREE

Rippley's Combination Sprayers and Whitewashing Machines.

Spray cold water, mineral paints and whitewash buildings to perfection. Made of brass, copper and galvanized steel. Fine for whitewashing barns, houses, cellars, spraying orchards, lawns, etc.

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RIPPLEY HDW. CO., Mfrs., Box 217, Grafton, Ills.

Eastern Agts., Excelsior Wire Poultry Supply Co., N. Y. City, N. Y.
Northern Agts., International Stock Food Co., Minneapolis, Minn.
Pacific Coast Agts., Lilly, Bogardus & Co., Seattle, Wash.
Chicago Agt., Vaughan Seed Store Co.
St. Louis, Mo., Agt., Blank Hauk Dairy Supply Co.

to selling, and fed a fattening ration. Their ration should consist of meal mixed with some liquid to the desired consistency; the reason for this is that the grinding having been done previously, the bird can digest and assimilate more quickly and completely and with less loss of energy than when it is necessary to do the grinding of whole grain. The best ration I have ever fed to fowls for the purpose of fattening them is composed of the following: Four parts cracked corn and one part each of bran, middlings and ground beef scraps. Sour milk or buttermilk is mixed with the food until the desired consistency is reached. The food is fed as dry as possible, and to supply the necessary liquid the birds are supplied with an abundance of fresh drinking water. I feed this mash to the fowls without variation from the start to the finish; and it goes without saying, of course, that the fowls are fed all of it that they will eat. Do not give them too much at a time, but feed a little at each time and often; I secure the best results by giving the birds all they will eat up clean four times a day.

Birds are always fasted before they are killed, so that when killed the crop and intestines may be empty. No food should be given for at least twelve hours previous to killing; indeed, I have found that a longer fast —eighteen to twenty-four hours—is desirable.—Farm, Field and Fireside.

Money in Fattening Turkeys.

The Utah Experiment Station bought a number of turkeys on November 23 and fed them four weeks to find out whether it was a paying business to feed turkeys intended for market. The principal articles of food were whole wheat and corn. The turkeys also had all the skim milk they would drink and all the sugar beets and alfalfa leaves they would eat. During a portion of the time they were given a mash of ground wheat and bran once a day. The food cost of the gain in weight during the experiment was a little over six cents per pound. The turkeys also sold at an advance in price. The quality of the meat was extra good and the test showed a good margin of profit.

Sell Ducks While Young.

It has long been known that there is no profit in raising ducks for market, unless they are sold young, but the exact figures given in a recent bulletin of the Utah Experiment Station are rather startling. The food cost of a pound gain with young ducklings started at 2.44 cents the second week and increased gradually to 3.36 cents the sixth week. The seventh week the cost was 4.66 cents; the eighth week, 5.39 cents, and the ninth week, 6.52 cents. Two of the ducks were then fed for five weeks more and during that time gained only 0.8 of a pound in weight, although they consumed 22.5 pounds of grain, the same weight of skim milk and one pound of bones. It required more than twelve times as much grain to make a pound of gain in the last five weeks as in the first nine weeks.

Where to Run an Incubator.

Naturally an incubator will give best results where there is but little variation in the temperature. However, a good incubator can be operated in almost any room of well-constructed outbuilding with reasonably good results. In cases where people have failed to secure a good hatch, the fault, as a rule, can be traced to imperfect ventilation of the room, and for this reason we advise and find the greatest satisfaction can be secured by running the incubator in a dry, well-ventilated cellar. It has been frequently stated that the hen does not add moisture to the eggs. This, however, is a mistake, as careful experiments will prove. The body of the hen and the down enveloping the eggs are always moist.

We have found, during nearly twenty years of careful study and experiment, that a large portion of the failures and poor hatches can easily be traced to poor, impractical ventilation, which was either too excessive or insufficient, allowing the poisonous carbon dioxide gas thrown off by the eggs to accumulate. We have been reading for many years that it is an easy matter to hatch chicks in incubators, but a very different matter to raise them. The difficulty is simply that the chicks were not well hatched—not hatched under natural and perfect conditions. The chicks were hard to raise because they were hatched poorly.—E. G. Wyckoff in The Feather.

Ground Grain vs. Whole Grain.

The New York State Station has recently reported experiments made to determine whether it will pay to grind grain for poultry.

The first experiments were begun with two lots of 22 chickens each, one lot being fed "all its grain finely ground, the basis of the ration being a mixture of two parts by weight of corn meal, two parts wheat bran, and one part each of wheat middlings, old process linseed meal, and ground oats. This was supplemented by skim milk, dried blood, and additional amounts daily of corn and ground oats. The grain fed (the other lot) was either whole or cracked and consisted of oats, wheat, corn and barley. Skim milk, fresh cut bone and dried blood were fed in addition."

At the end of 12 weeks "the cockerels among these chicks were caponized and fed these contrasted rations, during the winter, 12 capons in each lot being fed for 4 months and 8 continued nearly 7 months.

"Two other lots of capons from chicks raised by hens and treated alike until caponized were fed these contrasted rations for about five months.

"The ground grain ration proved considerably more profitable than the whole grain ration with the growing chicks; and the same was true of capons of equal weight from these chicks and from others of equal weight and age fed alike before caponizing. No difference was noticed in vigor of chicks or capons fed either ration, but all made good gains and returned a fair margin of profit at the ordinary prices."

Get This Gold Pair FREE

Listen! In the past year I received thousands of letters from spectacle-wearers all over the world, expressing their thanks and appreciation, and the one I give here is a good sample of what they all say. The Reverend O. C. Clark, one of the most prominent ministers in the State of Illinois, says: "I highly appreciate your famous "Perfect Vision" spectacles, for I can honestly and truthfully say that with them I now read the finest and smallest print both day and night, just as well as I ever did in my life Your spectacles are truly marvelous." Now I have no doubt but that the testimony of this noted minister of the gospel is sufficient proof to every fair minded spectacle-wearer that my famous "Perfect Vision" spectacles are really **THE BEST IN THE WORLD,** as I claim.

But I Want YOU to Judge Them For YOURSELF

and thereby get **YOU to send me YOUR testimonial also.** Hence, before placing them on the market for sale at their regular price of $5 per set, I make you the following special offer which will actually save you $4 cash: Just write me your name and address and I will mail you my Perfect Home Eye Tester, free, with which you will be able to test your eyes at your own home, perfectly. Then when you return me the Eye Tester with your test, I will send you a complete five dollar family set of my famous "Perfect Vision" spectacles for only $1 (which is an actual saving of $4 to you), and this will include a pair of my handsome Rolled Gold Spectacles absolutely free of charge. This set will last yourself and family a lifetime. With these famous "Perfect Vision" Spectacles of mine you will be able to thread the finest needle and read the smallest print, both day and night, just as easy as you ever did in your life, and this even if your eyes are so very weak now that you cannot read the **HEADLINES** in this paper. I also hereby agree to return you your dollar cheerfully if you **YOURSELF** don't find them to be the most perfect-fitting, clearest and best you have ever bought anywhere, at any price. Write today for my free Home Eye Tester. Address my company as follows:

DR. HAUX SPECTACLE COMPANY, Haux Building, ST. LOUIS, MO.

I WANT AGENTS ALSO And any man or woman (also storekeepers), without any previous experience whatever, can fit the weakest eyes with my Improved Home Eye Tester. This is so simple that any one can work it with perfect satisfaction and easily earn from $25 to $100 weekly selling my famous Perfect Vision Spectacles, either in their own homes, traveling or in stores. My agents need no license as I furnish necessary documents with the Agent's Outfit

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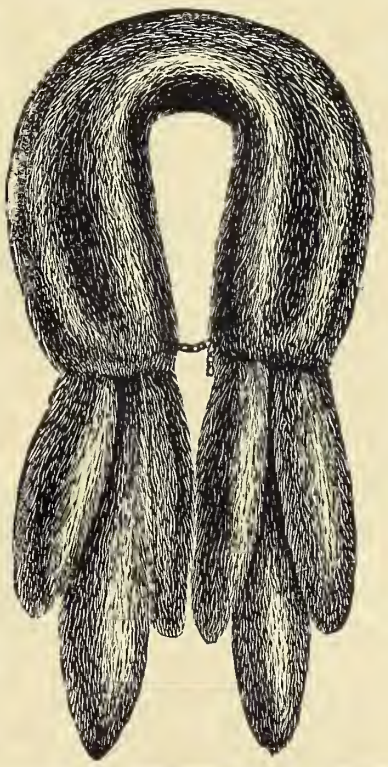

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Send us your name and address and we will send you free and post-paid 24 pieces of our jewelry novelties to sell at 10 cents each. Everybody you show them to will buy them of you. When sold send us the $2.40 and we will at once send you this

Handsome Fur Scarf

It is nearly 48 inches long, made from black Lynx fur, has six full, bushy tabs, very latest style, and we know you will be more than pleased with it. When you receive it we know you will say it is the most elegant and thoroughly good fur you have ever seen. Nothing similar to this scarf has ever before been offered as a premium; it will give years of satisfactory wear. It gives a stylish, dressy effect to the wearer's appearance. The only reason we can offer them is we had a large number of them made up for us by one of the large furriers during the summer when trade was quiet; this is the only reason we are able to offer such an expensive premium. We hope you will take advantage of our offer without delay. This is an extraordinary offer and cannot be duplicated by any other reliable concern. We trust you with our jewelry until sold. It costs you nothing to get this fur. Address,

COLUMBIA NOVELTY CO.,
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FREE 118 PIECE DINNER SET

DON'T SEND MONEY—WE PAY FREIGHT.

We ship the coffee to you and send you your premium *with the coffee* and also send the three-piece Tea Sets all together, and if you are not perfectly satisfied with everything, you may return the entire shipment *at our expense.* Nothing fairer than this, Is there?

Write to-day for our illustrated offers, order blanks, etc.

THIS DINNER SET consists of 118 pieces of the handsomest chinaware ever manufactured. IT IS THE LARGEST DINNER SET EVER OFFERED BY ANY FIRM IN THE WORLD AS A PREMIUM. Made of genuine porcelain china, guaranteed full size for family use, each piece magnificently decorated with clusters of red rose buds with delicate sprays of green leaves arranged in graceful festoons. The design is burned into the ware giving it that soft velvety glaze only found in the most expensive French china. EACH PIECE is HEAVILY TRACED with PURE GOLD LINES, knobs, handles and borders, and in addition the borders are exquisitely embossed. This grand set of dishes given ABSOLUTELY FREE to every lady who will sell only a few pounds of our celebrated brand RED CROSS COFFEE. WE MEAN JUST WHAT WE SAY. Sell a few pounds of our Red Cross Coffee and the Dinner Set is yours. WE ARE DETERMINED to have every lady in the land use our fine coffee, and we will give for a short time, WITH EACH pound of Red Cross coffee a beautiful imported three-piece Tea Set as shown in picture. This Tea Set is exquisitely decorated with flowers and birds of many colors, and each piece gold traced. THINK FOR A MOMENT how easy it would be to sell a few pounds of coffee with such an inducement.

If you will SEND US A POSTAL giving us your name and address we will send you by return mail a set of our beautifully illustrated offers free. WRITE TO-DAY. YOU WILL BE SIMPLY DELIGHTED. In addition to the Dinner Set, we give Stoves, Couches, Rockers, Parlor Suites, Bed Room Suites, Jackets, Capes, Skirts, Hats and everything in wearing apparel, in fact you can furnish your home from top to bottom and clothe yourself by selling our Red Cross coffee. YOU DO NOT SPEND A CENT. WE PAY ALL FREIGHT CHARGES. YOU CANNOT BE OUT A SINGLE CENT. WE TAKE ALL RISK.

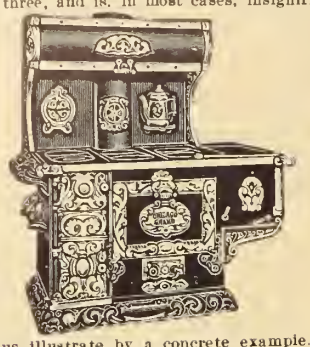
RED CROSS SUPPLY CO.
563 South Main St., ST. LOUIS, MO.

FREE WITH EVERY POUND.

Save in Stove Buying.

Farmers have learned that there are many articles which they have long been buying from local dealers and paying exorbitant prices for, which can be bought from the manufacturers at a great saving. Not only the lighter goods, which can be sent by mail or express, are in this class, but heavier articles such as machinery, regularly shipped by freight, are included. Nowhere is this better illustrated than in the matter of stoves.

It is thought by many that because stoves are heavy they are articles to be bought only at home. But why? It is not on account of freight. The local dealer has his freight to pay. Moreover he usually buys from a jobber or middleman. That means a local dealer's profit, a good round one, and the jobber's profit, both in addition to the freight charge, and when you buy from a local dealer, you must pay all three. The freight, indeed, is by far the smallest item of the three, and is, in most cases, insignificant.



Let us illustrate by a concrete example. We will suppose a reader near Omaha is buying a range from that great Chicago stove concern, the Marvin Smith Company. It is a large, heavy steel range with warming closet, hot water reservoir, and all appointments such as their famous Chicago Queen, and weighs say, 500 lbs. It ships as 3rd class freight. The rate is 45c per hundred, making $2.25 for laying the range down in Omaha or other towns practically 500 miles away from Chicago. What does it amount to? Does any one suppose that it is an explanation of the vast difference in price charged by the Marvin Smith Company and what he would have to pay his local dealer for a range of like character? Let any one make the test for himself: Send and get the catalogue of this company, select his stove or range, ascertain its weight and freight, which he can easily do from the catalogue, and then ask his local dealer what he will sell such a stove for. The experiment is worth trying. It is an object lesson as to exorbitant profits people are unwittingly paying stove dealers.

We mention the Marvin Smith Company because it is one of the country's greatest stove concerns. They are reliable and they do sell stoves at astonishingly low prices. Everything of stove or range or heater kind is in their line, and the advantage shown in the foregoing illustration applies to every stove and range shown in their catalogue. They give a strong guarantee and sell under a most liberal free trial plan. They publish a large, well-illustrated catalogue with full descriptions, illustrations and lowest factory prices of every range or stove, well planned to facilitate buying by mail. The catalogue is mailed free to any one writing for it. With such an opportunity for buying at greatly reduced prices regularly advertised to rural people in our columns, we feel that stove buyers stand in their own light if they do not avail themselves of it.

Just What the Farmers Want.

Of all the animals on the farm, the faithful horses no doubt receive most care and attention, yet how many farmers realize that every load his horses draw can be made fifty per cent lighter by the selection of the proper wagon? The low built, wide tire, steel wheel wagon is the one farm wagon that lightens the horses' burdens and, in fact, is fast supplanting the old time narrow tire wagon. With these wagons the farmer saves both horse flesh and repair bills. They go wherever a horse can travel, haul any kind of a load, over heavy fields, dirt roads, or macadam. No warping, cracking, or dropping of tires. Sun and storm proof, they last a lifetime. There is no more profitable investment on the farm than one of these all steel, low down, wide tire wagons. They are no more expensive than the old style and the repair item does not figure at all. The Empire Manufacturing Company, of Quincy, Illinois, issue a booklet which every farmer should have. It is a veritable encyclopedia of information and everyone interested in these wagons and wheels would do well to write for a copy at once. A half hour with this catalog will do more to impress the reader with the utility of such vehicles than columns of editorial talk. Subscribers can secure a copy by simply addressing a postal to this firm.

Farming in Virginia.

In the great rush for the West the American Farmer has overlooked the opportunities offered by several of the Southern States to the farmer and homeseeker. Recently, however, a considerable interest is being revived in this wonderfully rich section and no state in this southern territory offers better inducements than Virginia, the Grand Old Mother of them all. Good farms, with all the advantages of close proximity to large markets, an equable climate, productive soil, excellent transportation facilities, and in the midst of cultivated and hospitable social environments, can be obtained at wonderfully insignificant prices, frequently as low as five to ten dollars per acre, including improvements.

The Norfolk & Western Railway is carrying on an aggressive campaign in repopulating these old plantations and are sending out a very interesting assortment of literature describing the various sections of the state, with many illustrations showing old plantations, crop scenes, etc. To the farmer who is cultivating $40 to $100 land, Virginia offers an opening that should not be overlooked; and in a little pamplet entitled, "Good Words for Virginia," dozens of Northern and Western farmers testify to the abundant success they have reaped on these old Virginia farms.

In another column the Norfolk and Western Railway Company present their proposition, and all who write Mr. F. H. LaBaume, Agr'l. and Ind'l. Agent of that railroad, will receive literature, maps, etc., that cannot fail to interest them in the wonderful resources of the Old Dominion.

Veneered Tree Protectors, Their Advantages, etc.

Our readers will note an advertisement of the HART PIONEER NURSERIES, of Ft. Scott, Kan., running in this paper, regarding an improved Veneered "Tree Protector."

We have seen a sample of these protectors, and judging from the high class of testimonials that this firm furnishes, they evidently are a good thing, and will do all that they claim of them, such as protecting trees from mice, borers, rabbits, hot winds, sun scald, etc. We notice testimonials from some of the largest orchardists in the country, who are using them, also from leading horticulturists and secretaries of many horticultural societies, advocating the protectors. If any of our readers have trees or shrubs to protect, they will do well to correspond with the above firm, and get their circulars and samplea.

San Jose Scale.

We are in receipt of a book from The American Horticultural Distributing Company, in which are printed copies of letters received by them from some of the largest and best fruit-growers in the U. S., relative to the results which they obtained from the use of their preparation for the destruction of the San Jose Scale known as "Target Brand" Scale Destroyer. It is quite interesting in every respect and shows that their preparation evidently has merits superior to any other on the market, and in fact will produce better results than any preparation yet discovered.

We learn that it is composed of resin and oil and kills by contact almost entirely.

They have just moved into their new and very much enlarged factory and are very much rushed with orders for fall spraying, since it has been proven that the fall is the best time for treatment of this insect.

They are also offering a gasoline sprayer at a very much less figure than the rest of the gasoline machines on the market, and guarantee it to be the simplest and best made.

We feel no hesitancy in recommending the above company to all orchard people in general as being thoroughly reliable in every respect, and that their preparations are all that they claim of them.

Any one owning an orchard infested with the San Jose Scale will do well to communicate with them, since they have a staff in their employ which have been making some very deep researches into the treatment and destruction of this insect.

SERVICES OF A DOCTOR FREE.

Specialist in Rheumatism, Kidney and Bladder Diseases Will Give His Time and Skill Free to the Sick.

Have you got rheumatism, kidney trouble or bladder trouble, or are you ailing without knowing just what is the matter with you? Would you like to know what your trouble is and how to get rid of it? If you go to a local doctor he will charge you from $1 to $5 for the visit, and then a little more to have the prescription filled. You can get all this for nothing, gladly and cheerfully, from a specialist of life-long practice; also a double free test treatment and a free 68-page illustrated medical book. In this way over 50,000 people have been helped free of charge in the last year alone, and the company has spent nearly $10,000 in postage to answer letters and send home treatments and books to sick ones in distant places, all without charging them a single cent. Why not take advantage of that yourself? Write today fully and freely, and especially for the free treatment. Write now for yourself or any sick friend, addressing the Medical Director, Turnock Medical Co., 2823 Bush Temple, Chicago, Ill.

A New Era in Roofing History.

The Standard Paint Company announces the introduction of Ruberoid Red Roofing, a product combining the utility and decorative effect of a permanent colored surface with the superior weather proof and fire resisting qualities that have for the past 14 years made regular Ruberoid the acknowledged standard by which roofing quality is judged.

Ruberoid Red is the only prepared roofing in which the coloring is incorporated into the fabric during the actual process of manufacture, and is entirely novel in construction. Heretofore the nearest approach to color in prepared roofings has been a coat of paint applied either after the material was laid or after the manufacturing processes were ended. Ruberoid Red has been accomplished after five years of practical tests. It is placed on the market with the full assurance of its worthiness to bear the name Ruberoid and will be appreciated for use on residences, handsome modern stables, and fancy structures.

Samples may be obtained free by writing to The Standard Paint Company, 100 William st., New York, mentioning this paper.

Valuable Data About Spraying.

The Humphryes Mfg. Co., Mansfield, Ohio, is preparing a booklet which will undoubtedly be in demand among farmers who grow fruit. This booklet is one which will present the most up-to-date information upon the subject of spraying, giving the different formulas which are used, and the particular purpose for which the respective formulas are recommended. This booklet is being prepared after correspondence with the various experiment stations, so that it will present the best information obtainable. The publishers write that they cannot afford to distribute the booklet gratis, but Fruit-Grower readers who will send 4 cents to pay postage will have their names entered on the list of those who will receive the booklet on "Spraying for Profit." It should be said, in this connection, that the booklet will not be ready until the middle of December, but those who desire a copy should send their names now, for the demand will likely be greater than the supply. Address Humphryes Mfg. Co., Dept. S., Mansfield, Ohio.

To Make Delicious Cider.

A well-built press and a good apple year is the best kind of a combination to assure a fine run of cider. But you can never get the best out of this season's apple crop if your press is out of date or not up to the requirements of the modern machine.

The presses which give the best all around satisfaction and which stand the racket night and day are the ones made by the Boomer & Boschert Press Co., of Syracuse, New York. It is surely an unqualified endorsement of the machinery made by this company when such firms as the H. J. Heinz Company, of Pittsburg, keep seventeen B. & B. presses going night and day throughout the entire season.

The Boomer & Boschert Press Company also make a full line of graters, evaporators, pumps, etc.—all fully explained in their latest catalog. Every manufacturer of apple products should secure a copy of this useful book at once.

Money in Peeps.

Many successful enterprises have sprung from the most humble beginnings for, "Mighty oaks from little acorns grow," is a proverb that fits the poultry business better than any other industry. The raising of chickens can be started in a small way and the flock gradually increased till one has just as many birds as he can handle.

To quickly and successfully accomplish this, the hen nowadays is used only for egg production—an incubator hatches the "peeps." One of the most modern and at the same time most successful chicken hatchers is the incubator known as the Wooden Hen. It is made by George H. Stahl of Quincy, Illinois, the well known maker of incubators and brooders. The catalog which this firm issues is one of the most instructive books on poultry raising which has been issued in recent years. It is quite elaborate, containing many plates in natural colors, including views showing the development of the chick from the egg to the bird. They mail this book free to all inquirers.

George W. Morris, Lyndon, Kan., changes his advertisement in our "Farms for Sale" department in this issue. Mr. Morris has some splendid farm properties listed, and has some excellent bargains to offer. Those who want to buy a farm for investment or for any purpose, in any part of the country, will do well to write Mr. Morris, and see what he has to offer. Read his advertisement in this issue, and tell him what you want. He may have it.

Smith Grubbers and Stump Pullers.

The Fruit-Grower has received the catalogue of the W. Smith Gruhber Co., LaCrosse, Wis. This catalogue describes the various styles of stump pullers manufactured by this company, which claims to be the largest makers of stump pullers in the world. The different styles are illustrated, and also the ways in which they are operated. Different methods of attaching the pullers give different degrees of power, and all this is set forth in the catalogue. Fruit-Grower readers who have stumps to get rid of will do well to send for this catalogue, which is free. Now is the time to consider destroying many stumps which will interfere with cultivation, plauting, etc. Mention The Fruit-Grower when writing for the catalogue.

FORTUNES in FRUIT GROWING

The Land of the Big Red Apple

The Ozark region in Southern Missouri and Northwestern Arkansas is famous for the big red apples raised there. It is equally famous for the profits all kinds of fruit yield the owners of orchards in that beautiful region. Fortunes are being made every year in that ideal country, which combines the three things not often found together—a beautiful country, a delightful climate and a soil that will grow magnificent fruit in abundance.

If you are interested in fruit raising, or would be interested if you knew more about the big profits realized in that region, send for a free copy of a most beautiful book on fruit growing, illustrated in natural colors.

A trip to the Southwest is not expensive, and would prove profitable to you. Round trip tickets will be sold via the Frisco System the first and third Tuesdays of October, November and December at less than one-way rate.

FRISCO SYSTEM

ALEXANDER HILTON, Gen'l Pass'r Agent, Frisco System
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The Best of Everything

Excellent Through Train Service to all points North, West, and Northwest, via The Chicago & North-Western Ry.

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A magnificent electric-lighted train, less than three days Chicago to San Francisco, daily.

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One night Chicago to Denver. Only two nights to Denver from the Atlantic seaboard.

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A luxurious electric-lighted train to the Head-of-the-Lakes, daily.

Through trains Chicago to Cedar Rapids, Des Moines, Mason City, Sioux City, Council Bluffs, Omaha, The Black Hills, Denver, Salt Lake, San Francisco, Los Angeles, Portland, St. Paul, Minneapolis, Duluth, Superior, Ashland, and the Iron and Copper Country.

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N.-W. 682

The Best of Colorado

The Scenic Features, the Mining Centers, the Commercial Cities, the Manufactories, the Smelting Interests, the Choicest Agricultural Lands, the Health and Pleasure Places, are all along or reached most conveniently from the

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Many of the Best Parts of the State can be reached by no other railway. Are you interested in Colorado? Send three cents in stamps for our beautiful illustrated book, "Picturesque Colorado" to

T. E. FISHER, Gen'l Pass. Agt.
DENVER, COLORADO

Change Cars at Kansas City

Take a new, bright and attractive train from Union Station, Kansas City, to Union Station, Chicago. The train is *The Southwest Limited* of the

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Leave Union Station, Kansas City, 5:55 p. m.; Grand Avenue, 6:07 p. m., arrive Union Station, Chicago, 8:20 a. m. A postal card will bring you complete information about rates, routes and train service.

G. L. COBB, Southwestern Passenger Agent
907 Main Street, KANSAS CITY, MO.

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PARADISE FOR THE HOMESEEKER TO KANSAS

Best Agricultural and Stock Raising Region. Soil deep, rich and productive in the growing of Wheat, Corn and Alfalfa. Purchase price from $5 to $30 per acre, which equals the returns of the $50 to $150 per acre lands of other States.

CLIMATE IDEAL, AMPLE RAINFALL.

Buy quick and secure the benefit of an excellent investment. Write for further information, illustrated literature and

LOW SETTLERS' RATES.

H. C. TOWNSEND, General Passenger and Ticket Agent, ST. LOUIS, MO

Cheap Lands in Texas

ADJOINING OKLAHOMA

Great Sale Now in Progress

The Houston & Texas Central Railway Company has decided to sell its land grant in Northwest Texas. To effect a quick sale and avoid the expense of maintaining sales agencies for a term of years, the lands have been listed at very low prices.

They are remote from the Houston & Texas Central road, but adjoin the Rock Island main line running diagonally across Oklahoma and Texas. No such opportunity has been presented for years. A large part of the lands are located in

Hansford County, reached from Guyman, on the Rock Island. Sherman County, reached from Stratford, on the Rock Island. Dallam and Hartley Counties, reached from Dalhart, on the Rock Island.

Portions of the tract are well watered and nearly all of it is susceptible of cultivation. Transportation facilities are excellent and big markets within easy reach. Direct lines to Kansas City, Denver, Fort Worth and Dallas.

Sale will be made in parcels of 160 acres up to four sections or 2,560 acres to each purchaser; prices from $1.50 to $4.00 per acre. Title was acquired by the railroads direct from the State of Texas. It is therefore perfect. Taxes are low, terms are liberal and warranty deeds are given in all cases.

If you are interested, write quick for leaflet fully describing the location of lands, character of soil and climate, and terms of purchase.

Rock Island System

JOHN SEBASTIAN, P. T. M. Rock Island System,
DRAWER A, CHICAGO.

Farm and Stock

Published Monthly in the Interests of Corn Breeding, Cultivation & Live Stock

ST·JOSEPH·MO

A NEW PAPER

We present herewith the cover page of a new paper which will be started in January. It will be the same size as The Fruit-Grower, and will be printed in the same general style. It will be to the various associations of breeders what The Fruit-Grower is to the different horticultural societies, and all meetings will be reported fully. **CORN BREEDING** will be one of the main features.

Farm and Stock will be published monthly—daily papers give farmers the market quotations, and current news, and Farm and Stock will devote its space to keeping its readers posted concerning developments in the agricultural world.

Subscription price is $1.00 a year, but it will be mailed a year on trial for **10 Cents** and the names of ten farmers who grow corn and live stock. This special offer holds good only until Jan. 1, 1906. The Fruit-Grower Co. will have general oversight over Farm and Stock and the same policies which have made such a success of The Fruit-Grower, will be adopted for the new publication. For further information address

FARM AND STOCK COMPANY, SAINT JOSEPH, MISSOURI

Printing for Nurserymen

We have special facilities for printing catalogues, price lists and stationery of all kinds for nurserymen and ask that you give us an opportunity to send you prices and samples. Our special designs for cover pages are very attractive and can be printed in one, two or three colors. Our stock of cuts is large and we will furnish them free of charge for use in your catolog if we print it. Write us for information and prices. Address Printing Department,

THE FRUIT-GROWER CO., ST. JOSEPH, MO.

Homeseekers Excursions

If you want to visit Oklahoma, New Mexico, Arizona, Texas or any of the other sections of the Southwest in which fruit growing is becoming such an important industry, investigate the low rate made by the

Santa Fe Route

ON FIRST AND THIRD TUESDAYS OF EACH MONTH.

The Santa Fe reaches every part of the Southwest, and with its frequent and well equipped trains and splendid roadbed is best prepared to serve the public. For circulars or any desired information, address

W. J. BLACK, G. P. A., Topeka, Kan.
GEORGE BUTTERLY, C. P. & T. A., St. Joseph, Mo.

Grand Island Route

Short Line Between St. Joseph *and* Kansas City

DOUBLE DAILY SERVICE, with new 80-foot Acetylene Gas Lighted Pullman Chair Cars (seats free) on night trains and Pullman High-back Seat Coaches on day trains, between Kansas City and St. Joseph, Mo.; Hiawatha, Seneca, Marysville, Kan.; Fairbury, Fairfield, Hastings and Grand Island, Neb.

Connections made at Kansas City for all points East, South and West.

At Grand Island direct connections are made with Union Pacific fast trains for California and the Pacific Northwest.

S. M. ADSIT,
General Pass. Agent, St. Joseph, Mo.

UNION PACIFIC — THE OVERLAND ROUTE

SUGAR-BEET INDUSTRY

IN

NEBRASKA

AND

COLORADO

is attracting the attention of capitalists and farmers along the

UNION PACIFIC

From beets averaging 15 to 25 tons to the acre, the factory can extract 14 per cent. granulated sugar, or 280 pounds to the ton of beets.

For full information about the

Famous Platte Valley,

Its entire length traversed by the Union Pacific.

E. L. LOMAX, G. P. & T. A.
Omaha, Nebr.

STARK BRO'S NURSERIES & ORCHARDS CO

CAPITAL STOCK $1,000,000—ALL PAID UP

General Offices, Nurseries and Packing Houses

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BRANCHES

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Oldest Nurseries
In The West
Established 1825

Largest Nurseries
In The World
4675 Acres

WE PAY FREIGHT

on $5 orders (one-fourth cash to be sent with order) at prices quoted in our Wholesale Price List, to any R. R. Station in

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We make no charge for Boxing and Packing. We Do NOT pay freight on orders amounting to less than specified, nor unless one-fourth cash is received with order, nor on shipments by express.

GRAPE VINES—In order to carry out our policy of furnishing only the BEST, we maintain a nursery at Portland, N. Y., in the heart of the famous Fredonia—Chautauqua Grape Belt, which produces the finest vines grown in the U. S. We are headquarters for all the leading Commercial sorts.

STARK TREES—Field of more than ONE MILLION Apple in Stark Fayetteville Ark. Nurseries. One of the FINEST blocks of 2-yr. apple ever grown. Average height over 7 ft., wood and foliage perfect, eighty per cent XX grade

STARK TREES

Succeed Where Others Fail—

BECAUSE, three generations of Stark Nurserymen have made the production of the BEST trees their life study, their life work;

BECAUSE, Stark Trees are produced under an exact science from the time the seed are selected until the tree is delivered carefully packed for transportation;

BECAUSE, in selecting buds and scions only healthy, vigorous, highly prolific trees of the best strains are used as parentage;

BECAUSE, a tree grown with all conditions favorable has high vitality and will withstand climatic rigors and unfavorable soil even better than the stunted weakling propagated in just such uncongenial surroundings;

BECAUSE, having eight nurseries in five states, each sort is grown under the most favorable conditions of soil and climate, resulting in hardy, healthy, thrifty trees that LIVE and BEAR;

BECAUSE, we are constantly on the watch, not only for valuable new varieties of fruits, but for the best strains as they are developed. As soon as an improved strain is found it is propagated and the inferior discarded;

BECAUSE, only THE BEST roots, scions, soil, location, labor, cultivation, pruning, digging, storing and packing enter into the production and handling of Stark Trees. We ask for your orders

BECAUSE Stark Trees have given satisfaction for more than 80 years, with the result that Stark Nurseries have constantly grown (the only true test of merit) until they are now the LARGEST IN THE WORLD. We are not "here today and gone tomorrow."

APPLE SEEDLINGS—We offer for the coming season's trade several million that, owing to favorable season, are EXTRA FINE. They are Iowa grown from Vermont seed and our own experience has demonstrated that they are superior to all others we have used. Also a fine lot of Catalpa, Black Locust, Mahaleb Cherry, French and Japan Pear Sdlgs., Plum Stocks, etc., Vermont Apple Seed.

WARNING—We are sole owners of the names Black Ben, Champion, Delicious, King David and other leading commercial apples, Gold plum, Stark-Star grape, etc., all of which are our Trade-Marks, duly registered in the U. S. Patent Office under the new law approved Feb. 20, 1905. Planters are warned against imposition by infringers offering trees under these names or trees claimed to be "just the same." We offer the GENUINE at prices that are certainly as low as GOOD trees can be produced and sold. Wise buyers will take no chances.

STARK FRUIT BOOK "WORLD'S FAIR FRUITS" shows in natural colors and accurately describes 216 varieties of fruit. Send 50 cts. and we will send the book post-paid and a REBATE TICKET permitting its return within 60 days when the 50 cts. will be refunded. Or the Rebate Ticket is good for $1 part payment on a $10 order for nursery stock.

Send for Wholesale Price List, Order Sheet, Descriptive Circulars, Half-tone Views, etc.—FREE. WE PAY CASH weekly and want MORE Home and Traveling Salesmen. Address, STARK BRO'S NURSERIES & ORCHARDS CO., Desk 9, Louisiana, Mo.

Volume Sixteen DECEMBER, 1905 Number Twelve

THE WESTERN FRUIT-GROWER

ST. JOSEPH, MISSOURI

Christmas Number

Copyright, 1905, by The Fruit-Grower Co., St. Joseph, Mo.

Business Established 1872 :: Capital Invested $60,000

The New Haven Nurseries

OUR NEW DESCRIPTIVE WHOLESALE AND RETAIL PRICE LIST IS NOW READY

OVER 400 ACRES DEVOTED TO THE BUSINESS

OVER 400 ACRES DEVOTED TO THE BUSINESS

"Nursery Stock," Two and Three Years Old.

Over 2,000,000 trees, by actual count, all budded or grafted, are now growing in our nurseries.

We want you to get our prices on Nursery Stock before you place your order. Prices cannot be published in this paper, but send us your name and address, and if convenient state about what your needs will be, and prices will be quoted low enough, considering quality of goods, to secure your trade. **We pay freight and guarantee satisfaction.** No nursery establishment in the West is better equipped for the careful rapid handling of mail orders.

Our **Apple, Pear, Peach, Plum, Cherry and other Nursery Stock** is good enough for some of the largest commercial orchardists, who have been buying of us for years. We please them, we can please you.

Write us and give us the opportunity to "show you." Write today for Catalogue and Price List.

The New Haven Nurseries

NEW HAVEN, MISSOURI

Fruit Packages

The Pierce-Williams Company

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MANUFACTURE

All Kinds of Fruit Packages Boxes, Crates & Veneers

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Our facilities for filling orders for associations are unsurpassed. Early orders filled promptly. Our Poplar Berry Boxes please our customers and are better than boxes made from other materials.

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"PRACTICAL HOUSE DECORATION"

A new 150-page book written by experienced decorators and profusely illustrated. Is a gold mine of practical and artistic suggestions for the decoration and furnishing of the Home. Gives 12 complete schemes for decorating the entire house. Price, $1.00. With this book and "Keith's" the artistic decoration and building of your home is assured. "Practical House Decoration" and a Year's Subscription to "Keith's," $2.00.

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No foreign subscriptions accepted.
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Max L. Keith, Pub. 815 Lumber Exchange MINNEAPOLIS, MINNESOTA

Brother Jonathan Series of Fruit Books

This is the most complete series of books ever issued on the subjects covered, and every reader of The Fruit-Grower should have the full set of ten. The books are handsomely illustrated and have been prepared by experts on the subjects to which they are devoted. We quote below the titles only on account of lack of space, but on request will be glad to send circular giving complete description.

No. 1—"PROPAGATING TREES AND PLANTS."
No. 2—"A TREATISE ON SPRAYING."
No. 3—"HOW TO GROW STRAWBERRIES."
No. 4—"THE HOME GARDEN."
No. 5—"PACKING AND MARKETING FRUITS."
No. 6—"A BOOK ABOUT BUSH FRUITS."
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No. 8—"HINTS ON PRUNING."
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These books will be mailed prepaid to any address on receipt of price, 25c each or five for one dollar. To any paid in advance subscriber we will send the first five books on approval. If you like them, you are to send us a dollar, and if they do not suit you they may be returned. We have sent out a great many on this basis and the books have been so satisfactory that not one set has been returned.

Trade Mark—"Brother Jonathan"

UNTIL JANUARY 1, '06

we will send a book free to any reader who sends one new subscriber with remittance of fifty cts.

These booklets are copyrighted and published exclusively by us. For further particulars, address

The Fruit-Grower Co., St. Joseph, Mo.

FRUIT FARMS AND FRUIT LAND FOR SALE

This department is for the benefit of Fruit-Grower readers who wish to buy, sell or lease farm lands. All advertisements of this nature will be inserted for a charge of 2 cents per word, each initial and number to counts as a word. No display type will be used in ads which are accepted at this reduced rate, and all charges must be paid in advance. The rate of 2 cents per word is for each insertion. Count the words when sending your advertisement, and the cost can be easily ascertained.
THE FRUIT-GROWER CO., St. Joseph, Mo.

FOR SALE—Farm of 320 acres, one and a half miles from Winchester, Knn.; either quarter section will be sold separate if desired. On the southwest quarter is a house of 8 rooms, a cottage; a barn 24x40, corn crib 10x40, driveway between, all under shingle roof; hog pens, smoke house, five-ton scale, two wells, cistern, corn crib; 500 Missouri Pippin, 250 Gano apple trees, set out nine years ago; 550 Jonathan, set out two years ago; 12 acres in strawberries, blackberries, red and black raspberries; 800 peach trees, set out last spring; two packing sheds. On the southeast quarter are 6,000 Ben Davis, 1,800 Gano apple trees, set out ten years ago; 500 Gano, set out two years ago. Living water the year round on every 40 acres if wanted. Timber on the two quarters. For particulars write Wm. Booth, Winchester, Jefferson County,

FOR SALE—40-acre fruit farm, 2 miles from Olney, Ill.; 25 acres in good bearing apple trees, besides other fruit; near school and church; good 6-room house and cellar; new barn and outbuildings, all in first-class condition; plenty of good water. Price, $2,650. W. A. WHEELER, Lock Box 299, Redlands, Calif.

We are the largest dealers in real estate in Grand Valley, the famous peach, apple and pear growing section of Western Colorado. Orchards here 8 years old net the growers from $500 to $700 per acre. The climate is the best in the world and is a specific for lung and throat troubles and asthma. Write us for information. The Home Land & Investment Co., 357 Main St., Grand Junction, Colo.

FARMS FOR SALE—22 acre orchard and fruit farm. Price, $150 per acre. 1 mile to Fairfield, Jefferson County, Iowa. 29 acre poultry farm and garden. $50 per acre; 4 miles to Fairfield, pop. over 5,000. 80 acres, 1 mile to Lockridge, Iowa; 50 acres in corn, oats and meadow; balance blue grass, timber, pasture. Price, $40.00 per acre. Each farm has buildings to suit the price given. Don't write, but come. Address owner—E. R. SMITH, Atty., Fairfield, Iowa.

Big Bargain IN AN ARKANSAS **Fruit Farm**
Farm Lands a Specialty. Write for Prices. For description and price, address
Forrester-Duncan Land Co., Waldron, Ark.

A FARM OF YOUR OWN
In the Pan-Handle of Texas or in "Sunny Southern Kansas." Good level land, black soil. Wheat, 30 bu. Oats, 60 bu. Barley, 50 bu. Corn, 40 bu. all for $5.00 to $8.00 per acre. Good water, healthy climate. Low rates to homeseekers. T. CARRABINE & CO., Opposite Postoffice, 301 Century Bldg., Kansas City, Mo.

RooksCountyLand
Where Wheat, Corn and Alfalfa grow to perfection. 37,500 acres fine farm land for sale. For list and county map, address
C. H. DEWEY, Stockton, Kan.
(Railroad fare refunded if you buy of me.)

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80 Acres of Apple Orchard
right at shipping station on Santa Fe, within driving distance on rock road to Kansas City market. Best winter varieties. Trees healthy and in full bearing. Splendid trees. Fine land on Missouri River uplands. Sell at a sacrifice. No trade. A fortune is here.
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306 Fidelity Trust Building, KANSAS CITY, MO.

A GEORGIAN FRUIT FARM
of 60 acres, on main line Seaboard Air Line Railway, two miles from town of 5,000 people. Fifty-five acres in cultivation; 2,000 Elberta peach trees in thriving condition. Small house, barn, stables, etc. Price, $2,000.00. For further information and list of other properties available and specially adapted to fruit-growing, address J. W. WHITE, G. I. A. Seaboard Air Line Railway, Portsmouth, Va.; or H. B. BIGHAM, A. G. I. A., Atlanta, Georgia.

Farms That Pay
and pay big are found in Eastern Kansas. We have just a few of them (improved) to sell at real hargain prices if taken quickly. You will never buy cheaper. Good farms in our section of the state are bound to increase in value 50 to 100 per cent. Wheat this year 40 to 50 bushels to the acre. Corn that can't be beat. Delightful climate. No hard winters. Money to loan if you need help. Interesting booklet of facts about Kansas sent free. Write for it—do it now.
SLAUGHTER, VAN PETTEN & ROBINSON, Burlingame, Kansas.

TEXAS LAND
In Panhandle, One Crop Pays for Farm. Fine soil, mild winters, healthful climate; free stone water; fine stock and grain country; wheat, 30 bu.; corn, 50 bu. per acre; alfalfa four crops. Ranches, $2 to $5 per acre. Improved farms, $5 to $15 per acre. Easy terms. Half fare Dec. 5th and 19th.
WILE & WILKINSON,
1209 Grand Ave., Kansas City, Mo.

Opportunities
On the line of the Chicago Great Western Railway in Iowa, Missouri, Illinois and Minnesota for Business Men, Professional Men and Manufacturers. Openings for nearly all lines in live towns on a progressive railway, affording a "square deal" for all. Maps, Maple Leaflets, Town Talk and full information given on request to Industrial Department, C. G. W. Railway, St. Paul, Minn., or E. B. Magill, Mgr. Townsite Department, Omaha, Neb.

COTTON BELT ROUTE

Good Time To Go Southwest

The Cotton Belt Route offers extremely low rates Southwest—less than one-way fare for the round trip—on
November 7 and 21
December 5 and 19
Southeast Missouri, Arkansas, Louisiana, Texas. A country that offers many opportunities to the homeseeker and investor—cheap land, $5 per acre up; grows a variety of crops—corn, cotton, small grains, grasses, fruits and vegetables. Fine climate, mild, open winters, good water. A chance to get a home of your own.
Write for map, descriptive literature and rates to any point.
E. W. LaBEAUME, G. P. & T. A.,
Cotton Belt Route, ST. LOUIS, MO.

CASH
For your farm, ranch, home or business, no matter what it is worth or where located. If you want your property sold quickly, send us description and price; then we will send you **FREE OUR SUCCESSFUL PLAN** telling you how and why we can quickly sell your property.

IF YOU WANT TO BUY
a business or property of any kind, anywhere, tell us what you want and where you want it. We can fill your requirements, do it promptly, and save you time and money.
N. B. JOHNSON & CO.
520 Bank Commerce Bldg. Kansas City, Mo.

VIRGINIA FARMS
$8 per Acre and up
with improvements. Good productive soil, abundant water supply and best climate on earth. Near railroad and good markets with best church, school and social advantages. For list of farms, excursion rates and our beautiful pamphlet showing what others have accomplished, write to-day to F. H. LA BAUME, Agrl. and Indl. Agt., Norfolk & Western Ry., Box 70, Roanoke, Va.
N&W Ry. NORFOLK & WESTERN Virginia and Ohio Line

Farmers Get Rich in SOUTH TEXAS

A prominent citizen of San Antonio, Texas, in an address before the Fruit-Growers' Association, estimated the average value of South Texas truck crops at $251.00 per acre.
Compare the following yields and amounts realized per acre with what you are raising on your land:

140 bushels of CORN per acre
8 cuttings of ALFALFA per year
2 bales of COTTON per acre.

ONIONS have paid .....$760 per acre
POTATOES have paid .....$525 per acre
CABBAGES have paid .....$225 per acre
WATERMELONS have paid ..$200 per acre

Remember that we grow crops during the winter months, which sell at fancy prices. WE ARE MAKING MONEY WHILE YOU ARE SPENDING IT.

GET AWAY FROM BLIZZARDS.

Don't get this country confused with WEST Texas or EAST Texas or NORTH Texas. There is only one SOUTH TEXAS.
An ideal climate. Unexcelled for health. Near railroads. Good schools, churches. Fine farms at $10 to $20 per acre. Write for list.
HILAND P. LOOKWOOD, Col. Agt. S. A. & A. P. Ry.
Southern Office—502½ E. Houston St. San Antonio, Texas
Northern Office—141 Bryant Bldg., Kansas City, Mo.

The World's Favored Spots *Are Few*

Remember the Egyptian adage: "An acre on the Nile is worth all of Sahara."

THEY GROW BEST ORANGES and other citrus fruits in Florida, in the County of Manatee, which is below the frost line.
APPLES in New York, Virginia and select portions of Georgia.
GRAPES in Malaga, California, and all over "the Sunny South."
PEACHES AND APRICOTS succeed best in the

Great Elberta Peach Belt of Georgia.

Are you a fruit-grower, a farmer, a truck raiser? Then why oppose the strange ways of nature. Why waste your labor and time in unfavored spots.

Why not go where nature helps you, the elements all favor you and work with you, and where the rewards are commensurate with your toil?

The greatest energy, the hardest work, and the highest skill will not prevail against adverse climate and unsuitable soil.

"As Ye Sow, So Shall Ye Reap," therefore Plant in the Right Place.

Follow the example of experts, and go where conditions for success are ideal. J. H. Hale, of Connecticut, the owner of the largest peach orchard in the South, says, "Georgia has a magnificent soil, easy to work, and produces peaches which look better and taste better than those of California." And the Boston Herald agreed with Mr. Hale. The Chicago Record says, "The fanciest and most delicious peach which comes to market is the Georgia Elberta—richer than a bowl of fresh cream." The New York Tribune says, "They are larger than the peaches from the Delaware Peninsula and New Jersey, and by universal consent, much more delicious." New York World in an editorial, "A Nation's Debt to Georgia," said, "The Northern States have long had a sense of obligation to Georgia for its devotion to the cultivation of watermelons and canteloupes. This debt is now increased by the success of the Georgia peach, which has been sufficient to drive out of the Eastern markets the beautiful but tasteless peach of California. The fruit men agree in pronouncing the Georgia peach by all means the best in point of size, flavor and firmness. They are juicy, good to look at and delicious."

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One of the greatest trunk lines in the South has recently extended its main line through the very heart of the great Elberta peach belt of Georgia. This affords you an opportunity to buy lands at prices ranging from $5.00 to $25.00 per acre, depending upon location, improvements, and how long it takes you to get there. From a ten-acre peach orchard in Georgia, five thousand dollars net profit has been realized for three successive years. In the variety of her fruit and agricultural products Georgia is unsurpassed by any other State in the Union. Upon the same farm in Georgia can be raised cotton, corn, tobacco, wheat, oats, barley, hops, rye, turnips, Irish and sweet potatoes, grasses, clover, peaches, pears, apples, plums, apricots, cherries, quinces, grapes, every variety of berry, canteloupes, watermelons, and vegetables of every known species. Out-of-door work 12 months in the year.
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IRRIGON has not thus far produced enough to flood the markets. How could she do that practically her first year, or at best, her second? But she has produced enough this year to *prove that she can get early potatoes on the market two weeks ahead of any place in the Northwest.* She can have

IRRIGON OREGON

her cherries marketed ahead of all other points, and this year her experimental patches of strawberries were 10 days earlier than those of any other point north of California. And watermelons! The carload recently shipped to Spokane were the finest sold in that market this season, and "Irrigon watermelons 10 days ahead and 50 per cent better than all others" will be our slogan next year.

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The Oregon Land & Water Co.
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IN ALL STYLES

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NO skinned fruit; no nailing; no mildew; no warping; no splitting; no waste; no loss. A fruit preserver, folded in an instant. A clean, glossy, substantial package, aiding in the sale of fruits.

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Poor soap is soap that is made of cheap materials, which (principally because they are cheap) can not be properly "combined."

The thing to do is to use Ivory Soap. Made of pure vegetable oils, it keeps the pores of the skin free and enables them to do the work Nature intends them to do—throw off the impurities of the body.

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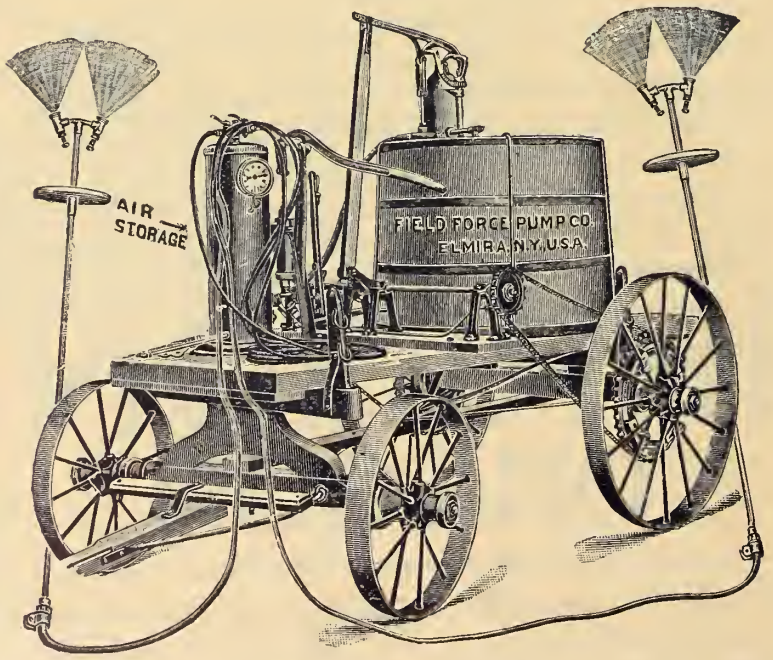

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Neatness and Strength Combined

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They are by far the most attractive fruit shipping package on the market.

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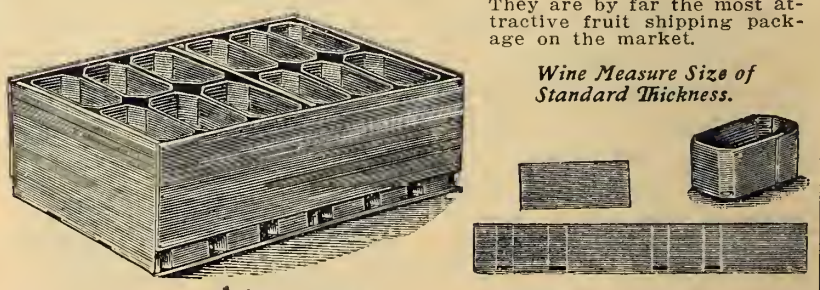

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This booklet will be of great interest to the Fruit-Grower, Nursery-man and Gardner who is interested at all in producing the best crops, which is only making more money. The United States Government maintains farms in every State and Territory, called Experiment Stations, where the best methods of growing fruits and vegetables are obtained by actual experiment. We have incorporated the systems, formulas and experience of these Experiment Stations in our booklet, which will tell you how to make more money through Judicious Spraying. 4 cts. in stamps.

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The Western Fruit-Grower

An Illustrated Monthly Magazine For Progressive American Farmers.

Volume Sixteen ST. JOSEPH, MO., DECEMBER, 1905. Number Twelve

A Fruit-Grower Away from Home

All the past summer I had in contemplation a few weeks' vacation in the fall season where fruits are abundant and where fruit men are prosperous; also where I could see the most of the country for the least money. So I decided that a trip to San Diego via the Lewis and Clark Exposition, Southern Oregon, Sacramento, San Francisco and Los Angeles would give me satisfactory views of fruit on exhibition and fruits on vines and trees, as I will show you further. Then to feast the desire of the eye for sight-seeing of deserts, mountains and canyons, I returned via Senator Clark's new cut-off to Salt Lake City; thence over the Denver & Rio Grande via Colorado Springs to Denver; thence home.

Leaving Lawrence, Kan., on Sept. 12, we had a delightful trip to Portland of only three days and nights, through parts of Wyoming, Idaho and across northeastern Oregon to Umatilla; thence down the Columbia River.

We spent three days at the fair, mostly among the fruits and fruit men. Our first round was a sort of a general observation made in the exhibits of Washington, Oregon and Idaho. It was soon found that Oregon and Washington had the most attractive exhibits of fruit. There were no common specimens of any variety of fruit or vegetable. All were mammoth in size. The famous Wolf River apple was the leader in size, twenty-three apples filling a bushel basket. I failed to get the name of the producer, but they were an Oregonian product.

In pears a Washington man had the largest Bartletts that were ever exhibited in any land or country. They are, as all pear men know, a bell-shaped pear. Five pears measured from six and one-half to seven inches in length and twelve inches in circumference. They were grown in Douglas County by Stephen Kunkle. This county also had apples of great size, several sorts that are grown in the East and in Kansas, but so different in looks that I could hardly recognize them.

Linn County, Oregon, had the most peaches on exhibition while I was at the Fair, but not the very largest peach. Ashland, Jackson County, had on exhibition the largest peaches, one of which weighed twenty-six ounces. Jackson County had a large collection of all kinds of fruits, pears and apples in great variety and great size. The counties if Linn, Yamhill, Marion, Jackson and Polk, also Union and Umatilla, were pretty evenly matched in their exhibition of fruits, while some excelled others in the great size of potatoes, onions, melons, squashes, etc. A fine new variety of pear was shown by W. E. Brayton of Lincoln County, Washington. It is a cross of the Bartlett and Winter Nelis. Mr. Brayton called it the Nellie Bartlett. The quality of the pear is the equal of the Bartlett; not so large, but larger than the Winter Nellies, and in form more like the Bartlett.

Washington apples were hardly equal in size to those of Oregon, but pears were larger. It is our opinion that Washington soil will become more famous for pear growing than New York in the near future. Marion County, in addition to the great interest taken in her fruit exhibition, is the hop center of Oregon and is the strawberry center of the Willamette Valley; also the best Italian prunes are grown there. Then Marion County fruit men claim to have the largest pear orchard on the coast. Umatilla County exhibited Early Rose potatoes weighing two and a quarter pounds and onions weighing two and one-half pounds, and many dozen peaches weighing more than a pound each. Several other counties of Oregon and Washington put up fine shows of fruit, but our time limit was too short to see all of the great display.

Idaho also had a fine display of grapes, pears, apples and prunes. In the Idaho building I saw the original introducer of the famous Idaho pear that was so much advertised several years ago. I had a taste of the genuine Idaho pear. It was not a Sheldon, as some nursery men claimed it was. I saw the pears side by side in their exhibition.

Taken as a whole, the exhibit of fruits put up at the Lewis and Clark Exposition, in my estimation, has never been excelled. In fact, this writer never expects to see another that will equal it. Furthermore, will say that the fruit men of Oregon, Washington and Idaho put up the largest specimens of apples, peaches, pears, plums and prunes that were ever placed before the eyes of man in any land or country. They put up large fruits at St. Louis, but not so perfect in form or in size as at Portland.

A very interesting feature of this exposition was Homer Davenport's collection of pheasants and other rare birds from all parts of the civilized and uncivilized world. There were nineteen varieties of pheasants in pairs, male and female, of all colors and shades that one can imagine. To follow the above beautiful birds, we took in eighteen varieties of geese, not so handsome, but there were many varieties in color of feathers. After the goose show there were five different colored peafowls. The common peafowl of India or black-winged peafowl of Japan; the green or wild Java peafowl; the white peafowl and Pyeta peafowl of East India. In addition to the above were a great collection of rare small birds, with several kinds of guineas, ducks, etc. After wife and I and many others had gone through this best of any sideshow of the kind ever seen by us, Mr. Davenport said that no such exhibit of rare pheasants, peafowls and geese had ever been made by one person in the world, and that it exceeded that of any zoological garden in the world by more than double.

Our old time Kansas friend, H. E. Van Deman, who had been in the employ of the exposition, treated your scribe royally to the best there was in the fruit line, to eat and test their qualities, enabling us to compare our mid-continent fruits with those of Oregon and Washington. As to the testing qualities of fruit in general, I think that the fruits grown in the Willamette Valley inside the humid atmosphere or rain belt of Oregon, are more palatable than were the fruits grown under irrigation, but the irrigated fruits were larger.

Southern Oregon as a Fruit Country.

After four days' observation in the fair and in and out of the beautiful city of Portland, we proceeded on our journey to Ashland, Jackson County, a few miles from the line of northern California. Here we tarried two days and nights with an old Illinois friend whom we had known over forty years. Then, having seen that the twenty-six-ounce peach in the exposition was grown at this place, it occurred to me that a short stay would be profitable. Our Illinois friend, Albert Johnson, had been several years seeking a place for health and found it here; also a country where he is now realizing handsome profits in growing peaches, cherries, Loganberries, pears, strawberries and blackberries. Mr. Johnson thought that his most profitable fruit was the strawberry, from the fact of its long season of six months fruiting, while prices received were from eight to fifteen cents per box. His next best paying fruit was the Loganberry. His average of this fruit was from twelve to sixteen quarts per bush of five to seven canes, six feet long, grown like grapevines and tied to wire trellis of four wires. I measured a few canes that were sixteen feet long, but these long canes were to be cut back in the winter season to proper length for profitable fruit bearing. On Brother Johnson's fruit ranch were three varieties of blackberries. His most profitable sort being the Himalaya, a very late sort, an Asiatic variety, probably found on the Himalaya mountains. The canes of this sort, like those of the Loganberry, measured sixteen feet and upwards, and, like the Logan, are cut back and grown on wire trellis. Mr. Johnson's most profitable strawberry was a sort that was sent out from the East a few years ago to an enthusiastic Bryan man. Having lost the label on it and its being very productive he renamed it 16 to 1. Its picking season begins early in May and continues till December, while in sales of berries the yield runs from $800 to $1,000 per acre.

Here at Aashland the peach is always at its best, when the grower has a fair supply of water, in the months of July and August. There is no cold weather that will injure orchard fruits in the least, while the berry fruits are not endangered by spring frosts. Here we saw Seckel pears that were twice the size of those I grow and equal in flavor to Seckels grown in Kansas or Missouri. This Jackson county is one of the banner apple counties of the state. One thing I observed here was the tender age at which all irrigated trees begin to bear fruit. The alert Pacific state fruit man, when outside of the humid belt, never allows his berry vines or trees to suffer for water where it is available. Apples grown in the vicinity of Ashland comprise all the popular varieties. This region is the true home of the Newtown Pippin. London has become the most profitable market for their Newtown Pippin, or as they are called in London, "Albemarle Pippins." I was much pleased with this place, and I could have enjoyed a month among the fruits. I like the beautiful mountain environment and the all day sunshine. Mrs. Smith shares this feeling with me. If we should ever visit Oregon again we will abide at least a month in this lovely mountain city. The Johnson home is the only place that I found your Western Fruit-Grower. If I had had a copy of it with me I could doubtless had quite a formidable list of subscribers.

After two days spent with my old friend, we proceeded to Sacramento, California, where we laid by seven hours, which were spent in taking in the capitol, with its beautiful surroundings, including all the shrubbery, flowering plants and trees apparently gathered from all parts of the world. Have seen many state capitol grounds in the Central West, from Minnesota to the Gulf of Mexico, but none so complete in all that goes to make a place attractive as seen about the caiptol building of the state of California.

Now, we have overlooked our Mount Shasta notes. So will stop a moment to tell the Fruit-Grower people that if any on them ever pass that way to try to pass Mount Shasta about sunset. It was so with us. Our train was in the valley below, not far from the foot of the mountain where it was growing a little dusky, yet we could see the sun shining on snow-capped Shasta, and finally the setting of the sun. To me it was a grand sight and beyond my power to describe. A stop of one day and two nights in San Francisco is all the time I could give to this city, but if any of Uncle Sam's great battleships had been in port a day longer would have been used in seeing the wonders of a great sea-going Spanish armada smasher. It occurred to us that a visit to the Golden Gate park would be the most appropriate place to spend the day. Here nature and art are so closely united that no visitor, however dull he or she may be, will fail to be delighted with the vistas and the many beautiful drives and footpaths.

From San Francisco to Los Angeles.

From San Francisco our tickets called for the Coast Route over the Southern Pacific to Los Angeles.

A hundred miles or more on each side of the railway and the wagon road south of Frisco, we saw many beautiful fruit gardens and cottage homes. Wagon ways and railroad were bordered with pepper trees and palms, and some blooming plants. Tanks of water and sprinkling wagons were used to keep the dust down. In a few places oil had been used to make roads compact and firm.

While this is called the coast line, only about 70 of the 481 miles to Los Angeles are in sight of the ocean. From Los Angeles we went direct to San Diego, but later you will notice what we think about the great berry patches near Los Angeles.

Ostrich Farming.

After two days' rest the mid-continent fruit man was ready to take in the city and nearby fruit farms. In company with C. B. Allen, my son-in-law, and my daughter, we visited the San Diego ostrich farm. Here poultry farming is done on a very large

Does Your Subscription Expire in 1906?

Notice the date tag on wrapper in which this paper is mailed and if your time is out in 1906, send a remittance of from 50 cents to $2.00 and we will advance you from one to four years accordingly. If you send $2.00 we will mail free, one of the Brother Jonathan books advertised on second cover page.

AFTER JANUARY 1st, 1906 PRICE WILL BE $1 A YEAR

It will be a good investment for you if you pay four years ahead now.' No subscriptions will be entered at the 50c rate after January 1.

All subscribers whose time expired in 1905 have received NOTICE BY LETTER, but those who are paid ahead into 1906 or further will NOT RECEIVE ANY FURTHER NOTICE.

Ask your neighbors to subscribe for The Fruit-Grower. During 1906 we will offer liberal CASH commission to all who send in new names, and IN ADDITION we are going to offer SEVERAL HUNDRED DOLLARS in prizes to those who send in the largest lists.

Write us for particulars.

THE FRUIT-GROWER CO., ST. JOSEPH, MO.

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A great many dealers in the West are complaining because of poor fruit crop this past season. One contributing cause in a great many cases, has been the lack of spraying. There is no doubt that a good fruit tree sprayer, properly used, this past season, would have paid for itself.

Our line of sprayers is complete. We have general Western agency for the Field Force Pump Company's line of sprayers:

The "Little Gem"
for a few trees.

The "Garfield Knapsack"
for special spraying.

The "Empire King" or
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for small orchards.

The "Orchard Monarch"
traction or gasoline engine driven—for medium and large orchards. Write for catalog.

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Spray or Surrender

that is the ultimatum that insects and fungi have served on every fruit-grower of America. If you do not heed the warning you will not get profits from your orchards. Every man who sprays intelligently, at the proper time, finds it the most profitable operation on the farm.

Send for illustrated catalogue of the ECLIPSE Spray Pumps and outfits.

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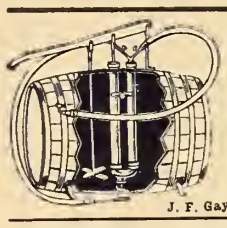

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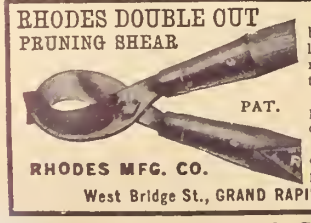

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scale—not in the great number of fowls, but in the great size and weight of the birds. Of course we had seen the ostrich since early boyhood penned up in a cage in Barnum's menagerie, but had never seen them in pens large enough to allow them to run about. The weight of a well grown ostrich is from 350 to 400 pounds. Some birds were eating gravel while we were looking at them as large as hickory nuts.

Their food is mostly alfalfa, of which they eat three or four pounds a day. The ostrich lives to be 35 to 40 years old, said the keeper of the flock. The males after they are grown, are divided into pens of three or four birds. Then again some are so cross that they are penned to themselves. Yet with all the care and watchfulness the older males occasionally get together and one or the other is killed in a few minutes.

The eggs weigh three pounds, and it requires forty days to hatch the young ones. Incubators are used, but not very successfully.

Mr. W. H. Bently, the owner of the ranch, said that the meat of the ostrich tasted very much like venison and that their eggs made a very good omelet.

Mr. Bently said that 99 per cent of 492,000 pounds of feathers are produced in South Africa. West Africa produces 27,000 pounds, while the United States, New Zealand and Australia produced only 5,000 pounds. His price for birds was from $800 to $1,000 per pair. Mr. Bently was an Iowa man, raised on a farm. While young in years Horace Greely's advice was taken, so west he came, learned how to manage the birds in the employ of a man on Coronado Beach in San Diego. After a time he became owner of the San Diego flock of the ostrich family, consisting of fifty-eight birds.

After a half day spent overlooking the large poultry business, we boarded a train for the Elcajon valley, thirteen miles from the city. At a convenient point we left the railway and boarded a tailyho and made a circuit of eighteen miles around the valley, where we saw some of the largest orange and olive orchards; also large vineyards, where raisins were being dried. When grapes are ready to gather they are put in trays with tight bottoms about 2½ by 4 feet, and distributed between the rows. Fifty pounds are spread out evenly in the tray and there left to dry in the sun between the rows of vines for two weeks. Then they are turned over and left to dry another week, after which they are gathered up in fifty-pound trays and hauled to sheds to go through a sweat. Then they are ready for stemming, which is done by a machine, which is fed like a threshing machine. They are passed through riddles dividing them into three or four grades. These are carried by machine carriers to boxes placed along the sides of the machine to receive them. Each box holds 65 pounds, which is nailed as soon as filled, and it is marked or branded ready for shipping.

Thirty tons daily is what a good machine will stem and run into boxes when kept going all day.

Tropico Strawberry Fields.

After spending a delightful week in and about San Diego we returned to Los Angeles and tarried five days; then spent a day in Pasadena. We spent a day also among the Tropico strawberry gardens, eight or nine miles northwest of the city, in the San Fernando valley.

About 1,000 acres in the valley are devoted to strawberries. While a few Americans are in the business, there are more Japs that have berry patches of four, five and six acres. They pay $20 per acre rent for the land, and $40 per acre for water to irrigate it. They have eight months berry picking season. For the three months, beginning with last of April and May the patches are more prolific, but the season is profit bearing all the way from the middle of April till the last of December.

D. Griswold, formerly of New York, was the forerunner of the berry business in this valley. He has a large pumping station, where he draws water from a depth of 100 feet with a gasoline engine to irrigate 200 acres in his immediate vicinity.

This year, said Mr. Griswold, had been a big year for the berry men in this valley; that the largest yield in money was a patch of twelve acres on which the grower had realized $18,000 up to the first of September, and that he had sold $1,500 in September, and for October would sell $1,000; then for the months of November and December $1,000 more.

Now, to us old veteran berry men of Kansas, Missouri and Arkansas, this is a big strawberry story; but it was verified by several other men in this valley. The grower of these twelve acres had used commercial fertilizer and thus pushed his patch for all that could be made of it. As a matter of fact the expenses of picking and crating had to come out of the $21,000 or a little over that amount. The second crop is always their best crop. Three crops is all they grow on their beds, then they follow with a change to crops of other kinds of truck one or two years.

The Brandywine is their largest and surest cropper, said Mr. Griswold, and the firmest for transportation. It had been shipped to New York in the early part of the season before other southern berries came in such quantities as would make a low market.

Here they do not trust their berries to be put on the market as picked by the field pickers. All the picking is sent to a packing shed and there overlooked, sorted out, making grades of No. 1 and No. 2 and so marked on the crates.

August and September planting, said Mr. Griswold, proved the most

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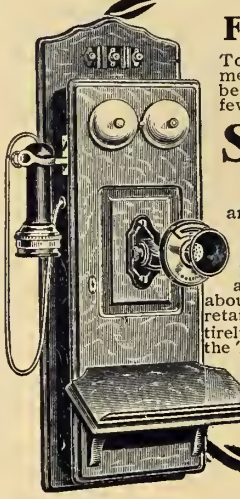

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If you want berries for your home, or for near or distant market, would one that is firm, beautiful, sweet, large, prodigously productive for five or six weeks suit you? The following extract from letter from Mr. John M. Sontag, St. Charles, Ill., tells why this is true: "We had a big flood, and cloudburst almost; your berries all O. K. so far; all the rest—nine varieties—got washed out and died or were covered with sand; your plants are larger by five times and have more roots." New circular.

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successful, as the runners on August and September planting did not interfere with the forming of well-developed fruit crowns for next year's fruitage. Setting plants was rapidly done. A smart, active young Jap could set from 5,000 to 6,000 plants in ten hours. This writer has not been able to get hands that would set over 2,000 plants with any assurance of a good stand. In this valley the berry grower sets plants in rows only twenty inches apart.

Irrigation is done in middle of rows.

Flumes to carry water are made of boards about 10x12 and they cost 25 cents a lineal foot made ready for use. The flumes are laid on low trusses or a six or eight-inch square block of wood on the upper side of the berry patch. Then an inch auger hole is bored close to the bottom of the flume opposite the middle of each row of berries. Corks are used to stop or unstop the auger holes when it is desired to turn it on the berry patch or off it. Berry patches are so arranged that the rows are from 400 to 600 feet long. Water is kept running between the rows till all are well watered.

Water in the valley is abundant and applied about every week during the height of the bearing season.

One great convenience that we never saw in a berry patch in the East worked out by Mr. Griswold were wire transporters (I will call them). These wires were attached to posts set in the ground about three or four in 600 feet. To the posts about six and one-half feet from the grounds were arms or brackets, to the ends of which wires were fastened and a pulley is so arranged that a box of a size to hold two or three crates is started from one side of the patch to the side where the packing sheds are located. To save walking to the shed where the inspector is overlooking the berries the picker puts his berries in this carrier, then gives it a shove, and in less than a minute it is at the inspector's shed, where it is unloaded and returned to the picker. This makes a great saving in time for the berry picker and prevents the soil in the berry beds being made as hard as roads by reason of the tramping. One other thing I observed was that these berry patches were models in clean culture. Weeds that had been cut out by the hoe were gathered up and carried to the roadway through the berry field on the outside to the highway and burned. Again the runners had been clipped or pulled off. We saw one Jap with his wife in the middle of the rows pulling the runners off the vines and putting them in baskets ready to carry out as soon as filled. The times when they were not very busy picking they used the wire carrier to convey the runners and weeds outside the patch.

The use of barnyard manure, said Mr. Griswold, was a failure in this valley on berry patches. Commercial fertilizers gave more satisfactory results.

We will never regret the day spent in the Tropico berry fields. Notwithstanding the thirty-eight years' experience we have had in the mid-continent berry patches, we have not learned it all, for here in this valley are some pointers and things done that could be utilized in the Central West or even in the East to the advantage of berry growers.

Headed for Home.

A flying visit was made to Gardena, another place of considerable note in berry culture. But we had but little time to look over the berry gardens, as we would like to have done. However, we found one of our old correspondents and a berry man, Wm. Gray, who had latterly gone into the real estate business in connection with berries. He thought that Los Angeles was growing so fast that his place would soon be swallowed up by the city. He had been considerably engaged in blackberry, raspberry and dewberry culture. He was having strawberries the day we were there. His blackberry bushes were full of ripe berries and blossoms that Mr. Gray said would ripen by Christmas. The blackberries were unusually large and tasted much sweeter than we thought a blackberry could taste the 10th of October.

We spent two days in the beautiful city of Pasadena, a suburb of Los Angeles. Here is a city that every Southern California visitor should see. More pride is taken here in home adornment than in any city doubtless in proportion to population than any city west of the Missouri river, if not in the United States.

As we had only had a taste as to mammoth poultry farming in San Diego, we could not go by the Pasadena ostrich farm of 180 fowls. There were hundreds of visitors the day we were there, and it required five or six men to follow them and answer questions. Here many of the finest birds were named for many of the departed soldiers, and some living, Gen. Grant, Maj. McKinley, Lord Roberts, King William, President Roosevelt, King Edward, etc. We saw here ostriches of all ages from a day old up to thirty years; also saw the female ostrich sitting on her nest of eggs. We were told that the female did the sitting in daylight and that she made her male companion do the night-time setting.

Our return homeward was over the Los Angeles, San Pedro & Salt Lake railway. This is the new railroad, 779 miles long, built mostly by Senator Clark of Montana. The road is a natural gravel bed the whole way through Nevada and to Salt Lake, Utah. The most scenic part of the road is on the Utah end of the line.

Now, should any of our fruit men friends want to see a big scope of country, try the route around through Wyoming, Idaho, Northeast Oregon, to the Columbia river, to Portland, thence south through the best part of Oregon and California to San Diego. Stop over nights—do most of your travel by daylight, and you will never regret time or money spent. The road will lead you through beautiful villages and over great mountains, then along the oceanside. The ocean, the mountains, the great canyons are a symbol of the vastness, the eternity and power of our Creator.

B. F. SMITH.

Lawrence, Kan., Nov. 4, 1905.

This Will Interest Many.

F. W. Parkhurst, the Boston publisher, says that if anyone afflicted with rheumatism in any form, or neuralgia, will send their address to him at 801-12 Carney Building, Boston, Mass., he will direct them to a perfect cure. He has nothing to sell, or give, only tells you how he was cured, after years of search for relief. Hundreds have tested it with success.

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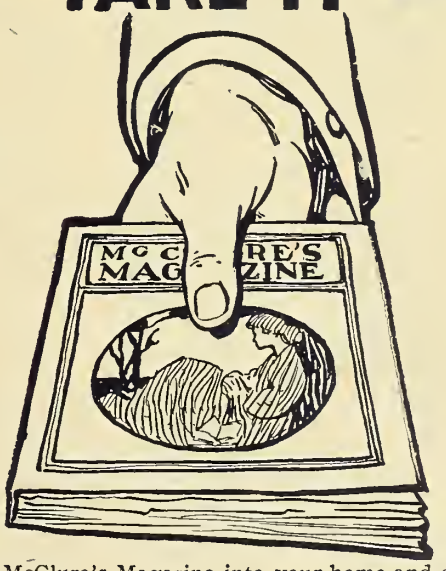

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Notes from the Northwest.

I have read with much interest and instruction the "Northwest Edition" of The Fruit-Grower for September, 1905. I am truly sorry that the representative of The Fruit-Grower did not find it possible to pay a visit to our broad and beautiful valley. The Willamette Valley is the largest and in many respects the most important valley of the Northwest, and we think that for things that are good and things that are beautiful it can rarely be surpassed in the wide world. Our farmers have not as yet specialized in fruit-growing to the extent that they have in many of the smaller valleys of the Northwest, our chief money crop so far being hops, followed closely by the dairy, general stock and grain farming, fruit and potato culture. In the production of some kinds of fruit the Willamette Valley surpasses any other section of the Northwest, while in the production of other fruits it is surpassed by some other smaller sections. I have never seen the cherries of the Willamette Valley quite equaled by those from any other section. I made a careful study of the cherry exhibits at St. Louis during the entire period of the World's Fair, and it is my unprejudiced opinion that the finest exhibit came from a section extending from Portland, Ore., fifty miles south.

During the past four years I have frequently made journeys far up into the foothills to an elevation of from one to two thousand feet, and around the pioneer homesteads, many of which were located in these elevated sections, I have found some of the grandest old cherry orchards that I have ever seen. Cherry trees have stood here in the basaltic boulders for more than fifty years, and have reached the proportions of good sized oaks, often bearing as much as two hundred gallons of cherries to the tree. All of the finest old varieties are represented, Royal Anne, Yellow Spanish, Gov. Wood, etc. In the lower lands of the valley, where the cherry orchards have been recently planted, Black Republican, Bing and Royal Anne are general favorites and grow to great perfection.

The Willamette Valley is not so successful in the production of fine commercial apples as Hood River, Rogue River and other higher and drier valleys. We have a little too much moisture and not quite sufficient sunshine to develop the high quality and appearance in the apple reached by those more favored sections.

However, immediately adjacent to the small streams tributary to the Willamette River, Baldwin orchards are producing fruit claimed to be equal to the finest product of Hood River. Another condition that renders the production of a No. 1 commercial apple so difficult here is the apparent impossibility of controling the codling moth. I note what the Hon. E. L. Smith says in reference to spraying, and that "any one can control the codling moth who sprays intelligently and diligently"; but I think that Mr. Smith errs in judging all localities according to the climatic conditions that are present at his place.

Those who have sprayed longest and most persistently in the Mississippi Valley have noted that the best results from spraying are achieved when the spring is dry and the insecticides are more effectually retained upon the foliage and fruit, while when the spring is a wet one the most varying and uncertain results follow. Here in the heart of the Willamette Valley the average spring is a season of almost continuous rainfall till the last of May or later. As a result spraying has never been a marked success, and those who advocate it are not enthusiastic.

Last summer at St. Louis I met an old friend who is an extensive orchardist and has been a persistent sprayer for ten years—ex-President Robnett of the Missouri Horticultural Society. It put him the question: "Do you believe spraying pays?"

He replied: "Honestly, I have tried to believe it, and have spent a great deal of money spraying, but my neighbor across the road who has never sprayed has grown better fruit than I have."

So it seems to me that conditions everywhere vary and the wise scientific horticulturist will take advantage of every condition that is in his favor.

It is even so in regard to large or small orchards, upon which subject I see the Fruit-Grower representative has decided opinions and suggests a lesson to the large orchardists of the Middle West. It is no doubt true that many planters in Missouri, Arkansas and Kansas have planted too extensively and have not given their orchards the best of care. But I can not see that any method of culture would have helped them the past three years. The wisdom and industry of man is powerless against killing frosts, tornadoes, floods and withering droughts.

Fifteen years ago when I began to plant an orchard in Northwest Missouri I was a youth of much enthusiasm and little practical experience; but I had just finished a four years' course in the Missouri Agricultural College and Experiment Station, so I felt that with the best of counsel failure would be impossible.

My trees grew grandly; they even blossomed and bore a few fine fruits. And then came that terrible winter of 1898! My Elberta peaches and Japan plums were swept away or left lingering invalids. My large planting of Kieffer pears would persist in blighting in spite of what the books and best authorities said, and in spite of all my remedies applied fresh from the Department of Vegetable Pathology; and so they continued to blight, but not to bear, even unto this day, and stand as a decaying monument to my youthful wisdom (?).

The plain fact is (and it stands without a shadow of questioning by any one who has stood upon the ground), that the Northwest is a fruit country, preeminently so! Another fact equally plain to my mind is that my native country is not naturally adapted to the commercial fruit business, and that that business can never be made eminently successful, whether the orchards be large or small. Missouri can produce apples, peaches, grapes and berries unsurpassed in quality. But the question is, can she produce them as profitably as she can some other equally necessary products of commerce?

Here in the Willamette Valley it is the rarest thing for an orchard to have an off year. Killing frosts and destructive winds are practically unknown. I have never seen an apple tree borer nor a curculio nor a canker worm in the valley. A genuine case of "pear blight", or "black rot" in grapes I have never seen. But some of the things I have seen are: A cherry that measured 1¼ inches in diameter; an Early Crawford peach that measured 15 inches in circumference; a Bartlett pear weighing 1 pound; pear trees that have stood fifty years and are fifty feet in height; Evergreen blackberry bush from which more than 100 gallons of fruit was picked; a Delaware grape vine grow to the top of a large peach tree and cover every branch with its beautiful pink clusters; roses in bloom and lawns as green as emerald on Christmas day; fresh celery and cabbage from the garden any day in the winter. None of these things are said with the slightest purpose to advertise this country. I have no land to sell nor other interests to boom. This country has its drawbacks as well as advantages.

What the farmer from the Missouri Valley misses most here is his grand fields of corn and matchless plains of bluegrass pasture. And it is a significant fact that the average farmer here is not as well off as in Missouri, Iowa and Illinois.

As Walter Williams said last summer, "You people up there live on climate and scenery," and I would add, mountain trout and Bing cherries.

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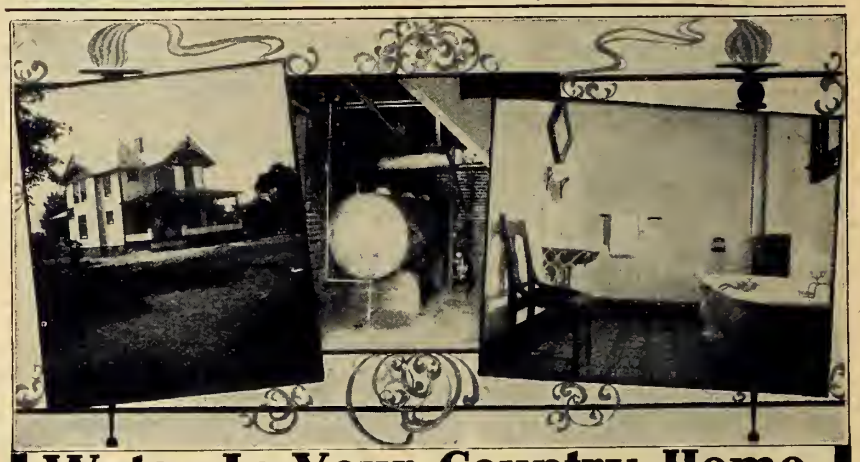
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R. S. & A. B. LACEY, Patent Att'ys, Washington, D. C.

The Evelyn Apple.

At the meeting of the American Pomological Society, at Kansas City, in September, Col. G. B. Brackett recommended the Evelyn apple as a valuable new variety from Minnesota. The Fruit-Grower is glad to present herewith an illustration showing a plate of this variety, this cut having been made from a photograph of a plate which took first prize at the last Minnesota State Fair.

Mr. A. B. Lyman, of Excelsior, Minn., who sends the photograph, also sends the following history and description of the Evelyn. It should be said, in this connection, that Excelsior, Minn., is also the birthplace of the Wealthy apple, which is one of the very best apples of its season. Concerning the Evelyn, Mr. Lyman says:

"The Evelyn apple was originated by H. M. Lyman of Excelsior, Minn., from Wealthy seed planted in 1876. Mr. Lyman had three Siberian crab trees that were top-worked to Wealthy and grew by themselves. In 1876 he saved the seed of these Wealthy apples and planted them, and thereby originated a lot of seedlings that have become quite widely known. They are nearly all apples of standard size, and have won many first prizes because of their fine color and quality. Several of these Wealthy seedlings are winter apples.

"Upon request we sent a few of the best varieties to Col. G. B. Brackett of Washington, D. C., United States pomologist. Later we received the word that 'the Evelyn is an apple of superior quality, worthy of cultivation over wide area.'

"The Evelyn took first prize as best winter apple at the Minnesota horticultural meeting held in 1903, also at the winter meeting held last December. At our last state fair this variety also took first prize as winter apple.

"The tree is somewhat spreading and has a large, healthy foliage and has been very productive. The fruit is remarkable for not falling off the tree, and is of high quality, scoring 95 points at the last winter meeting of the State Horticultural Society. The fruit is ripe at the time of the Northwest Greening. Last year we picked this fruit on the 20th of October, and this season they ripened at about the same time. The Wealthy ripens here about the middle of September, and if we have a warm fall they perish badly, while the Evelyn keep well, as they do not ripen until cold weather."

Notes from the Ozarks.

Editor Western Fruit-Grower:

While the fruit-growers of the Ozarks are not saying much, they are thinking hard, of how they can increase their revenues next yer.

Again, while planting trees will not be so general next season as in some of the recent years, it will be considerable.

Geo. W. Perry, a prominent business man of St. Louis, recently purchased a fine farm adjoining the Maine Fishing and Hunting Club, Taney County, and will put 125 acres in peaches, pears and apples. He will set 60 acres to Kieffer pears.

R. D. Culver of Indiana will plant 40 acres to peaches, pears and apples. G. A. Atwood will set 40 acres to these fruits in Taney County, too.

Millette, Yarbrou & Bradshaw will devote 100 acres of their fine Stone County tract to apples, pears and peaches.

McDonald Land & Mining Co., Jos. C. Watkins, Galena, Stone County, manager, will make their first planting of 40 acres of pears, peaches and apples. In 1907 this company will set 60 more acres to fruit.

The Maine Fishing and Hunting Club will add 40 acres of pears, apples and peaches to their 100 acres set last April.

Several other parties will engage in fruit-growing in old-new Taney County, which now has a railroad running through it.

All along the great fruit Frisco line the orchardists and berry growers are wide awake. If they are not saying much they are resolved to do better work than ever, and they expect 1906 will be the banner fruit year of the Southwest.

G. A. A.

Springfield, Mo.

Money Talks.

I enclose 50 cents to renew my subscription to The Fruit-Grower for a year. "Actions speak louder than words." I might write two pages telling how good The Fruit-Grower is, but you wouldn't know I meant it unless the 50 cents was inclosed.

A. H. MORRIS.

Hereford, Texas.

You are right, Brother Morris. Money talks, and your remittance shows how you appreciate The Fruit-Grower.

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WESTERN
THE FRUIT-GROWER
ST. JOSEPH, MISSOURI

Address all communications and make Remittances Payable to "The Fruit-Grower Company," Seventh and Charles Streets, St. Joseph, Mo.

W. G. Campbell, Jr., General Manager James M. Irvine, Managing Editor

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No advertising in class generally termed "Objectionable" accepted under any conditions. Editions mailed on 1st day of month. Forms close on 20th of preceding month; i. e., January forms close December 20th, etc.

Circulation FORTY THOUSAND COPIES a Month

Subscription, 50c a Year After January 1, 1906, rate will be $1.00 a year. Until that date our readers may pay ahead from one to four years at 50c rate

Remit us U. S. Coin, or Currency, Postoffice Money Order, Express Money Order, Registered Letter or Bank Draft. Send stamps only as last resort. All remittances at our risk. Unless otherwise ordered, subscriptions will commence with month following date of remittance, and continue until ordered stopped and arrearages paid. If you desire paper to stop when time is up, notify us. The letter "S" after date on address tag signifies that paper will stop on that date. The address tag stands as a receipt for your remittance. In compiling a list for Forty Thousand subscribers, it is an easy matter to make mistakes, but we guarantee fair treatment to everyone. If you find an error in your address tag, or do not receive paper promptly, write us and we will trace matter up at once.

Entered as Second-Class Matter in the Postoffice at Saint Joseph, Missouri

Vol. 16. DECEMBER, 1905. No. 12.

Attend the Horticultural Meetings.

The Fruit-Grower would make a plea for a large attendance at the various horticultural meetings this winter. These meetings are intended to help fruit farmers, and in order to secure the greatest good from them, one must be present in person, and not depend altogether upon a report of the meeting. The Western New York Horticultural Society has such a large attendance at its meetings that it has been found necessary to admit only members within the hall, but this does not apply to our Western societies. There is always plenty of room at the meetings of all of them. Indeed, many of them have a hard time every year getting an attendance of 100 members, which will secure reduced rates on the railroads. Cut loose this year, and attend the meeting of your state horticultural society. The Kansas and Missouri societies hold their meetings—one at Topeka, the other at Kansas City—during Christmas week, and reduced rates will be in effect on the railroads. Arrange now to attend these meetings. Instead of allowing the work of the society to be carried by a few, get in line and help make the meetings helpful. The Fruit-Grower would like to see every Missouri subscriber at the Missouri meeting at Kansas City, Dec. 28 to 30, and every Kansas subscriber at the meeting at Topeka, Dec. 26 to 28. Why not? We shall expect to see many of them there.

Poor Old Ben Davis and Pat Kiely.

It is perhaps retribution which has overtaken our friend P. M. Kiely of St. Louis. It will be remembered that for years he has devoted his spare time to berating Ben Davis apples. Think of that, from a Missourian! He has filled columns of newspaper space in telling of the shortcomings of Old Ben, until he has been recognized as the chief high guy when it comes to leading the attack on this variety. But retribution has overtaken him. On the 13th of November a carload of Ben Davis apples sold in St. Louis—and Mr. Kiely sold them—for $4.07 and $3.87 per barrel, the first price being for extra fancy, the latter for fancy fruit. The apples were Missouri-grown, and Mr. Kiely collected this price for the fruit without a squeak of his conscience. Now, of course Jonathans or Grimes Golden would have brought more money—but the grower had no Jonathan and no Grimes Golden, and he did have Ben Davis. Poor old Ben, Poor Pat Kiely.

"Killing the Goose, Etc."

For years Northern markets had no oranges from Florida, for the trees down there had been killed by a severe winter. During this interval we were told of the good, sweet oranges which formerly came from Florida, until it was with great joy we received the announcement a year or two ago that Florida was to be a factor in the orange market again. But, alas! Florida oranges are not living up to their reputation, for the reason that growers are shipping them before they are ripe. Florida oranges have been on the markets for several weeks, but it is safe to say that the average person who buys them, after he learns where they are from, resolves that henceforth he will pass the Florida fruit and wait for oranges from California. The fruit has been green and very sour. Florida growers should see that this condition of affairs does not continue. They should not allow their fruit to be shipped before it is ripe, else they will disgust the consumers with their fruit. It will not do to say the consumer ought to know enough not to buy green fruit—the fact is simply that he knows the Florida fruit is bad, and the result is that the growers are apt to "kill the goose that lays the golden egg."

What is said of Florida orange growers applies also to growers of other fruits who ship inferior stuff.

The Insurance Scandals.

At the present time a great stir is being made over the rottenness which has been uncovered in the investigation of certain large life insurance companies. It would seem that if any institution is kept free from graft it should be the institutions formed to look after the widows and the fatherless. And yet the investigation has shown that the funds have been grossly mismanaged. Think of paying the president of one of the concerns a salary of $150,000 a year. Then add the fact that this president has provided positions for all his relatives at very high salaries. Then, too, it has been confessed that several of these companies have for years been contributing to the campaign funds of some of the political parties, these contributions being made from the funds of the policy-holders. It is certainly a bad state of affairs, and it is to be hoped that the results of the investigation will be a thorough cleaning up of the companies. If some sort of supervision is not provided which will correct these evils, there will unquestionably be a demand within a few years for a form of insurance by the state or national governments, by which any citizen has the privilege of insuring his life at cost, and with the assurance that his policy is as good as the government itself.

It is said the deficit in the postal department of the United States government this year will amount to about $15,000,000, and the statement is made that this is due to the extension of rural delivery. Might it not be possible to reduce expenses somewhat by securing lower rates from the railway companies for the carrying of mail? It will hardly be possible to reduce the number of rural mail routes, now that farmers have become accustomed to the new order of things. And if retrenchment is necessary, why should it be even suggested that the farmers should have their mail cut off, and the city people continue to have their mail delivered free? It is safe to say that rural delivery will not be discontinued, deficit or no deficit, and the authorities will have to look elsewhere to make the department self-sustaining.

THE FAMILY CIRCLE

This issue of The Fruit-Grower closes the ninth year of the paper's history, the first number having appeared in January, 1897.

The past year has been the best in the paper's history, so far as the character of the paper is concerned. Larger and better papers were printed than ever before, and more of them were published.

Do the members of The Fruit-Grower Family quite appreciate what has been furnished them during the year 1905? Almost 400 pages are included in the twelve numbers—400 pages, the printed surface being 9 by 14 inches. That makes a pretty big book, don't you think?

And if the type used, instead of being comparatively small type, had been as large as that ordinarily used in books, the number of pages required to contain the matter would be about doubled. And a book with 800 pages the size of The Fruit-Grower pages is quite a book.

Look at the index to this volume, which is printed on one of the last pages of this number. Quite an array of articles, many of them being very full and comprehensive, and all of them interesting and profitable. Those members of The Family who have saved their papers for the past year—and everyone ought to have done so—will appreciate this index, which includes most of the articles published during the year.

Even if you have been so careless as not to keep the issues of The Fruit-Grower for the year, look over the index anyway. Then you will appreciate what you have missed by not saving your papers.

You will perhaps find in the index the titles of some articles which you do not remember to have read—perhaps you did not read them at all. But you would like to read them now. Then there are other articles which you may have read, but which did not interest you at the time. You did not charge you memory with the facts presented—but now you have need of them, and you turn to The Fruit-Grower—that is, you turn to The Fruit-Grower, provided you have saved your papers.

Want to know how to make lime-salt-sulphur mixture? Or how to make arsenate of lead? That was explained in February number.

Want to know about the codling moth and its work, or do you want to know how to recognize and fight apple scab? That was explained in March number.

Are you interested in mulched orchards? F. P. Vergon of Ohio had an excellent article in March issue—do you remember it?

Oh, there are a lot of things in the issues for 1905, and you could with profit look over them again.

Remember this, and save the papers for 1906, for the Fruit-Grower will be better for 1906 than it has ever been before—stick a pin there.

We mention this matter now, for we know there are a lot of Fruit-Grower readers who ought to save their papers, who do not. File them every month, as soon as you have read them. At the end of the year an index will be published for the entire twelve months, and the papers will be very valuable.

Readers of The Fruit-Grower who have files of the papers will realize what an improvement has been made in the paper. The volume for 1905 is more than twice as large as that for the first year of The Fruit-Grower's history.

This increase in size of the paper and the accompanying improvement of the contents, together with the increased cost of labor, paper and all that enters into the making of the paper, accounts for the increase in our subscription rate fo $1 per year.

For you must remember that after January 1, 1906, the subscription rate of the Fruit-Grower will be $1 per year. We are compelled to make this increase in subscription price in justice to ourselves. To show that we are not alone in this position we need only mention that such publications as The Ladies' Home Journal, Everybody's Magazine, Country Life in America, Green's Fruit-Grower and others have found it necessary to increase their rates. All the publications cost a great deal more than they

"BOSS" Washing Machine
A WOMAN'S FRIEND

Over 1,000,000 Satisfied Users. Why be without a "BOSS" Washer.

Paid for in one year
Costs less than 25c a week
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WASH DAY A PLEASURE.
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It will cleanse 10 shirts in 12 minutes or garments to the amount of 10 shirts. Guaranteed to cleanse the finest of fabric, including laces, without injury. Over 1,000,000 now in use, which proves its merit, and no home should be without a good washer. Write and we will arrange to send you one on two weeks' trial.

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For Fall or Spring Planting

We would like to fill your orders for plants, be they large or small, and will promise you to fill promptly. We have a large stock and they are fine and well rooted. Send in a list of your wants for prices. Nice 20-page catalogue free for the asking. Address

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by the dozen or million; 50 varieties. I especially wish to correspond with large prospective buyers. All other Berries, Fruit Plants, etc. Introducer of Plum Farmer Raspberry. Catalogue and valuable information free. Address

L. J. FARMER.
Box "W,"
Pulaski, New York

The KING GRAPE

The most promising of all new grapes. Largest cluster, largest berries, largest yield, best quality, heavy leaf and strong grower. Awarded highest honors wherever shown. For further description, with photo, write to the originator,

WM. K. MUNSON, FRUIT-GROWER, Grand Rapids, Mich.

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Raspberry tips for the trade at very low prices. 2,000 Jonathan Apple Trees and Elberta Peaches.
T. B. MILLER, SPRINGDALE, ARKANSAS.

Very Special Offer

The MOHICAN Safety Razor is positively the best made and guaranteed to shave the heaviest beard. It is a $1.50 modern razor, heavy silver plated and packed in a handsome case; the blades are of finest English tempered steel. We have 8000 which we will sell this month at the Very Special Price, 85 cents each. Valuable Circular FREE. ORDER AT ONCE.
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is a portable 100 candle power light, costing only 2cts. per week. Makes and burns its own gas. Brighter than electricity or acetylene, and cheaper than kerosene. No Dirt. No Grease. No Odor. Over 100 styles. Lighted instantly with a match. Every lamp warranted. **Agents Wanted Everywhere**
THE "BEST" LIGHT CO.
277 E. 5th Street, CANTON, OHIO.

Christmas and New Year's Post Cards, 30c and 60c a dozen.
Christmas Booklets, 5c, 10c and 25c each.
Calendars, 25c to $5.00 each. Price List Free.
U. S. SOUVENIR POST CARD CO.,
Dept. 61, 32 East 23rd St., New York.

did a few years ago, and the increase is really necessary.

We believe our readers realize the truth of this statement, and that they will see that the increased subscription is justified. They must remember that commodities which farmers have to sell, as a rule, bring better prices than they did at the time when The Fruit-Grower was started, and in order to pay those higher prices for foodstuffs, etc., printers, pressmen, papermakers and all that help to make The Fruit-Grower must have a somewhat larger income. The increase in price, you see, is mutual.

Some of our readers will feel that they ought to have the paper at the old subscription price; some of them have written us to this effect. They can have the 50-cent rate for several years to come in this way:

Until January 1 renewals will be accepted at 50 cents a year, for not to exceed four years from date at which your subscription now expires. For instance, if your subscription expires on January 1, 1906, send $2 and pay it up to January, 1910. In this way the increase in rate will not affect you for four years, at least—and then you may be reconciled to the new subscription rate.

Have we made that plain? Everyone has the privilege of extending his subscription for four years from date at which the subscription now expires, at rate of 50 cents a year.

Now, don't find fault with our new rate, when you have an opportunity to extend your time for four years at the old rate. It rests with you as to whether or not you avail yourself of this offer.

Another matter: A great many subscriptions expire at about this time, and recently we sent out notices to all those whose subscriptions expire with December, 1905, or before. The address on the wrapper in which you receive this paper shows when your subscription expires. If you received notice, or if your date shows your time to have expired, renew today, and take advantage of the 50-cent rate. Extend your time for four years, for $2, and have the matter out of the way for a long time.

The Fruit-Grower heretofore has been worth more than 50 cents a year—and if this is true, how much better value you will have for your money in the next four years.

Can you imagine a better proposition than this? But remember that your renewal must be sent by January 1 to secure this rate—after that date $1 a year.

If for any reason you wish The Fruit-Grower discontinued to your address, kindly notify us to this effect.

The January Fruit-Grower will be our anniversary number, and will contain reports of many of the horticultural meetings which will be held in December. These reports will be very valuable, for at the various meetings the growers will discuss the problems which have perplexed them, and these discussions will help to show you a way out of your difficulties, perhaps.

The Oregon subscriber of The Fruit-Grower who grew the record-breaking carload of pears, which was sold in New York recently, will contribute an article telling his experience in growing pears.

There will be articles telling of the new fruits and flowers and vegetables which will be offered next season, with descriptions and illustrations of many of them.

The regular departments will be better than usual—for our readers have more time to study them during the long winter evenings.

Two features of the January number will be of especial interest to our women readers: We shall begin a series of articles on ornamental planting of shrubs and flowers, and hereafter we shall have a special department for women. This new department will be a good one—look for it in January.

The answers to questions will be a feature during the winter, for at this time our readers are trying to find a way to help meet the problems which will confront them when spring opens.

The horticultural reports will take up much of the space for January, but for the next three months there will be some rich things offered.

February issue will be specially devoted to the subject of spraying, with reference to insects and fungous diseases.

March number will be our regular Gardening special, and those who remember the splendid number of last March will be anxious to see it, when they understand it will be better than the gardening special for 1905.

April will be devoted specially to small fruits, and it will be one of the best papers we have ever sent out.

One other thing we ought to mention concerning the January number is that it will contain the first announcement of a number of contests which will be inaugurated for the benefit of our readers. Everyone will have a chance to win cash prizes. Look for this announcement.

We hope everyone whose subscription has expired will renew at once, or if this falls into the hands of one who is not a subscriber, we trust subscription will be sent us at once. This will help us to celebrate Christmas a little better. We want all the members of The Fruit-Grower Family to have a happy Christmas, and if you want us to enjoy the holiday season, send your renewal—with perhaps a new subscriber or two—today to

BROTHER JONATHAN.

STRAWBERRY PLANTS

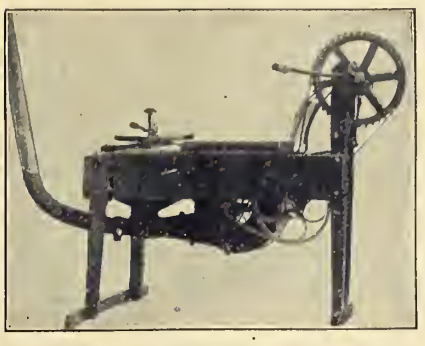
Virginia and Chesapeake, winners of $100 GOLD PRIZE offers; also Cardinal, Commonwealth, North Shore, Oaks Early, New York, Glen Mary, Stevens Champion, and 90 others; best list, good stock, reasonable prices: Dewberries: Lucretia and Austins. **SEEDS** **Cabbage:** New Volga and 20 other varieties. **Cucumbers:** Peninsula Prize, **Allen's Pride of the Market,** Arlington Spine, Shamrock, etc. **Cantaloupes: Allen's First Choice,** True Rocky Ford. **Tomatoes:** Livingston's Globe, **Allen's Best,** Chalk Jewel, Maule's Earliest, Earliana, etc. Kansas King, Eighty Day Yellow Dent, Maryland Queen **Field Corn.** Best new and standard Garden, Field and Flower seeds, Asparagus Roots, Special Agr'l Implements, etc.

60 PAGE CATALOGUE FREE. Send address on postal NOW. It tells about lots of good things for the farm and garden and where to get them.

W. F. ALLEN, Dept. 38, Salisbury, Md.

Always mention The Fruit-Grower.

The Whirlwind



If you are interested in the dust process of spraying, we would like to tell you about our machines.

We use The Whirlwind in in our own orchard of Ten Thousand Trees, and have been successful in controlling insects and fungous diseases.

We shall be glad to hear from those who wish to investigate the dust process. We have something new to tell them.

Advertising literature, with testimonials from our customers, sent free for the asking. Address

Kiser Whirlwind Duster Mfg. Co.

STANBERRY, MISSOURI

"Look Out! Fresh Paint!"

Probably every reader of this paper has heard of O. L. Chase, the Paint Man. Mr. Chase has in a few months made his name a household word. We dont mean he has only been in business a few months, for that is far from the fact. His business is one of many years standing, but during these years they were tracking along in an old rut.

Then one day he got a new idea—not to make his paint any better because it was already as perfect as the purest materials and best methods of manufacture could make it. But he determined that more people must know how good his paint was and so he commenced advertising that he would make paint to order, to insure its being fresh; that he would sell on six months time and give an eight years guarantee. In a breezy, characteristic, but reasonable way, Mr. Chase describes his goods and his selling plans.

The special point Mr. Chase makes is the importance of ordering now so that the goods can be made and shipped promptly when desired. We learn that hundreds are taking advantage of his special offer and are ordering paint now for shipment in the future. A special order blank is furnished for this purpose and every encouragement is offered to try this novel plan of buying paint. Refer to his ad. on page 11 of this paper and write for his plan and the Free Booklet. Just address O. L. Chase, the Paint Man, 403A Sixth St., St. Louis, Mo.

Fresh Paint Talks

By O. L. Chase.

—And Two Gallons Free to You to Prove All the Claims Made in This Talk.

O. L. Chase

I AM THE PAINT MAN.

I haven't a bit of sense—except paint sense,

Figuratively speaking, I'm wrapped up in Paint—I am smeared all over with it.

My whole time, thoughts and ideas are on the question of paint.

I stand for *fresh paint*—

And I'll tell you why—

Paint no sooner begins to live than it begins to die—and when you buy paint you buy it for the *life* in it—for the time it's going to live upon your building.

—And to get the most value for your paint money you must buy the *life* of the paint—not in the can, but the life *on your buildings.*

—You ask me what *is* the life of paint?—and I tell you quick—

Pure, cold-pressed, old process Linseed Oil—*that's* the life of Paint—that's the binder, the soul,—the thing that makes Paint stand the racket in storm and sun, and holds the pigments together on your buildings.

—And why does fresh paint made to order have more life than mixed paint?—you ask.

—I'll also give you a quick answer to that—

If you could see through the tin of a can of mixed paint you would see a chemical row going on—

The mineral paint pigment—white lead, coloring matter, and dryer—commences to eat the life out of pure linseed oil the minute they get together—

If they have been together in a can on a dealer's shelf, or in a manufacturer's warehouse, for six months, there is just six months' life gone out of the oil—

If they have been together a year, a year's life is killed.

Maybe you never thought of it, but that's the reason why so many jobs of paint crack, curl up, peel off, get chalky, and rub off on your hand.

The oil in that Paint was dead when the Paint was put on—the pigment dried out when exposed to the weather and sun not having the protection of the oil coating.

Now, I'll tell you another thing—

Ready-mixed Paint that you buy in the can is always stale paint—half dead paint—because of the method of its manufacture.

Here's a little paint secret—a manufacturer's secret:

The ready-mixed paint manufacturer has to make his paint up for stock a long time in advance of the sale—he's making it for his warehouse or for the dealer to hold on his shelves, waiting for a customer—

Sometimes the paint waits in these warehouses or on dealers' shelves for six months—a year—two years—longer—so you see when it's opened for use, it's half dead—or three quarters dead, or maybe nearly all dead—

And another thing:

There's a cement-like sediment in the bottom of the can—this can never be properly mixed again.

* * *

Now, I am spending money in this advertisement to tell you these things, because *my* method of manufacturing and selling paint is *different.*

First—my method of manufacturing;

I manufacture my pure pigment, and pack it in separate cans, from my pure old process linseed oil—which I call "Oilo" to designate it from cheap adulterated oils on the market—

I manufacture this Paint to order *after* each order is received, and I date each can the day it's packed, with the date placed right on the can by my inspector, so that when my Paint goes to the customer it's *absolutely fresh*— a *certified* Paint—that has every bit of life in it.

It's such good Paint that I sell it on six months' time—

No other Paint concern in the world ever sold paint on time until I started.

Maybe their paint wouldn't stand it—I don't know—but anyway, they never sold it that way.

—And to test my Paint I allow any customer to use two full gallons out of any six-gallon order or over, and then if he is not satisfied that all of my claims are true, and that my Paint is the *most elastic, springy* paint under the brush, looks the best, and is the best, he can send back the balance of the order, and the two gallons will not cost him a penny.

Why You Should Order Now for Spring

There's a limit to my manufacturing capacity—

On account of making paint to order, I am not able to make up a gallon of paint in advance of the big Spring season, which places me in a position every Spring where I have to send back orders, being unable to supply the demand.

5,000 gallons is a lot of paint to make in a day.

My orders run larger than that—

I'm telling you this because I have an advance-order plan which will enable you to get paint in the Spring months just the week you want to use it.

I number these advance orders, place them on file in my office, with space and material reserved in my factory to make up these orders during the week they are wanted, and these come ahead of all orders taken later in the painting season.

So if you want to insure yourself getting my made-to-order fresh paint at a certain time next Spring, write for my Advance-Order Blank, and my beautiful Paint Book just off the press, which tells all about fresh and made-to-order Paint and gives you a large collection of good sized color-cards to select from—select the paint you want—send me an advance order, subject to cancellation within thirty days from the time the paint is to be delivered, and subject to a change in color if you desire.

I will acknowledge this order, and register it up, and guarantee to furnish you the Paint on my "Two gallons—free trial—six months to pay" plan—

The date of payment will be six months from the time the order is filled—

This will insure you getting fresh paint just when you want it, on 6 months' time.

And let me tell you—over half the capacity of my factory is already sold out for next spring, so you should write me at once, if you want to take advantage of this advance-order offer.

Eight Years Guarantee

I give an officially signed, iron-clad Guarantee for eight years on my made-to-order fresh Paint.

This is the longest and most liberal Guarantee ever given by a Paint Manufacturer—and back of this guarantee stands my $50,000 Bond.

All in all, my paint proposition is the greatest one ever put on the market, and you should get my literature at once.

For a postal card with your name and address I will send you my beautiful Paint Book—my little Instruction Book, entitled "This Little Book Tells How to Paint," copy of my Eight-Year Guarantee, and my Advance-Order Blanks.

Write at once.

O. L. Chase *The Paint Man,*

403 A Sixth Street St. Louis, Mo.

Maj. Holsinger's Department

Damages for Killing a Shade Tree.

A verdict of much importance to property owners and telephone and telegraph companies was returned by a jury in Judge Park's division of the circuit court yesterday afternoon. Mrs. Ella S. Betz was awarded judgment for $200 against the Kansas City Home Telephone company, whose employes had cut the top out of one of her shade trees at 4210 Walnut street. The testimony showed that the tree, a fine poplar six inches in diameter, interfered with the telephone wires, and the workmen, without consulting Mrs. Betz, chopped out the top and center of the tree and it died. This was in May, 1904. Mrs. Betz sued for $300.—Kansas City Star.

Good for Kansas City!

The telegraph and telephone people have at last learned a lesson. In times past they would cut and destroy at their own sweet will any tree that came in their way or which interfered with their lines. Here is an example; $200 for a six-inch poplar. It seems a pretty stiff price for a tree that may be grown in five or six years, yet who can estimate the value of such a tree to the home? Good enough! Let the corporations learn that there are rights of others, the common people, that must be respected.

Monument to Dr. Murphy.

The citizens of Evansville and vicinitv, desiring to honor this good brother, raised the sum of $300 with which they purchased a monument to his memory. The doctor was among the most unselfish of men, giving his time and strength to all needing his services. To his self sacrifice is due his early demise. I was told that only a short time before his death he said that "he was so overworked that for two weeks he had not been out of his clothes."

Inscribed on the monument was:

"Greater love hath no man than this, that a man lay down his life for his friends."

Hon. Edwin Taylor and others made appropriate remarks to a very large assemblage of friends.

Missouri Valley Meeting.

The last of our summer meetings was held in Edwardsville, twelve miles west of Kansas City, on the 21st of October. On account of poor train facilities a drive from Kansas City was necessary. As the day was an ideal one, and the roads firm and free from dust, the drive was a pleasant one, as the scenery bordering the Kaw is hard to excel. I have seen the Hudson and have heard much gush concerning its scenery. The Hudson is old in history; the Kaw is new. As time advances the Kaw and hills bordering the stream will become better known and appreciated.

This meeting at Edwardsville is always known as the "inter-state meeting." The Douglas County (Kan.) Society, as also the Shawnee County (Kan.) Society, were well represented. Secretaries Coburn of the Kansas State Agricultural Society and Barnes of the Kansas State Horticultural Society were visitors. Missouri, too, was well represented in Vice-Presidents Dutcher and Gano, with others well known to horticulture. It will be thus seen that meeting." I was told by one of the good lady members, "held in this place by the Missouri Valley society, the meeting was representative.

"This meeting is the nineteenth and we have never had a bad day in all that time."

The good people of Edwardsville and vicinity vie to make the October meeting the best.

Said Bro. Smith of Lawrence: "This surely is high water mark," referring to the magnificent dinner. I stated the proposition to Brother Gano for his endorsement, and his answer was "the last is always the best."

Dinner over, President George W. Holsinger called the meeting to order. The minutes of the Parkville meeing, the August meeting, Miss Lulu Goodman having acted as secretary on that occasion, were quite interesting to us, who had not had the pleasure of being at that meeting.

Mrs. Mary E. Rose had a very entertaining paper on "Familiar Features of the Roadside." As we have the promise of this paper, we can promise our readers a real treat in the near future.

"Apples or Sheep, Which?" by Edwin Taylor. This paper, too, will appear; that it will please goes without saying, as the senator has a vein of humor of the first water.

"A Cucumber Patch," by Mrs. Geo. Moffitt of Lawrence, Kan., will be appreciated by the Fruit-Grower readers later, as will "Stone Fruits," by Maj. John M. Newcomb of Lawrence. Four better papers are seldom read before our society than those read to our society on this occasion.

My paper on "The Value of Horticultural Societies" went over, at my request, saying that "it was an unusual thing to have at one meeting so many good papers and so many distinguished visitors, I felt sure the society would willingly excuse my paper in their desire to hear such men as Secretary Coburn, Secretary Barnes, Vice-President Dutcher of the Missouri State Society, Smith of Lawrence and many other veterans whom it was a pleasure to greet." Secretary Coburn appeared on being called, but excused himself.

Secretary Barnes made a report of apple conditions in Kansas and completely took our breath away on giving an account of a recent visit to some of the immense orchards in South Kansas, especially the Coombs orchard. "This orchard will produce a crop this year of 250,000 bushels of fine No. 1 apples." or, as the secretary put it, "that was Mr. Coombs' estimate, and he did not think it overestimated."

Mr. Coombs said many of these apples would bring him $1,000 a carload. Mr. Barnes said further, "that all the orchard was a full crop, except one quarter section." This orchard comprises twenty-one quarter sections of land and is located near Parker, in Linn County.

To a question: "Did Mr. Coombs sprap, and what formula used?" Mr. Barnes said Mr. Coombs sprayed twice, but he did not know time or formula used. Mr. Barnes was requested to ascertain the facts for use in his next report to the state meeting; also that of other orchards visited by him this fall.

Mr. Barnes thought one trouble with orchardists was in planting trees too close, claiming that trees ordinarily on the outside of the orchards did best.

Mr. Taylor took exceptions to this, and called on Mr. Lowmiller and others, each of whom sustained the demurrer of Mr. Taylor.

Owing to train time, the meeting was interrupted, some leaving to catch their train.

Mr. Dutcher was asked to give a report of the recent American Pomological Society meeting in Kansas City. He gave an interesting account of the trip through the Ozarks and the splendid time had by the excursionists. He also paid a glowing tribute to the Missouri Valley society, past and present. We felt good that our lives have been cast with this society, and as our paper was on the subject, we may have something to say of this glory in the near future.

Resolutions of respect for the memory of our oldest member, Judge M. L. Thompson, was passed unanimously by a rising vote. Father Thompson, though quite infirm for several years, insisted on being present, although unable to hear or participate in our proceedings. It was ever a pleasure to greet him at our meetings. Edwardsville has been quite unfortunate, having lost three of her stalwart since our last meeting held in that place—Dr. Murphy and Judge Thompson by death, and W. D. Cellar by removal to California for his health. It is sincerely to be hoped he may recover his health and enjoy a long life of usefulness.

There was a show of some very fine apples o nthe tables—sorry we failed to get the names of the exhibitors.

"Otatop" Farm.

Wife and I, having received a very warm invitation from our friends, Edwin Taylor and wife, to tarry over night, and wishing to be at the unveiling of the monument to the memory of our late lamented brother of horticulture, Dr. Murphy, we accepted with pleasure.

Brother Taylor, of all men, is most fortunate in his location and holdings. His home is quite commanding, being on a high elevation overlooking the Kaw valley, which at this point is several miles wide, and facing south and west commands a view of many miles of scenery excelled by but few places. His house, grounds and everything are up-to-date. Lines of evergreens by the side of the driveway, through a grove of native trees to the top of the hill, when you are at "Otatop."

As all know, Mr. Taylor has the distinction of having long been the potato king. I take it that he, to do justice to the tuber that made him not only famous, but enriched him as well, did honor to it by spelling it backward. "Otatop" is indeed ideal. Flowers were in profusion. Everything that was conducive to taste and comfort is found here. A Christian gentleman, with a most lovable lady companion and affectionate children, with all the comforts of life, do you wonder that we should accept the courtesies of such people and surroundings? A more pleasant evening it would be impossible to pass than was ours with our friends at "Otatop."

FRANK HOLSINGER.

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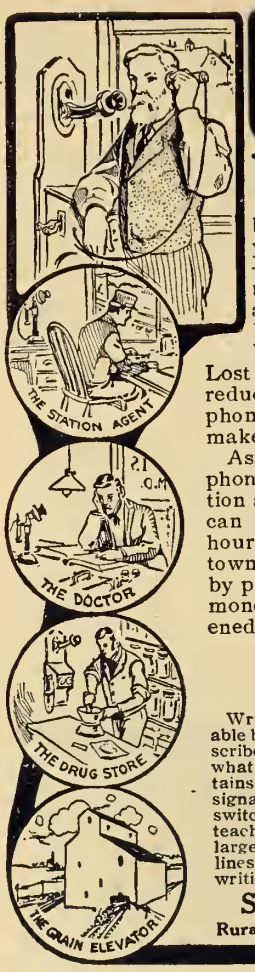

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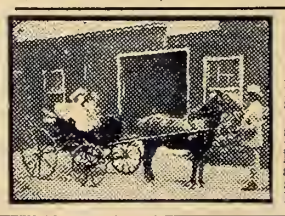

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Questions and Answers

Wants Boxes for Starting Seedling Plants.

Can The Fruit-Grower or any of its readers put me in communication with any firm which makes wooden plant boxes, for starting early tomatoes, melons, etc.? I want something about like a Hallock berry box, say four inches square and four inches deep for melons, and two inches square and two inches deep for tomatoes. Both sizes of boxes to be without bottoms, stapled ready for use; they could be stapled and still shipped in the knock-down. Who knows where such boxes can be secured..—F. G. S., Sarita, Cameron Co., Texas.

Home-Mixed Fertilizers.

A. C. D., Jefferson, Kansas, writes: "I am going to mix my own fertilizer this spring, and want to learn something about them. What is the value of nitrate of potash, as compared with sulphate of potash, and would the nitrate of potash be as good, according to analysis, as nitrate of soda and sulphate of potash? Second, where can I get bone meal the cheapest, freight considered, laid down here, and about what will it cost?"

Nitrate of potash, or saltpeter, contains ordinarily 12 to 13 per cent of nitrogen and 45 to 47 per cent of potash, or 250 pounds of nitrogen and about 900 pounds of potash per ton. It sells for about $95 per ton, which, if we calculate the potash to be worth 4½ cents, the usual price, will make the nitrogen worth 21.6 cents. Or if the nitrogen be figured at 15 cents, the usual price, the potash will sell for about 6 1-3 cents. In either case it will be seen that the cost is above what should be paid for these elements.

To supply 250 pounus of nitrogen in nitrate of soda would cost about $35.75, figuring nitrate of soda as worth $45 per ton. The 900 pounds of potash could be supplied in the form of sulphate of potash (which is worth about $55 per ton, 51 per cent potash), for about $47.50. This would take about 1,500 pounds of nitrate and about 1,800 pounds of suplhate of potash. The total cost would be $83.25 for the ton, against $95 for the nitrate of potash.

Still a cheaper form of potash is the chloride or muriate of potash, which is worth about $10 per ton less than the sulphate, and contains about 50 per cent of potash. The cost of potash in the sulphate as calculated above is 5.3 cents per pound, while in the chloride it is worth about 4½ cents.

These amounts are figured in tons for convenience and because these chemicals are usually quoted in ton lots. It should be said that unless the fertilizers are to be used for very intensive farming, as gardening or for the purpose of giving certain crops a quick start, the nitrogen had better be supplied by growing leguminous crops, as it will cost in this way not over 3 cents per pound, against 14½ to 15 cents in the nitrate of soda or dried blood.

The cost of ground bone depends upon its quality, the price running from $20 to $30 per ton. The packing house companies at Kansas City handle all grades and their prices practically control the cost in Kansas and Missouri. A good grade of steamed bone will cost $28 to $30 per ton laid down at any point within possibly 200 miles of Kansas City, while the poorer grades containing more impurity, more animal matter, and being as a rule less finely ground, may cost as low as $20. The better grades are usually the cheaper in the end.

M. F. MILLER.
Missouri Agl. Exp. Station,
Columbia, Mo.

Making Sugar from Beets.

Can you tell me how to make beet sugar? Also please state what machinery is needed to make the pulp; also for pressing and boiling. I planted some sugar beets, and want to make sugar for home use. Beets do well here.—W. G., Cuba, Mo.

Answer by M. S. Tidd, Bureau of Chemistry, Department of Agriculture, Washington, D. C.: It is inferred from this letter that the subscriber wants to know how to manufacture beet sugar on a small scale. I regret to say that this department can suggest no way in which beet sugar can be made in a cheap manner on the farm. The machinery is all very expensive, and such manufacture is profitable only when conducted on a large scale.

Curculio Injure Grapes.

I lost most all of my grapes this season by weevil or curculio working on the fruit. What is the remedy?

Answer by Prof. Stedman: There is no way of fighting the curculio except to pick all the diseased grapes and destroy them by burning or feeding to stock.

Worms on Currant Bushes—Raspberry Cane Borer.

(1) A small worm fed upon the berries of my currant bushes this past season. What is it, and what the remedy?

(2) My raspberry canes have been attacked by some sort of insect which causes the tips of the canes to dry up. Can you tell me what this is?

Answer by C. R. Crosby, Missouri Experiment Station: Currants are frequently injured by the work of the gooseberry fruit worm. The small moth lays the eggs on the surface of the berries, from which a small larva hatches. It soon burrows through the skin of the fruit and eats out the inside. As soon as a berry is destroyed, it passes into an adjoining berry. Sometimes several berries are fastened together by a single worm. After the fruit ripens, the worm drops to the ground, and there goes into the pupa stage, under leaves and rubbish. Of course it is impossible to destroy the larva by poisoning them, as they obtain all their food from the inside of the berry. In a small garden it might be practicable to pick off the diseased berries and destroy them. In larger patches, if chickens are allowed to run in them after the fruit has been gathered, they will scratch up and destroy most o fthe pupae, thus preventing their injury the following year.

(2) Raspberry bushes are frequently injured by the work of the raspberry cane borers. The adult beetle lays eggs in the green shoots, placing a transverse row of punctures above and below the egg. This acts as a kind of girdling, causing the cane above to wither. On hatching, the young larva eats its way into the cane and down through the pith. As soon as the wilting of the tips become apparent, they should be cut off and burned. If this operation is deferred until later, it will be necessary to remove the whole cane, as the larva will then be found near the ground.

Wants Information Concerning Pear Blight.

Does a hard winter cause pear blight? My five-year-old trees blighted badly this season. They were well sprayed twice, once before the first leaves put forth, with full-strength Bordeaux; the second time when the first leaves began to turn black from the blight. I have cut out all branches attacked and burned them, and painted the wounds with red lead and oil. I even pick off all leaves as soon as they begin to turn black. Yet in spite of all this the blight goes right on, attending strictly to business. I thought that possibly the hard winter injuring the immature wood made the trees more subject to blight than they would have been the case had last year's wood been well matured. Last season all trees made a very heavy growth.—J. N. S., Shelbyville, Tenn.

This correspondent will find some of his questions answer in the article in November number. Hard winters do not cause pear blight, but trees which are making a rank growth, as was shown in that article, are more susceptible to the disease. Spraying with Bordeaux mixture will not control the disease, which works in the sap of the tree. Pear blight is one of the hard propositions which have not been worked out as yet. With the work which is being done on the disease, however, it is likely that this problem will be solved in the near future. The writer has just had an experience using anti-toxine for diphtheria; this preparation, injected into the body, counteracted the effect of the poison from the disease. May it be that some day pear blight, a bacterial disease, will be combated by introducing into the circulation—the sap—some element which will be hostile to the germs of the disease?

Using the Dust Spray in Winter.

Can any one tell me whether using the dust spray in winter time, say in January or February, while trees are dormant, will control the leaf curl of peach trees? Heretofore we have controlled this fungus by using liquid Bordeaux while trees are dormant, but some of our orchard lands are so rough and hilly that we cannot get over them with liquid outfits. Hence we want to know about the effectiveness of the dust formula at this season, and the proper formula to use. Our Georgia Experiment Station has not tried this method.

I wish to state for the benefit of others that I used the dust spray last summer to prevent brown rot of peaches, and came near ruining my peach trees. The injury to the trees is very great. They were not only nearly defoliated, but nearly all the small bearing limbs were killed. I used the general formula, as recommended by the Dust Spray Mfg. Co., Kansas City, Mo. Luckily I used it on only about 2,000 trees. The general formula consists of twenty-five pounds of sulphur, five pounds of paris green and five pounds of "Sal Bordeaux" to 200 pounds of dry-slaked lime. I consulted with the manufacturers and used their machine, and they assured me this dust would not injure the tenderest foliage, but my experience was disastrous. I want to know the experience of someone who has used the dust to control leaf curl. How about dust spraying when trees are dormant?—W. T. C., Rome, Ga.

Who has had any experience along this line? Advocates of the dust process claim the dust adheres to the foliage, owing to the minute hairs on the leaves, but of course this will not do any good while the leaves are off the trees. It may have been the paris green in the formula which was used was responsible for the burning of the foliage. No paris green was needed to control either leaf curl or brown rot. Who has used this formula on peach trees, without the paris green added?

Time to Plant Peach Seed, Apple Seed, Etc., Etc.

Please give instructions for planting apple seed, peach seed, English walnuts, pecans, etc. What time of the year should each be planted, and how should the seeds be handled?—J. R. H., Artesia, N. M.

Answer by Dr. Whitten: Seeds of apple, peach, nuts, etc., should be frozen over winter in order to crack the coverings so that they will sprout in the spring. If they are kept dry over winter and planted in the spring, most of them will fail to germinate until the following year. This freezing may be accomplished in either of two ways: (1) By planting the seeds in the fall in nursery rows. The drawback to this method is that some of the seeds are likely to wash out of the ground, may be eaten by animals or lost in some other way. (2) The most common way

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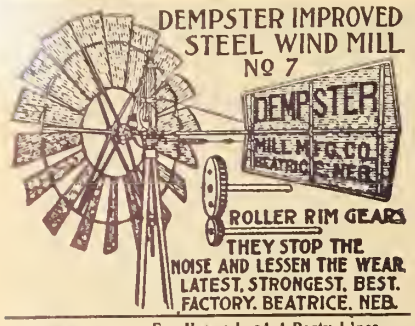

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is to freeze the seeds in a box of soil over winter and to plant them early in the spring. Any ordinary box may have holes bored in the bottom so it will drain perfectly. A layer of sand or well dried soil may be put in, a layer of seeds spread on this, then another layer of soil and seeds, and so or until the box is full. This mixes the seeds with the soil, which should be kept moist, but not wet, during winter. A convenient way is to set it in a well drained location flat on the ground on the north side of a building where it will stay frozen. In very early spring the seeds should be planted out before they begin to sprout in the box. They may be planted in the nursery rows, soil and all.

Cherry Trees Bloom But Do Not Bear.

I have on a farm I have just bought, three Royal Anne cherry trees that do not produce fruit, although they bloom as freely as the rest of my trees. Do you think they need another variety to fertilize the blossoms, and if so, can I graft in branches from trees that produce fruit? The man who was on the place the last two years cut branches from other trees when in full bloom and placed them in these trees, but this had no effect upon the results. Trees are fourteen years old; nice, large, healthy trees. Can I graft twigs from other varieties of cherries? Is it possible my trees need pruning? They tell me here that cherry trees should not be pruned. —C. K., Salem, Oregon.

Answer by Dr. Whitten: I do not know personally whether the Royal Anne cherry is capable of self-fertility or not. Some of the cherries on our grounds have proven to be incapable of self-fertility in most years. Since the one in question does not fruit after producing bloom freely, it would seem advisable to take steps to secure pollen from some other variety in order to see whether the difficulty is self-sterility. Most varieties of the same general type which blossom at the same time may be either budded or grafted into the main limbs. If budding is to be done, some of the leading branches should be cut back slightly in early spring, a single vigorous whip of new growth be allowed to grow from the point to which it is cut back, and this new growth budded in August or September. Grafting will succeed well provided it is done after the leaves of the cherry begin to reach the size of the thumb nail. The scions inserted, however, should be kept dormant until they are inserted. The wounds should be carefully waxed over and adjoining twigs should be kept off so they will not overshadow the scions inserted.

Lye for Trunks of Fruit Trees.

Will lye made from the various commercial forms of that product injure the bark of young, growing fruit trees? If not, when is the best time to apply it, and what strength of the solution is safe to use?—A. W. R., Booneville, Ark.

Answer by Dr. Whitten: Lye will not injure the trunks of trees as it is usually applied in tree washes. It is usually included in the lime tree washes at the rate of about one pound can to five gallons of the wash.

How to Keep Worms Out of Raisins.

Can you advise me how to keep worms out of raisins?—W. H. I., Barstow, Texas.

Answer by Prof. Stedman: You can keep worms out of raisins by killing them as often as is necessary in the following way: Place the raisins in a sack or box that can be closed up tightly, and saturate a rag with carbon bisulphide and place this on top of the raisins and close up the sack or box, leaving it closed for three days. It may then be aired out and the raisins will not be injured, but the insects be killed. This process may be repeated as often as is necessary.

Wood Ashes About Tree Trunks.

Last June The Fruit-Grower published an excellent article on the work of the peach tree borer, and gave formula for making a whitewash which I shall try on my trees. However, I have been making an experiment with unleached wood ashes mounded up several inches above the collar of the trees; I have applied as much as a gallon of the ashes per tree, and have suspended this work, pending receipt of advice as to whether or not this quantity is too great. Will the unleached ashes, in this quantity, injure the trees?—J. H. G., Ft. Smith, Ark.

Answer by Prof. Stedman: Unleached wood ashes placed about the trunks of peach trees has a tendency to keep peach tree borers from about the base of the trees, but but it will not prevent their getting higher up on the trunk or in the main limbs. I have never known of peach trees being injured by this method, and it is one of the oldest methods for combating the insect mentioned. I can conceive that by applying an undue quantity about the tree it might injure the same, but I do not think that a reasonable amount has ever been known to cause any injury whatever.

Pecan Growing in Illinois.

(1) Will Century pecans, advertised by Texas Seed Pecan Co., or other varieties from the South, grow successfully in this part of Illinois, twenty-five miles southeast of St. Louis? Wild pecans grow around here, but they are very small. (2) Is it better to bud or graft pecans, and at what time of year should this be done in this locality? (3) What method of budding or grafting should be used? Same as fruit trees?—A. G., Freeburg, Ill.

Answer by E. A. Riehl, Alton, Ill.: The so-called Century pecan advertised by the Texas Pecan Co. is by well-posted Southern growers pronounced to be none other than Columbian, also called Rome, Pride of the Coast and by other names. It is not considered a desirable variety; it is large, but does not bear or fill out well. I would not advise anyone who lives as far north as St. Louis to spend much time or money on any of the improved Southern pecans. They have been tried a number of times by different persons, but as yet no one that I know of has succeeded in producing a nut. I myself procured several varieties to test in the experiment stations of the Illinois State Horticultural Society. All but one died the first cold snap in the fall after having made one season's growth. In a few years (15 to 20) we hope to be able to say definitely what we can expect of the Southern pecan this far north. While our native pecan is not as large as the better varieties of the south, there are some that are very much better than the common run as we see them on the maket. I have succeeded in finding some that are well worth propagating. Some of them are of good size, crack well, and are regular bearers. Pecans can be grafted and budded. But not with the ease that fruit trees are. The best of propagators make a large percent of failures. Cleft or bark grafting succeeds about as well as any other method, if the additional precaution is taken to cover the scion with the grafting wax that is used to close the union against the atmosphere. Scions should not be cut long before the grafting is to be done. Pecans can also be budded. Any one wishing to try budding, had better send to the department of Agriculture at Washington, D. C., for a bulletin on the subject, which explains the method fully and gives illustrations making the subject very much plainer than I could. Any one knowing of any native nut—pecan, hickory, walnut, hazelnut, or butternut —that is of extra good quality will do me a favor by letting me know about it and sending samples. I am sure there are trees of all these nuts somewhere in this country that are good enough to deserve being propagated and disseminated. I am making this matter a study and any one who can contribute any information along this line is cordially invited to do so.

Michigan Horticultural Society.

Just as the last forms for December Fruit-Grower are closing we received program of meeting of Michigan State Horticultural Society, to be held at Grand Rapids, Dec. 5 to 7, in conjunction with the Grand River Valley Horticultural Society and the Grand Rapids Fruit-Growers' Association. A splendid program has been arranged for this meeting, including the following papers and discussion of the same:

"Planting and Care of Peach Orchards," Horace G. Welch, Douglas.

"Peach Culture in Ohio," Hon. Wm. Miller, Gypsum, Ohio.

"Lessons from the Past Season," Benton Gebhardt, Hart.

"Future of Horticulture in Michigan," Supt. T. A. Farrand, South Haven.

"Changes in Spraying Formulas and Methods," Prof. L. A. Taft, M. A. C.

"Power Sprayers," Power furnished by—(a) Gas Engine—D. W. Wadsworth, Bangor. (b) Steam Engine—Edward Hutchins, Fennville. (c) Sprocket gear to wagon wheel—T. L. Gooding, Ganges.

"Potato Spraying," (Illustrated), C. A. McCue, Michigan Agricultural College.

"New Remedies for the San Jose Scale," Prof. L. R. Taft, M. A. C.

"Some Recent Orchard Observations in Northern Michigan," W. S. Palmer, Kalkaska.

"The Canadian Fruit Marks Law," Hon. Alex McNeill, Chief of Fruit Division, Ottawa, Canada.

"Out of the Past," A Poetical Tribute, E. L. Keasey, South Haven.

"Influences that Decrease the Set of Fruit," (Illustrated), Prof. S. W. Fletcher, M. A. C.

"Orchard Poultry," E. P. Simpson, Holland.

"Our Fruit Growing Competitors," Prof. A. G. Gulley, Storrs, Conn.

"Commercial Orcharding," Hon. Wm. Miller, President Board of Agriculture, Gypsum, Ohio.

Reports of President, Treasurer and Secretary.

Annual Business Meeting and Election of Officers.

"Breeding Potatoes and Tomatoes," A. G. Craig, Michigan Agricultural College.

"Some Recent Pomological Tendencies," Wm. A. Taylor, Pomologist in charge of Field Investigations, U. S. Department of Agriculture, Washington, D. C.

"A Chapter on Lawns," Dr. W. J. Beal, M. A. C.

"Marketing of Fruit," from the standpoint of the—

(a) Grower—Chas. B. Welch, Douglas.
(b) Central Packing House—C. F. Hale, Shelby.
(c) Dealer—H. J. Vinkemulder, Grand Rapids.

"The Modern Trend of Education," President J. L. Snyder, M. A. C.

Annual Offering of the Society's Poet Laureate, Prof. Asa. W. Slayton.

"Planting the Home Grounds," Prof. S. W. Fletcher, M. A. C.

"Small Fruits and Their Care," Frank Warner, South Haven.

"Selecting Nursery Stock," Prof. S. W. Fletcher, M. A. C.

"The Orchard as a Commercial Accompaniment of the Farm," William H. Anderson, Grand Rapids.

"The Forestry Situation," Hon. Chas. W. Garfield, Grand Rapids.

"Lessons from Pennsylvania Forestry," Prof. James Satterlee, Lansing.

"Cover Crops and Commercial Fertilizers for the Peach Orchard," Chas. H. Hilton, Benton Harbor.

"Orchard Cover Crops," Hon. C. J. Monroe, President State Board of Agriculture, South Haven.

"The Ministry of Beauty," Mrs. M. E. Campbell, Grand Rapids.

"Effects of Stock on Varieties," Prof. A. G. Gulley, Storrs, Connecticut.

"Fruits at the Experiment Station," Supt. T. A. Farrand, South Haven.

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Program of Meeting of Illinois Horticultural Society.

The meeting of the Illinois State Horticultural Society, which will be held at Champaign, Dec. 12 to 15, will be the fiftieth annual meeting of the organization, and a special program has been prepared to celebrate the event. Secretary Bryant is very anxious that the old members of the society be present, for at least one meeting will be devoted to reminiscences, and the social side of the meeting will be very prominent. The day sessions will be held in the Agricultural building of the University of Illinois, and the evening sessions in Elks' hall, Champaign.

The first session will be held Tuesday evening, Dec. 12, and will include the singing of "America," "Illinois," "Auld Lang Syne," and other old songs; a paper by Prof. J. C. Blair, "The Apple Crop of 1905," and reminiscences by members of "the old guard."

The remainder of the program, for the other sessions, follows:

Wednesday, 10:00 a. m.

Prayer.
Officers' reports.
"Cane Fruits," L. G. Hubbard, Urbana.
"Strawberries," C. E. Perseis, Farina.
Question box.

Wednesday, 2:00 p. m.

(Anniversary Program.)
"History and Biography, from the Formation of the Society to 1876," Arthur Bryant, Princeton.
"History and Biography, from 1876 Up to the Present Time," T. E. Goodrich, Cobden.
"History and Development of Fruit Growing," E. A. Riehl, Alton.

Wednesday, 7:30 p. m.

"Women and Horticulture," Mrs. Emma Hey, Dixon.
"Vegetables and Their Dietetic Value," Mrs. Nora Burt Dunlap, Savoy.
"Advance of Ornamental Horticulture in the State," Dr. T. J. Burrill, University of Illinois.

Thursday, 9:30 a. m.

Prayer.
Report of awarding committees.
"Vegetable Growing and Its Development," Jonathan Periam, Chicago.
"The Evolution of Transportation and Marketing of Fruits," B. F. Smith, Lawrence, Kansas.
"The Development of the Utilization and Preservation of Fruits," H. M. Dunlap, Savoy.

Thursday, 1:30 p. m.

"The Life Histories of Certain Fungous Pests of the Orchards," Dr. T. J. Burrill.
"Tomato Culture," John W. Lloyd, University of Illinois.
"Condensed Report of Experiment Stations," E. A. Riehl, director.
"Fifty Years' Progress in the Practical Control of the Insect and Fungous Pests of Illinois Horticulture," Dr. S. A. Forbes.
Question box.

Thursday Evening

Will be devoted to social affairs, with a banquet at the Beardsley.
Assembly at 7:30 p. m. in hotel parlors. Geo. J. Foster, J. W. Stanton, J. L. Hartweil, committee in charge.

Friday, 9:30 a. m.

Prayer.
Reports of committees.
Election of officers for 1906.
Locating place of next meeting.
"Observations on Cherry Growing Under Prairie Conditions," Prof. A. T. Erwin, Iowa State College.
Remarks by visiting delegates.
"Spraying Experiments," Prof. C. S. Crandall, University of Illinois.
"Report on Orchard and Nursery Inspection," Dr. S. A. Forbes, state entomologist.
Reports of delegates to other state meetings.
Resolutions and unfinished business.

Kansas Horticultural Meeting.

The thirty-ninth annual meeting of the Kansas State Horticultural Society will be held in the rooms of the society, at Topeka, on Dec. 26, 27 and 28. The last session will close at 4 p. m., thus allowing the members to leave at 5 o'clock for Kansas City, Mo., where the annual meeting of the Missouri Society will open at 7:30 p. m. The program for the meeting follows:

Tuesday afternoon, Dec. 26, the session will be devoted to reports of trustees.

Tuesday, 7:30 p. m.

Welcome address, by Governor E. W. Hoch.
Response, by President F. Holsinger.
"The Ideal Horticulturist," Edwin Snyder, Oskaloosa.
"The Ideal Home of the Horticulturist," Edwin Taylor, Edwardsville.
"The Ideal Wife for a Practical Horticulturist," Mrs. Fannie Holsinger, Rosedale.

Wednesday.

Reports of officers and committees.
"The Ideal Apple and How to Grow It," A. Willis, Ottawa.
"The Ideal Plum and How to Grow It," Prof. Albert Dickens, K. S. A. C.
"The Ideal Grape and How to Grow It," A. L. Entsminger, Silver Lake.
"The Ideal Strawberry and How to Grow it," Frank W. Dixon, Holton.
"The Ideal Raspberry and How to Grow It," A. H. Griesa, Lawrence.
"The Ideal Blackberry and How to Grow It," John Brazioton, Jr., Wathona.
"The Ideal Occupation for a Retired Life," Geo. W. Moffet, Lawrence.
"The Ideal Front Yard of a Country Home," Dr. Geo. P. Lux, Topeka.
"The Life Histories of Some Fungous Pests of Orchard Trees," Prof. T. J. Burrill, Illinois Agricultural College, Urbana, Ill.
"Ideal Horticultural Education," Prof. J. C. Whitten, Missouri Agricultural College, Columbia, Mo.

Thursday.

Reports on exhibits and new members.
"Notes on Fruit Breeding," Prof. N. E. Hansen, U. S. Exporiment Station, Brookings, S. D.
Balance of this morning will be given to discussions of plant breeding, spraying, outlook for the future, and other important querics, all at the discretion of the president.
Bring on your deep questions and heavy troubles.
Afternoon session, Vice-President W. F. Scheil in the chair.
"Relation of Experiment Stations to the Economics of Horticulture," Prof. S. A. Beach, Agricultural College, Ames, Iowa.
Unfinished business.
Discussions on growing potatoes.
Discussions on growing sweet potatoes.
Discussion on growing field beans.
Report on obituaries.
Report on final resolutions.

Program of the Missouri Meeting.

The forty-eighth annual meeting will be held Dec. 28, 29, 30, in Kansas City, at the Coates House. The railroads give a rate of one fare for the round trip during this time and the hotel grants the rates of $1.00 on European and $2.50 on American plan. Premiums amounting to $100.00 will be awarded on apples. Send your exhibit to the Secretary, care the Coates House. At each session a professor of horticulture will give a lecture on his special subject. Dr. T. J. Burrill of the Illinois Agricultural College will speak on "Recent Facts Concerning Fungi in the Orchards." Prof. S. A. Beach, of Ames, Iowa, talks on the "Management of Soils in Apple Orchards." Prof. N. E. Hansen, of Brookings, S. D., is chiefly interested in breeding of fruits for hardiness and he will give some notes on this subject and also an illustrated lecture on his trip through Russia.

From our own State University we will have Dr. H. J. Waters, Dean of the Agricultural College, to talk on "The Food Requirements of Bearing Orchards;" Dr. J. M. Stedman will have a stereopticon lecture on "Insect Life;" Prof. Howard S. Reed of the Department of Botany is to give an interesting and practical paper as to "Plant Physiology Applied to Practical Problems." The two evening sessions, with the exception of the special illustrated lectures before mentioned, will be devoted to the study of ornamentals with papers by the following:

R. G. Rau, Superintendent of Parks, St. Joseph, Mo.; Sid. J. Hare, Landscape Architect, Kansas City, Mo.
"Succession of Flowers for a City Lot," Miss Adelaide Utter, Kansas City, and H. J. Weber, florist, St. Louis.
"Seed Flowers," Phil S. Creager, Kansas City; C. A. Chandler, District Supt. Parks, Kansas City, Mo., and Mrs. T. Lee Adams, Kansas City, Mo.
Friday morning will probably be given to Strawberries, with papers as follows:
"Picking and Marketing," G. T. Tippin, Nichols, Mo.
"Planting and Growing," R. H. George Pierce City.
"Mulching," J. T. Jackson, Chillicothe.
"Varieties," H. S. Wayman, Princeton; J. P. Sinnock, Moberly; F. J. McNallie, Sarcoxie.
Friday afternoon will have the following:
"Study of Adaptability," W. T. Flournoy, Marionville.
"Some Mistakes in Orchards," T. C. Love, Seymour.
"No. 2 Apples," T. H. Todd, New Franklin.
"Evaporating," W. H. Benedict, Richards, Mo.
"Pruning," N. F. Murray, Oregon, Mo.
Saturday morning will be devoted to other small fruits.
"Vineyards," H. Meyer, Bridgeton; Ed. Kemper, Humansville.
"Gooseberries and Raspberries," Dr. Z. M. Hampton, Centralia.
"Troubles and Remedies in the Orchard," C. H. Williamson, Quincy, Ill.
Saturday afternoon:
"Peaches," L. V. Dix, Jefferson City; A. L. Zimmerman, Weatherby; L. C. Wilson, South St. Joseph.
"Cherry Growing," J. H. Darche, Parkville.
"Plums," R. J. Bagby, New Haven; J. E. May, La Plata; C. W. Steiman, Dalton.

This program is outlined so as to give us the greatest amount of instruction and information in the shortest time and most concise manner. To get the most out of it for yourself and to assist others the most, it is necessary:

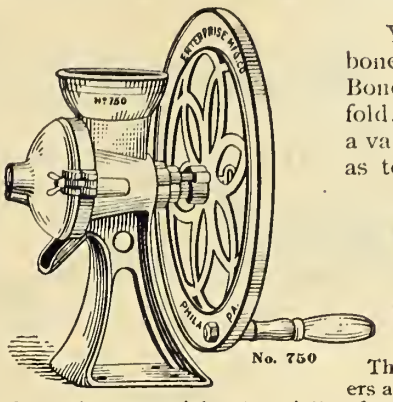
1st. That you come.
2d. That you ask questions.
3d. That you give your own experiences.

In view of the number of men prominent in horticultural colleges and work that are to be with us, it will pay you to be on hand to hear them and meet them.

We expect this to be the very best meeting this society has ever held and you should be here and profit by it.

L. A. GOODMAN, Sec'y.
4000 Warwick.
Kansas City, Mo.

Grind Your Own Poultry Food



No. 750

You can put a few cents' worth of dry bone, old shells or corn into an Enterprise Bone Mill, and it will increase in value tenfold. There's no food so good for poultry as a variety, nor a way to save money so easily as to grind your own poultry food, using

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Bone, Shell and Corn Mills

These mills are good general mills for all farmers and poultrymen, being strong, compact, made of excellent material. Especially adapted to grinding **dry** bones, shells, corn, roots, bark, grain, chicken feed, etc. Bone meal fertilizer can be made with them. Capacity 1¼ bushels of corn per hour. Weight 60 lbs. Mill shown in cut $8.50. Look for the name "Enterprise." Full information on request.
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BIG BARGAINS! WHILE THEY LAST

Genuine Snaps for Cash Buyers | We bought entire stock and machinery of the "South American" Asphalt Works the "U. S." Wire & Fence Factory, and the "Illinois" Steel Tank Plant, and to reduce our surplus stock, we offer prices actually regardless of cost. COMPARE OUR PRICES WITH OTHERS AND NOTE SAVING

		Special Cash Sale Price	Usual Retail Price
ROOFING	120,000 Rolls of "Star" Asphalt Roofing, guaranteed for 10 years, 108 sq. ft. in each roll, with capnails and cement, weight 65 lbs. Easy to lay. Needs no painting. Price complete, per roll	$1.75	$ 3.50
	30,000 Rolls of "Boston" genuine "Rubber-Oil" Roofing. Absolutely best rubber roofing, in rolls of 108 sq. ft., with capnails and cement, weight 38 lbs. Price per roll, complete	$1.80	$ 4.00
	12,000 Squares No. 28 Gauge Corrugated Painted, full weight, Steel Roofing, 70 lbs. per 100 sq. ft. Sheets, 4 ft. to 10 ft. long	$1.95	$ 3.60
	We make all styles of Steel Roofing and Siding, Eave Trough, etc.		
FENCE	450,000 Rods of "U. S." Spring Steel Fence. Square Mesh, thoroughly galvanized, extra heavy wires, (see weight below)—Best and strongest made.		
	20 inch high, "U. S." Spring Steel Fence, 6 line wires, wt. 6½ lb. per rod at	$0.20	$ 0.30
	26 inch high, "U. S." Spring Steel Fence, 7 line wires, wt. 7½ lb. per rod, at	.22	.33
	32 inch high, "U. S." Spring Steel Fence, 8 line wires, wt. 8½ lb. per rod, at	.24	.36
	39 inch high, "U. S." Spring Steel Fence, 9 line wires, wt. 9½ lb. per rod, at	.27	.40
	47 inch high, "U. S." Spring Steel Fence, 10 line wires, wt. 10½ lb. per rod, at	.30	.45
	55 inch high, "U. S." Spring Steel Fence, 11 line wires, wt. 11½ lb. per rod, at	.33	.50
	58 inch high, "U. S." Spring Steel Fence, 12 line wires, wt. 12½ lb. per rod, at	.36	.54
	250,000 lbs. Galvanized Barbed Wire, price per 100 lbs.	$2.30	$ 3.00
TANKS	"UPON HONOR" Full Weight, Galvanized Steel Tanks, Made Heavy, Lasting, Substantial, thoroughly braced, and best material.		
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	Our 6 bbl. Oblong Round End Tank, 2 ft. wide x 2 ft. high x 6 ft. long, at	$4.10	$ 6.50
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Our Strawberry Plants

are the kind that pay to plant. Our common sense catalog is the kind that will pay every fruit-grower to read. It does not tell you great stories about immense crops grown by new varieties, but it tells you of about eighty varieties of strawberries and which is best for you to plant. Our supply of plants is as large or larger than we ever grew and the quality is good. We take particular pains to have everything true to name and unmixed. We also have a very large supply of Blackberry and Raspberry plants of all the leading varieties. Our new common sense catalog will be ready to mail about January 1st. Write for it now. It is free. Address

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UNTIL YOU INVESTIGATE "THE MASTER WORKMAN," a two-cylinder gasoline engine superior to all one-cylinder engines; revolutionizing gas power. Costs Less to Buy and Less to Run. Quickly, easily started. No vibration. Can be mounted on any wagon at small cost—portable, stationary or traction. Mention this paper. SEND FOR CATALOGUE. THE TEMPLE PUMP CO., Mfrs., Meagher & 15th Sts., Chicago. THIS IS OUR FIFTY-SECOND YEAR.

Gardening Department

Winter Gardening in Hotbeds.

Several readers have written to me asking my advice about growing radishes, lettuce, onions, etc., in hotbeds for winter sales. Now, to tell the strict truth, I have never tried enough myself to be very good authority, but I have seen it tried a good many times, sometimes with success and sometimes with failure. It is pretty risky business, but if you can make a hit with it, it pays well. To do a real good job at it, you should have a hothouse instead of simply hotbeds, but hothouses cost lots of money, and sometimes very good results can be had from the hotbeds. Of course you must use glass, as you will want all the light you can get. Make the beds as tight as possible and bank them up well. Be careful not to get the plants too thick in the bed, as they are sure to be spindiing and no account if you do. They must have plenty of room and plenty of light. If you have good luck and don't get caught in a freeze, you can get good prices in the winter. One good way to keep the heat in the beds and guard against frost is to have some straw mats made to cover the glass at night.

That Strawberry Bed Again.

Time to get the ground ready for that strawberry bed you are going to set in the spring. Manure the ground well and plow it deep. Be sure you lay out big enough place. If it is where you cannot get in with a plow, spade it up. You can probably do that yet before freezing if you hurry. Let the ground lay rough through the winter to catch the snow, and then in the spring as soon as the frost is out, work it down nice and smooth and set the plants. Don't take plants from an old bed either, but get fresh young plants with long fibrous roots. Old plants are no account whatever.

Dig and Store the Parsnips.

If you have not already done so, better dig the parsnips and store them in loose soil in the ceilar. Then in the winter when you get hungry for a mess of them you can get them easily, where if you left them out in the garden you would have to wait till the ground thawed out in the spring. If you expect to market them you will almost have to dig and store them so you can have them to sell through the winter. If you have to wait till spring, by the time you can dig them they are beginning to grow, and are soon worthless. Don't neglect to pack them well in earth or they will wilt and be tough and stringy.

Good Prices for Garden Crops.

Garden crops of all kinds are bringing remarkably good prices, and this is especially true of potatoes, cababge and onions. All are scarce and seem to be going higher. The snake scare of a year ago discouraged the gardeners putting in much cabbage this year, and the result was that good late cabbage has been a scarce article all over the country this fall. It will be worse as winter progresses. The man who has a good supply of cabbage on hand now has something nearly as good as a gold mine. Potatoes too seem to be scarce everywhere, and by spring will be on the top shelf. I was foolish enough to sell some eating potatoes for 50 cents in October, but I wish now that I had not. I pretty near had to sell them, though, for lack of cellar room. By spring I look for good eating potatoes to be worth a dollar, and seed considerably more. It looks as though onions, good sound ones, would be worth even more than potatoes.

The Seed Situation.

One thing the gardeners have to be thankful for is that seed of all principal garden crops, except onions, will be plenty and of good quality. Onion seed is the only exception, and it will be all right in quality, but the quantity is sadly short. On many of the leading varieties there is certainly not enough to go around, and good new crop seed will be worth good money. Those expecting to put out a considerable acreage of onion seed next year should get their seed early, and test it before planting. This testing is always a good plan, but it will be especially important this year on onion seed, as there will be so much danger of old seed being run in at the prevailing high prices, and old onion seed is practicaliy worthless.

How to Test Seeds.

Seeds of all kind may be easily tested in the winter by putting a small sample of the seed between folds of wet blotting paper and putting it where it will keep moist and warm. A good way is to put the folds of wet blotting paper containing the seed into a tight tin box or a cigar box with the lid tied down, and place it on a shelf behind the stove, or in some other place where it will be warm. If the madame has house plants, put the test box with them, and it will be sure to have just the right heat. In about four or five days you can unwrap the paper and find the seeds nicely sprouted. It amounts to the same as planting them in dirt, but in the paper they can be more easily seen and examined.

All reputable seed men are supposed to test all seeds before sending them out, and I think that most of them do; but it won't hurt a bit to take a test fourself and then you will know for dead certain that the seed is good, and if it fails to come you will know that the fault was in the manner of planting.

Broad Beans, or English Limas.

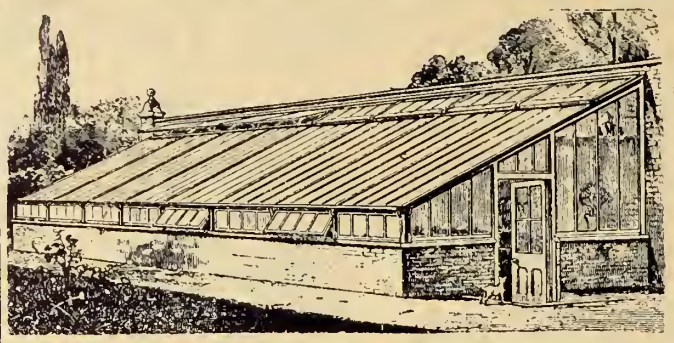
For two or three years in the trial grounds I have been growing small quantities of the English broad beans. They are an entirely different race of beans from anything we grow here, being much hardier and able to stand as much cold as peas. In England and Germany limas will not grow at all, and these beans take their place. They grow in bush form, standing up quite rank and stiff. The pods are very large and heavy, and contain generally three very large beans. They are shaped somewhat like a lima, but larger and with the eye on one end. They are eaten shelled same as limas or other shell beans. They should be planted same time as early peas, and tended the same. It seems to me they are a good thing, as they yield heavily and are good eating. They are a staple article of diet in the old country. I have ordered a supply of seed and will be glad to send a few seeds to any of The Fruit-Grower readers who care to experiment with them. As the seed is imported, it may not be here for a month yet.

Hops as a Weed.

There is one drawback about mulching. If you get some kind of weed seeds in, you have a hard time getting them out, for they will grow there in the mulch, and you have to go in and pull them by hand or cut them out with a knife, as hoeing or cultivating is impossible. I mulch my asparagus bed instead of cultivating, and some way I got some hop seeds in there, and they are about to take the whole place. They come up everywhere and run for twenty or thirty feet. It is as bad a weed as I ever saw. I have heard the definition somewhere that a weed is a plant out of place, and this seems to be a clear case. I had the same experience with red clover in a strawberry bed. It came in with the muiching, and I soon had more clover than berries, so that I had to plow up the bed.

Time Yet to Set Bulbs.

There is time yet in most places to set out fall bulbs, such as tulips, hyacinths, crocus and narcissus. They



Horticultural Buildings

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Geo. B. Clementson, Esq., of Lancaster, Wis., writes: "The Premier Greenhouse is the most attractive proposition for the plant lover I have ever seen."

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APPLE SEEDLINGS—Nebraska and Kansas grown.
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FOREST TREE SEEDLINGS—Complete stock.

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Our Catalog Free
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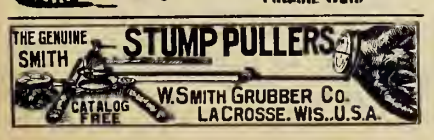

have to be set in the fall and then will bloom very early in the spring. Every spring when they are in bloom there are lots of people wanting to get bulbs and set them out, but it is impossible at that time of year, and by fall, when the right time comes, they have forgotten it. Now, if you wish next spring you had some tulips and hyacinths, don't say I didn't warn you in time. Set the bulbs just like onions, in any good soil, not too wet.
HENRY FIELD.

Time to Dig Potatoes.

I like some things in The Fruit-Grower very much, but differ from the editor of the garden department, if he leaves his potatoes in the ground until late. I lived in Kansas twenty-two years and have lived in Missouri two years and a half; have raised potatoes for thirty-five years and in Illinois, where I lived for fifteen years, it might do to leave potatoes in the ground until late, but in Missouri and Kansas I find that as soon as the vines are thoroughly dead the tubers should be dug. It has been my experience in both states that when the ground becomes thoroughly heated it cooks or scalds the potatoes, and if rains come they either make a second growth or rot.

I store my potatoes on a board floor in the cow barn; this floor is one foot from the ground, so it is perfectly dry. I cover them with pieces of carpet to keep them dark, and am now selling my crop, which was dug September 1, at 15 cents per bushel more than is being paid for late-dug potatoes. In fact, many growers here have not yet commenced to dig their tubers, and the ground is very wet and cold. I feel for them, for it will be so amusing to pick potatoes out of the mud. And I cannot see where the tubers will be benefited, either.
IRA MOORE.
Bourbon, Mo.

Practical Demonstration of Spraying for San Jose Scale.

The Pennsylvania Department of Agriculture has arranged a series of public orchard meetings, at which a practical demonstration will be given of spraying for San Jose scale. Prof. Surface, entomologist of the department, writes that the work will be carried out in the following manner:

"A meeting will be arranged by the Department of Agriculture in some orchard in the neighborhood where such a demonstration is desired. On the day appointed an agent of the department will be present, and will prepare and apply several of the most successful mixtures used in spraying for the San Jose scale, explaining the method of application. While the spraying is being done the operator will call the attention of his audience to those points of most importance in the work. At no place will a large number of trees be treated, as the agent will spend only one day in each place, and the necessity of preparing the several mixtures will limit the time of application to a few hours. This work is designed to be educational rather than the actual work of destroying San Jose scale in a given area or orchard, and it is hoped that with this instruction the owners of trees will be able to continue to keep the scale in check on their properties. After the actual work of spraying the agent will give a short talk on the insect pests and diseases of fruit trees, with the methods of combating them.

"It is proposed to hold meetings in all localities from which applications are received, provided it be known that the San Jose scale is present in that vicinity. The only conditions necessary to secure such a demonstration being:

"1. That the orchard in which the proposed demonstration is to be held be infested with the San Jose scale.

"2. That such orchard be easily accessible.

"3. That it contain at least 20 trees, not larger than a full grown peach tree.

"4. That no demonstration be held within 5 miles of one previously arranged.

"5. That some person in the community actively co-operate with the agent in properly advertising the meetings.

"6. That the owner of the orchard be willing that such meeting be held on his premises, and take upon himself the obligations stated in the enclosed circular.

"The reason that small trees are wanted is that the demonstrator, in order to travel from place to place, will of necessity carry light apparatus, which will not be powerful enough to reach the tops of the highest apple trees. Advertising matter and all material used, as well as the apparatus, will be furnished. The work will begin November 1st and continue while the weather is suitable, and until it becomes too inclement for outdoor work.

The New York Grape Season.

The season of 1905 has been a profitable one for New York grape growers. The market opened well, and prices have advanced from the first shipment. Returns show that the prices received for the fruit averaged about $100 per car more than the crop of last year, and as compared with 1900 returns are about $200 per car more.

The growers adopted better methods of handling their crop this year than ever before, and the fruit was uniformly well packed. It has been noted, too, that stock which bears a label has sold somewhat higher than stock not labeled. It has paid to brand the packages with a label which stands for the contents. The last of the crop was closed out at about 17c per basket, on board cars at shipping point. This sounds much better than the reports of a few years ago, when New York grapes could be purchased on Missouri River markets at about this price per basket, and sometimes for even less money.

A Good Rabbit Market.

Cleveland, Ohio, is conceded to be one of the largest rabbit markets in the country. It certainly is remarkable the quantity of this game that is sold and distributed there. Myers, Weil & Deutsch, the well and favorably known general commission merchants of that city, are among the largest rabbit dealers in the trade. They receive them in any quantity, from single barrels or boxes to carload lots. The market prefers undrawn rabbits. They seem to carry and keep better when shipped in that way than when the entrails are taken out. Owing to the strict game laws, which largely prohibit the sale of nearly all game with the exception of rabbits, the demand has increased largely for this game. Shippers looking for a market for rabbith will find it to their interest to get in touch with these people. They are also large receivers of both live and dressed poultry, potatoes, apples, onions, cabbage, hickory nuts, etc. Readers of this paper wishing a market for anything in the game, poultry, fruit or produce line will not make any mistake in getting in touch with Cleveland, Ohio, and Messrs, Myers, Weil & Deutche. They are thoroughly reliable, competent and prompt and it is a pleasure to us to recommen dthem to our readers.

FREE TRIAL of a genuine Edison Phonograph at your own home.

GREAT XMAS OFFER

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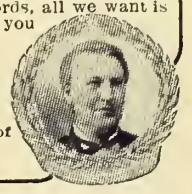

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Collector and Grower of
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8,000 Kalmia Latifolea,
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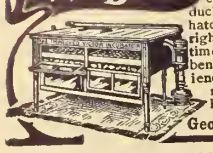
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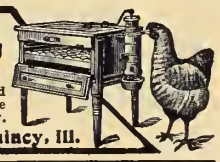
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GET A DANDY **THE DANDY BONE CUTTER**
will double your egg yield. Thousands of poultry raisers say so. It costs less, turns easier, cuts faster and lasts longer than any other. Price $5.00 up. **Sold on 15 Days' Free Trial.** Send for book and special proposition.

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The great conditioner for fowls—greatest egg-maker known. Makes hens lay—keeps them healthy, active; cures and prevents disease. Send 10c for trial package.
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Poultry Department

The Trap-Nest and Its Advantages to the Breeder.

Practical and scientific poultrymen the world over are today acknowledging the superiority of trap-nests, but those who have not used them, and absolutely reliable ones at that, do not and cannot realize the great advantage the breeder has who does use them, and the many little secrets that they unfold to him.

The poultry breeder without trap-nests, whether breeding for market, for eggs or for fancy points (standard requirements), which should combine to the very highest degree with market and eggs (or the utility) is working as much in the dark as would be the big department store that did not keep books. The department having apparently the biggest trade might not be the most profitable, and there would be the possibility that it was not profitable at all, or that it was losing money; and so with the hen, the one laying the largest eggs or the one laying the greatest number of eggs, or both, may not lay one single egg that will hatch, and while seemingly the most profitable hen, she is worse than none as a breeder, or in other words, "she is not what she seems to be."

From the articles that have been on trap-nests thus far the general public would be led to believe that they were only of use in determining and increasing the egg yield, and while their value in this is enough to warrant their use and pay handsomely for the extra expenditure and labor necessary, still it is only a secondary consideration, if one would achieve the greatest and most lasting results along that and other breeding lines, and therefore must be regarded only in connection with many others of equal or even greater importance.

The selection of specimens for the breeding pens involves the study of the different qualities and faults of each individual, which should be weighed and considered, one with another. Many of these can only be properly recognized through breeding inheritance, ancestral family characteristics and ancestral breeding propensities. Each individual breeding trait, whether merit, blemish or habit, can be ascertained to a certainty in regard to its relation with sire, dam, grandsire, granddam, etc., only by means of the trap-nest, with its corresponding individual records.

No rule or set of rules can be laid down for all to follow at any one time or any one to follow all the time, as conditions and circumstances alter cases. The first and paramount consideration, however, in selecting a breeder should be constitution. Never under any circumstances should a bird be selected that has ever seen one sick or sickly day. Our temptation may be very great at times, but let us invariably have enough will power to say no, and follow the example with sick chickens of the young man whose mother-in-law having died away from home, on being telegraphed, "Shall we embalm, cremate or bury?" replied, "Embalm, cremate and bury."

The breeding and selling as breeders of cured fowls has been the greatest stumbling block standard bred poultry has ever had, and has caused thousands of people to say of probably every well known variety, including the "dunghill," that "that breed or variety is not as healthy as this one," when it was not the breed or variety at all, but the breeder or breeders who allowed their stock to inherit weak tendencies, resulting from cured or weakly constituted fowls. The practice of inbreeding for a thousand years would not do as much real damage; and nothing could do so much for "better poultry and more of it" than for every breeder to realize this danger.

In selecting specimens showing the greatest constitution, together with extra strength and vigor, we should observe very closely the head and especially the eye and beak. A good cattle buyer will tell you that if he is only to see one part of a steer when buying feeders he would prefer that part always to be the head, and if I could see only one part of a bird in selecting breeders for constitutional strength and vigor, and in fact everything except fancy points, I also would prefer that part to be the head.

Let us demand a rich red, bright bay eye, as nothing so strongly denotes a good constitution; but of course we all would wish to see each and every part of a fowl and to examine each and every section before placing in our breeding pens.

After having selected only such specimens as have exceptional constitutional strength and vigor, we must then go over them once more very carefully, choosing only those

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Bargains in Fine Stock
Buff Rocks, Barred Rocks, Golden Wyandottes, Silver Wyandottes. Bred from selected pens that scored 90½, 94½; at $2.00 to $5.00 each. Write at once.
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EGG MAKER
The egg-producing food of the Petaluma country. Fed in connection with the regular food ration. Contains in correct proportion all necessary elements for meat and shell. 50 feeds for 1 cent. 25 lb. pail, $2.00
GERMOZONE
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LEE'S LICE KILLER
the original liquid lice killer. Strongest and best. Kills all vermin. No dusting, dipping or greasing, if you use Lee's. It's the standard—all others are imitations. Get the best. 1 gal. ex. paid, $1.25.

Write for FREE booklets—Mandy's Poultry School and OTHERS. Also for 1906 Catalog "Mandy" Lee Incubators and Brooders.
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It is made throughout of the highest grade galvanized steel wire. It has continuous stays, thus preserving and utilizing all the strength of the wire, about half of which is wasted in fences with cut stays. It is sold direct from the factory at *wholesale* price on 30 days' free trial. 26 styles for every purpose. Our Free Fence Book contains valuable information. Write for it.
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Lots of them, feed green bone fresh cut, rich in protein and all other egg elements. Get twice the eggs, more fertile eggs, vigorous chicks, earlier broilers, heavier fowls, bigger profits.
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Makes bone cutting simple, easy and rapid. Try it and see. Open hopper, automatic feed. Cuts all bone with adhering meat and gristle. Never clogs. Don't buy until you try it. Cat'lg free.
F. W. MANN CO., Box 108 Milford, Mass.

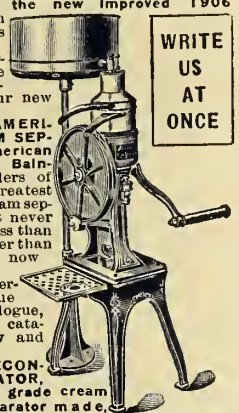
$19.90 Cream Separator.

WE TRUST YOU 30 DAYS

WHEN YOU WRITE for our free Cream Sepasator Catalogue we will aend you a wonderful offer, by which you can take our very best separator on one month's free trial on credit. Send no money to us, deposit no money with any one, pay nothing when you get it (we trust you absolutely), **use the separator one month, put it to every test,** at the end of one month if you find it skims closer, runs easier, is easier to operate, skims colder milk, does better work and is in every way better than any other separator you ever saw, then you pay us for it; if not, send it back to us at our expense of freight charges, and you are not out one cent, and you have had the use of the separator free of any cost or money deposit for thirty days, on free open account, full credit trial. We let you be the judge in every particular. We accept your decision without question of any kind and without expense to you.

$19.90 BUYS THE CELEBRATED DUNDEE CREAM SEPARATOR, the new improved 1906 Model, the equal of cream separators sold by others at $30.00 to $40.00.

If you answer this advertisement you will get the Dundee and our other separator catalogues and all our new and wonderful offers.



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$29.00 BUYS THE AMERICAN CREAM SEPARATOR, made by the American Separator Company of Bainbridge, New York, holders of many of the world's greatest medals for high grade cream separators, a separator that never before sold to users for less than $65.00 to $100.00, far better than most separators that are now being sold at $100.00.

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$33.95 BUYS OUR ECONOMY SEPARATOR, guaranteed the highest grade cream separator made, guaranteed to skim closer, skim colder milk, skim faster, skim more, clean easier, run easier, wear longer, do better work in every way, give better satisfaction in every particular than any other cream separator made, regardless of name, make or price. With this separator goes our celebrated **$1,000.00 Challenge for any other maker to meet us in competitive test.** These separators skim from 200 to 750 pounds per hour and you can skim 1,000 pounds per hour with our Economy. There is no other separator made that will in any way compare with it. If you own two or more cows you need our wonderful offer at once.

CUT THIS AD. OUT and send to us, or on a postal card or in a letter say "Send me your free Cream Separator Catalogues," and you will receive the three catalogues by return mail free, you will get our latest offers, our free trial, no money deposit, open account trust plan for examination and test, you will get the greatest cream separator propositions ever heard of. Address,

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Stevenson's New Idea Rabbit Trap will do the work. Catch 'em alive. All kinds of animals. None escape. Self setter. Price, $3.50. **Stevenson Nursery & Poultry Farm, Fordyce, Ark.**

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that is just what you want, you will find it in Poultry Gazette. Good all through—the leader in the West. 25 cents per year. Sample free. Address

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The course of "First Lessons in Poultry Keeping" now running in **Farm-Poultry** twice a month, will teach you quickly what would require years to learn by experiment. Fifty cts. a year. Sample free. **Farm-Poultry Pub. Co.,** Room G, 232 Summer St., Boston, Mass.

Success to The Fruit-Grower. It is at the top. May it stay there.—A. I. Mason, Hood River, Ore.

that we feel confident from experience and a knowledge of their ancestry will produce, when properly mated, exceptional specimens coming as nearly as possible to all standard requirements.

We are now ready, by means of records obtained through the use of our trap-nests, to discard all specimens that lay continuously undersized eggs, overly large or double-yolked eggs, poorly shaped eggs, eggs with rough, uneven shell and very thin shelled egs.

The males having been selected most carefully by duly considering their ancestral backing and their individual merits, we will mate with each male the females which will balance and nick to the best advantage, always giving males as they rank the preferences. The eggs from stock thus mated, if incubated under hens or in pedigree incubator trays in such a manner that we will know by the use of toe marks recorded, the sire and dam of each chick hatched and the specimens that do not and cannot be made to produce fertile eggs, will show the results from each pair of birds with no guesswork.

This is all much easier said than done, but if we will carefully follow this system out from year to year, we will soon find that there is far greater value to trap-nests than merely to assist in detecting the best layers and increasing the egg yield. We will find many pleasant surprises and also many disappointments. Oftentimes from the specimens that we expect the most, we will receive the least in eggs, fertility, and high class progeny, just as in the race horse we find the greatest breeders or producers never have shown any great amount of speed themselves, sometimes none at all, and those that have been phenomenal whirlwinds themselves have often failed to get offspring that could go in the list.

We never can tell what we can do until we try, and right here is wherein the great value of the trap-nest lies, for we will never know the capabilities of any one specimen until we have tested it and cannot properly decide what mating to form next unless we know the result of what we have done and it is impossible for us to realize what we have accomplished without an accurate record obtained through the use of the trap-nest.

The old guesswork way of breeding poultry is as far behind the times and as uncertain with results compared with the trap-nest system as the old style of advertising compared with an up-to-date keyed and indexed system.

There is more to learn through a trap-nest system than a large sized Webster's International Dictionary would hold, and to those who are afraid that the poultry business is being overdone, just enter into the breeding of high class standard bred poultry, bred to pay, by an up-to-date trap-nest system, stick to it carefully and persistently, and from your results, financially and otherwise, I will guarantee that you will agree with me, that the poultry business is only in its infancy. H. P. RANKIN.

Breeder of "Rankin's Royal Rocks and White Wyandottes," or "America's Big Four," Hartington, Neb.

Buy an Incubator.

By all means buy an incubator, if you have as many as two dozen good hens; and buy it early in the season, too, as the early hatched chicks are the ones that bring the top prices.

Last winter I wanted to get me an incubator, but found there were so many different makes advertised that I was puzzled to decide on which one to risk.

I had but little money to spare for an incubator, and none at all to waste in experimenting with one that was unreliable.

After closely studying various catalogues, I finally purchased one that I have found to be so simple of construction that it practically runs itself, as it requires but little attention.

I got a 100-egg size and a brooder to match and received them about the middle of February.

The weather was cold, and I found that the book of instructions warned me against using eggs that were chilled, but I was very eager to put my incubator to work and decided to risk using the eggs anyway.

The result was a very poor hatch, and after a little figuring I found that the market value of the eggs and the cost of the oil was more than my chicks would be worth at two months old.

My faith was still unshaken, although my neighbors chaffed me about my failure, and would ask the price of eggs and chickens when my incubator was mentioned.

I filled the incubator again after waiting for the weather to moderate, and got an excellent hatch.

As soon as these were out I filled it again with eggs from pure bred fowls purchased from a breeder in a different section of the state.

The incredulous ones were convinced at last and a great many were anxious to be present and witness this last hatch come off if I would tell them when it was done. This I knew would be unwise, for while I was very proud of my machine and my success, I dared not risk endangering this hatch by attempting to exhibit the working of the incubator to entertain the onlookers.

After seeing what a fine hatch of thrifty, vigorous chicks I took off, one woman was very anxious to have me hatch one brood for her.

After such a poor beginning some would have grown discouraged and set it aside, but I have found that it paid for itself and some over the first season, and would not think of doing without it for twice its cost price.

My chicks were healthy, free from vermin, grew quickly, could be shut up at will, and my pullets are so gentle I can handle them with pleasure.

By all means try an incubator, and if you follow instructions, mixed with common sense, you will not regret buying one.

MISS ANNIE HOFFARTH.
Fowler, Mo.

Beware of "Cheap" Cream Separators

There was never so much talk of "cheap" separators. It may be well said that the **DE LAVAL** has its numerous imitators on the run, and that most of them are nearing the end of their race. All are offering cut after cut in prices, and making most desperate efforts to unload machines at any cost.

Of course you want a cheap separator. But be sure you know what cheapness means. It means more in a separator than in anything else, because the use of a poor machine means **waste** every time milk is put through it.

Don't lose sight of the importance of **capacity**, and remember always that in proportion to actual capacity the **DE LAVAL** is the cheapest separator made. In addition it **saves** its cost while others **waste** theirs, and it will last **ten times** as long.

Remember too that you have got to have new wearing parts for a separator, frequently for a poor one, and that most so-called "cheap" machines now offered will be off the market in a year or two. Then your "cheap" machine must go straight to the "junk heap."

There was never a better time than now to buy a good separator, as with the season of high butter prices ahead it will half save its cost in otherwise wasted butter-fat before spring. But don't be temted to buy one of the "paste diamond" class that will soon be worth no more than its weight in scrap-iron, and will have **wasted** instead of **saved** its cost while you did use it.

The best is more truly the cheapest in cream separators than in anything else. Send today for catalogue and name of nearest local agent.

THE DE LAVAL SEPARATOR CO.

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121 YOUVILLE SQUARE, MONTREAL.
75 & 77 YORK STREET, TORONTO.
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That Irrigable Land in Big Horn Basin.

It will soon be ready to file upon. I went out there and saw it three weeks ago. Two big steam-propelled excavators and swarms of scraper-teams were making canals and work on R. R. grade was going on in several places. It has been promised that the R. R. shall be laid to our land by Feb. 1. A whole trainload of steel rails, ties and bridge materials started into the basin the morning I came away. Irrigation will be supplied to all the land in good time for crops the coming season, but probably none of the land can be selected before some time in January. It took longer to get the large canal-making force into action than was at first counted on. But cheap railroad rates for January, February, March and April have already been arranged for. All my clients will be properly looked after. Write me as long before going out as you can.

Be sure to look after this matter. It is the best land deal in the country. The boom is already on. All that I have predicted for that country, and more, will be realized.

You Can engage 40 to 160 acres now at government price. Later it will cost you several times as much. You run no risk in sending your location fees, because you either get satisfactory land or get your money back. It can be arranged so that you can have thirty months after taking your land before you need go upon it personally. I have extended to Dec. 15th the time in which those sending in location fees at once will thereby receive an additional credit of 25 cents per acre. By engaging a tract of the land now you are sure of getting a good price at cost of reclaimation. If you wait but a little too long you are just as sure to get none at all without paying a big advance. Send me your own and friends' addresses for free booklet giving full information about this land and how to get it.

J. W. GREGORY,
No. 619 Edmond St. St. Joseph, Mo.

DELICIOUS FRUITS

A Shady Brook, The Twin Oaks, etc., a set of the most beautiful pictures ever offered for 30c prepaid. Write for our catalogue. **Scheibner Supply House, New Orleans, La.**

You Fat Folks! Why pay $5 to $10 a month and risk trouble for yourself by buying pokeberry and other drugs? Send 2c stamp for pamphlet that tells of the most effective and cheapest remedy ever used—one that costs little and has taken Over a Ton of Fat from 57 people! No dieting, exercise or physicing. Unlike all the stuff you may have tried. The information and instructions given are alone worth fifty times the 2c stamp, even if you don't try the remedy

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We are distributing free to all who write and inclose a stamp, a prescription for the cure of the liquor habit, It can be given secretly in coffee or food. Also a recipe for the cure of the tobacco habit, that can be given secretly. The only request we make is that you do not sell the recipes, but give free copies to your friends. **KANSAS ANTI-LIQUOR SOCIETY,** Room 45, Gray Bldg., KANSAS CITY, MO.

RUPTURE CURED IN TEN DAYS
By a Scientific and Never-failing Process. No Knife no pain. Absolutely no danger. **IN TEN DAYS THE PATIENT IS SOUND AND WELL**—cured to stay cured. Write for proofs, booklet, etc., FREE.
DR. O. H. RIGGS, 206-M Altman Building, Kansas City, Mo.

Always mention The Fruit-Grower.

The Book List

As the long evenings of winter approach, when farmers have more time for reading, they will naturally be more interested in the books which have been published on subjects in which they are interested. The Fruit-Grower has received copies of the following books, some of which, at least, will interest many members of The Fruit-Grower family:

"The Fat of the Land."—This book, written by John Williams Streeter, lately deceased, and published by the Macmillan Company, is a most interesting story of a physician who is compelled to give up his practice, owing to failing health, and who purchases a farm and improves it according to his own ideas. With plenty of means and certain sound ideas as to what a farm should be, he succeeds in effecting a great transformation in the farm, and gets it onto a paying basis. The story is well told, with interesting details of the development of the different parts of the farm, and altogether it is a most readable story. The only trouble with the book is that after on reads it, one is tempted to remark that with the amount of money which the author of the book had at his disposal most any of us could have succeeded. To make a farm profitable, when one has an ample supply of money to use in the work, is quite a different proposition from making a farm a profitable investment after starting with very limited capital. One is like falling heir to a fortune, and the other is like digging it out by slow process. But the book is most interesting, in spite of the fact that it is said the author drew upon his imagination for the matter the book contains.

"The Quest of John Chapman."—This book, also published by the Macmillan Company, is by Rev. Newell Dwight Hillis, and is along a novel line. John Chapman, or Jonathan Chapman, it will be remembered, was the correct name of "Johnny Appleseed," whose work was described in an illustrated article in the September (1904) number of The Fruit-Grower. In this book Dr. Hillis has woven an interesting story in with the tale of Johnny Appleseed's work in planting trees throughout Ohio and neighboring states. According to the story which Dr. Hillis has written, John Chapman was disappointed in love in his youth, his sweetheart having been taken by her father to the then frontier country. Starting out to find his sweetheart in the sparsely settled country, Chapman finds that they have left the place where he expected to find them, and his long wanderings, which end only with his death, begin. Coming from New England, Chapman determines to plant apple trees wherever suitable ground can be found, and he continues this work until the end of his days. The story is skillfully written, and pays tribute, as Dr. Hillis says, to "this forgotten hero." In the preface to the book Dr. Hillis pays tribute to those persons who originate new fruits, and calls attention to their very scanty reward. Particular mention is made of Ephraim Bull (whom Dr. Hillis erroneously calls Jonathan Bull), originator of the Concord grape, and a number of other workers in this line. Of course, in the book much of the matter is imaginary, but withal there is enough facts connected with the history of Johnny Appleseed to make it most interesting.

"The Cereals in America"—By Thos. F. Hunt, M. S. D. Agr., professor of agronomony in College of Agriculture, Cornell University. This is primarily a text book on agronomy, but is equally as useful to the farmer as to the teacher or student. It is written by an author than whom no one is better qualified. The subject matter includes an accurate, comprehensive and succinct treatise of wheat, maize, oats, barley, rye, rice, sorghum (kafir corn), and buckwheat, as related particularly to American conditions. The author has made a comprehensive study of the topics treated, drawing freely from the publications of the United States department of agriculture, American experiment stations and recognized journals related to agriculture. First-hand knowledge, however, has been the policy of the author in his work, and every crop treated is presented in the light of an individual study of the plant.

Illustrated with 100 entirely new and original drawings by C. W. Furlong and A. K. Dawson, about 500 pages, 5½x8 inches, cloth. Price $1.75 postpaid. Published by Orange Judd Company, 52 Lafayette Place, New York, N. Y.

"The Potato"—By Samuel Fraser, Assistant Agronomist, Cornell University. Illustrated, 200 pages; 75c. Published by Orange Judd Co. This book treats of the cultivation of the potato, including the spraying, harvesting and storing, transportation and marketing, etc. In preparing the book the author has drawn upon the reports and bulletins of the various experiment stations, as well as reports from some of the most successful practical growers. It will rank as one of the best works upon the subject of this most important crop.

"The Book of Topiary"—This is one of a series of books published by John Lane, under the general editorship of Harry Roberts, the series being entitled "Handbooks of Practical Gardening." The book, as its title indicates, treats of those old English gardens, with their box hedges, their yew trees trimmed in all sorts of fanciful shapes, etc. Latter-day gardeners do not recommend this style of gardening, but the old gardeners thought that no formal garden was complete without its trees trimmed up in the most unnatural forms. Whether one approves this fashion or not, it cannot be denied that the old gardens containing these examples of topiary have a charm all their own. The illustrations in "The Book of Topiary" give one a glimpse into some of these old gardens, where the best specimens of the art are to be found. This style of gardening will not become popular in this country, but the book has an interest in showing what the old-time gardeners considered a most important part of their work.

"The Book of Topiary" is published by John Lane, London and New York.

The Chrysanthemum: Its Culture for Professional Growers and Amateurs. By Arthur Herrington. Published by Orange Judd Co. Illustrated, 168 pages; 50c. This book is perhaps the most comprehensive book on the subject of the chrysanthemum which has been published in America; and it will be found helpful by professional growers as well as amateurs. The subject of propagation, and growth of plants is treated fully, from the time the small plants are transplanted from the "flats" to the time when they appear as show plants. Directions are given for the preparation and exhibition of show plants, together with rules for scoring blossoms. The book will be welcomed by those who are interested in growing the chrysanthemum even on a very small scale.

Agriculture Through the Laboratory and School Garden—This is still another book published by Orange Judd Co., the authors being C. R. Jackson and Mrs. L. S. Daugherty of the State Normal School, Kirksville, Mo. The book is fully illustrated, containing 402 pages, and sells for $1.50 net. This book is published in answer to the demand which has grown up within the last few years for a system of text-books which shall help school teachers to teach the principles of agriculture in their schools. Teachers without number have been found who are willing to take up this work, if they knew how to go about the matter. This book is published to help them along this line. As its name implies, this book gives explicit directions for actual work in the laboratory and the school garden through which agricultural principles may be taught. The work is intended to cover one year's time, but it is so arranged that any part of it may be omitted if the necessary material cannot be obtained, or if the time allowed to this subject makes it necessary. The State Normal School at Kirksville, Mo., has for a number of years been working along this line; President Kirk of that institution is one of the foremost workers for the teaching of agriculture in the public schools, and it is fitting that the first book on this subject should come from his institution. Teachers will find this book very helpful, and the appearance of the work is but an indication of the increased interest which is being taken in this matter.

The Orchard and the Fruit Garden—This book is E. P. Powell, and is published by McClure, Phillips & Co., New York. This book is by one of The Fruit-Grower subscribers, therefore it will have an added interest to our readers. But, really, the book is very interesting, particularly to the one who wishes to grow fruits of all kinds for home use. Mr. Powell is not only a very interesting and helpful writer, but he appreciates the better things of life, and his book reveals the lover of nature. The different fruits are treated, from the standpoint of a New Yorker, it must be admitted, but fruit-growers generally will find much in the book which will interest and instruct them. The book is well written, well printed and well bound.

Another Hardy Garden Book—Some time ago Mrs. Helena R. Ely wrote "A Woman's Hardy Garden Book," which was received most favorably by the public. In this book the author told of her experience in getting away from a flower garden of annuals, and her success in establishing a garden of hardy plants. The book became so popular, and the interest in hardy plants is so great, that another book by the same author has been issued, "Another Hardy Garden Book," which is in every way up to the standard of the first book. This later book completes the work which was outlined in the first one, and gives practical directions for the raising of vegetables fruits and flowers, for the home garden; also instructions for the transplanting of trees, shrubs and vines, with a chapter on lilies and iris, and their varieties. The book is well illustrated, containing nearly fifty full page plates. Everyone who has a garden—or who wants one—will appreciate this book, whether that garden be a flower garden, or one devoted to fruits or vegetables. The book, like the first one by the same author, is published by the Macmillan Company, New York, and this fact is sufficient guarantee that typographically the book is all that it should be.

That Gold Mine in the Front Yard—By C. S. Harrison, York, Neb. Published by Webb Publishing Co., St. Paul. For a number of years, at horticultural meetings and through the farm papers, Mr. Harrison has been preaching the gospel of home adornment, and now has published a book on the subject, with the foregoing title. The author is president of the Nebraska Park and Forestry Society, and has given many years to a consideration of the subject of making attractive homes, and especially attractive farm homes. Readers of The Fruit-Grower will recall that he has been very pronounced in his support of the peony as a plant for the millions, and some may have thought he was prejudiced in its favor. But in his book he discusses lilacs, roses, spireas, columbines, etc., and he is friendly to them all. Mr. Harrison's book makes a plea for more attractive homes, for the effect they will have upon the inmates, and he tells how, by the expenditure of a small sum of money, these homes can be made attractive. The different shrubs and herbaceous plants which should be in every farmyard are discussed at length and directions given for their care.

The Globe Trotter's Dictionary—This is an alphabetical list of the words and phrases which will be most used by a person speaking the English language who is traveling in foreign countries. The English words are given and opposite them are the equivalents in French, German, Italian and Spanish. Only the words which one will need are included, yet when one is armed with this book one's wants can be made known in practically every country on the globe, for scarcely a place can be found where one of these languages is not understood. The book is published by William S. Myers, Anderson building, John street, New York. The edition is limited, but Fruit-Grower readers who are interested in the matter of expressing their wishes in foreign languages, in a limited way, will be supplied with copies upon request.

The Delineator—This magazine has been so greatly improved within recent years that one who has not been watching it may not know the magazine in its present form. One of the newest improvements is the installation of a color press, which permits of the printing of pages in colors. The December number is especially good because of this color work. The Delineator is better than ever, yet the subscription price remains the same—$1 per year. Published by The Butterick Co., New York.

The Century for 1906—This excellent magazine has prepared an exceptional line of reading for the year 1906. Nearly twenty years ago The Century published The Life of Lincoln, by Nicolay and Hay. Now it brings forward a new article, "Lincoln the Lawyer." This series of articles will include many new stories of the life of Lincoln, with reproductions of old-time pictures and documents. Another feature, which will be especially interesting to farmers and their families, is a series of "Articles for Farmers," on saving crops, why boys leave home, etc. A new novel by Mrs. Humphry Ward began in November, and will continue through several issues. The travel stories, the humorous articles, and the short fiction stories will be up to the Century standard. The Century's subscription price is $4 a year, and all persons who send their subscriptions in December will receive the November number free, containing the first chapter of Mrs. Ward's novel, "Fenwick's Career."

St. Nicholas for 1906—While many persons have thought St. Nicholas as a paper for young folks could not be improved, the publishers announce that the year 1906 will see the magazine better than ever before. This magazine, as is well known, is published by The Century Co. for the younger members of the family. In harmony with the series of articles on Lincoln as a lawyer which will appear in The Century, the publishers have arranged for the publication of "The Boys Life of Abraham Lincoln" in St. Nicholas. This series will be by Miss Helen Nicolay, daughter of John G. Nicolay, one of Lincoln's secretaries, who, with John Hay, wrote the authorized life of Lincoln. A number of serial stories will run through the year, and the usual feast of good things will be provided, including the Nature and Science department, which is such a popular feature among school children. St. Nicholas is one of the best magazines for young folks, and one who wants to make a Christmas present which will be appreciated throughout the year can do no better than to subscribe for this magazine for the year 1906.

Darling & Company at New York.

As will be noticed by their advertisement in this issue, Darling & Company of Chicago, Ill., the pioneer Poultry Food and Supply manufacturers of the West, have established a factory in New York. This will enable them to handle more advantageously the trade they have already built up in the Eastern and New England States. Their trade relations are already established. The Darling products have been selling on their known high quality, and the volume of sales in the East for the last two years has just about kept pace with those in the West. After all, it is not so much a matter of location, as of having the goods to deliver. The Darling people know the value of a good reputation. They acquired theirs while located at the Union Stock Yards, Chicago, where they had every sort of poultry food material at hand. Selling only high class goods has done so much for them, that naturally, they will adopt the same high standard at their Eastern factory. Their Eastern branch will manufacture Darling's Poultry Foods and Supplies directly under the supervision of Darling's experts. This will insure the Eastern trade receiving fresh, sweet and wholesome foods and supplies. Also quick delivery. We are informed that their facilities and arrangements for obtaining food materials at Long Island City are not inferior to those at the Chicago Stock Yards factory. Their coming is in the interest of more and better poultry. They are a high minded, honorable concern, manufacturing only the highest grade goods it is possible to produce, and we commend them heartily to the notice of our readers.

Sure Death to Lice on Poultry.

Everyone appreciates the fact that hens which are troubled with lice or other vermin will not lay eggs. Any plan, therefore, which will rid the fowls of these lice can be classed as an egg-producer. On this line of reasoning, the lice-killing machine manufactured by Charles Schild Co., 5 Frankfort street, Cleveland, Ohio, should be classed as one of the best egg-producing machines which can be found. The manufacturers of this machine guarantee certain things, among others the following:

"We guarantee the use of one of our machines to improve the health of a roupy or run-down flock in ten days' time.

"We guarantee our machine to double or treble the egg-production of such a flock during the coming winter, or we will refund the purchase price.

"We guarantee our machine to more than pay for itself in the increased production of eggs by any flock during the coming winter, no matter how healthy it may be, or we will refund the purchase price, together with transportation charges."

This is certainly a fair proposition, and readers of The Fruit-Grower should send for one of the company's catalogues. Address Charles Schild Co., 5 Frankfort st., Cleveland, Ohio, mentioning The Fruit-Grower when you write.

Get This Gold Pair FREE

Listen! In the past year I received thousands of letters from spectacle-wearers all over the world, expressing their thanks and appreciation, and the one I give here is a good sample of what they all say. The Reverend O. C. Clark, one of the most prominent ministers in the State of Illinois, says: "I highly appreciate your famous "Perfect Vision" spectacles, for I can honestly and truthfully say that with them I now read the finest and smallest print both day and night, just as well as I ever did in my life Your spectacles are truly marvelous." Now I have no doubt but that the testimony of this noted minister of the gospel is sufficient proof to every fair minded spectacle-wearer that my famous "Perfect Vision" spectacles are really **THE BEST IN THE WORLD**, as I claim.

But I Want YOU to Judge Them For YOURSELF

and thereby get **YOU to send me YOUR testimonial also.** Hence, before placing them on the market for sale at their regular price of $5 per set, I make you the following special offer which will actually save you $4 cash: Just write me your name and address and I will mail you my Perfect Home Eye Tester, free, with which you will be able to test your eyes at your own home, perfectly. Then when you return me the Eye Tester with your test, I will send you a complete five dollar family set of my famous "Perfect Vision" spectacles for only $1 (which is an actual saving of $4 to you), and this will include a pair of my handsome Rolled Gold Spectacles absolutely free of charge. This set will last yourself and family a lifetime. With these famous "Perfect Vision" Spectacles of mine you will be able to thread the finest needle and read the smallest print, both day and night, just as easy as you ever did in your life, and this even if your eyes are so very weak now that you cannot read the **HEADLINES** in this paper. I also hereby agree to return you your dollar cheerfully if you **YOURSELF** don't find them to be the most perfect-fitting, clearest and best you have ever bought anywhere, at any price. Write today for my free Home Eye Tester. Address my company as follows:

DR. HAUX SPECTACLE COMPANY, Haux Building, ST. LOUIS, MO.

I WANT AGENTS ALSO And any man or woman (also storekeepers), without any previous experience whatever, can fit the weakest eyes with my Improved Home Eye Tester. This is so simple that any one can work it with perfect satisfaction and easily earn from $25 to $100 weekly selling my famous Perfect Vision Spectacles, either in their own homes, traveling or in stores. My agents need no license as I furnish necessary documents with the Agent's Outfit.

(NOTE.—The above is the largest Mail Spectacle House in the United States and perfectly reliable.)

PILES NO MONEY TILL CURED. 27 YEARS ESTABLISHED
We send FREE and postpaid a 232-page treatise on Piles, Fistula and Diseases of the Rectum; also 108-page illus. treatise on Diseases of Women. Of the thousands cured by our mild method, none paid a cent till cured—we furnish their names on application.
DRS. THORNTON & MINOR, 1003 Oak St., Kansas City, Mo. and 3969 Olive Street, St. Louis, Mo.

Nut Culture

Is the most delightful and profitable industry on the farm.

The American Nut Journal

PETERSBURG, VA.

is authority on the culture of all varieties of nuts.

This publication has just issued two valuable treatises:

The Pecan and Its Culture. (75c)
Tho Peanut and Its Culture. (60c)

SPECIAL SUBSCRIPTION OFFER.

Either of these treatises together with the American Nut Journal for one year, will be sent to any address upon the receipt of $1, which is the regular price of the American Nut Journal alone.

Write for sample copy.

AMERICAN NUT JOURNAL, Petersburg, Va.

Agents Wanted Quick seller. The Time-Saver and Money-Saver for farmers. Over a thousand sold in one county. Expect total sales next year to reach 300,000.

Jason Day, Clifford, Mich., sold two hundred in October.

L. F. Farrar, Rochester, Vermont, has sold about five hundred and he has made as high as $26 in a day. He sold his first hundred in ten days.

Wm. J. Lewis, Croswell, Mich., sold fifty in eight days.

Geo. Sandberg, Mt. Pleasant, Iowa, sold eight one afternoon.

D. A. McLeod, Valley City, N. D., has already sold nearly five hundred.

Knute Olson, Hatton, N. D,. sold twenty in four days.

J. D. Buxton, Minden, Neb., sold fourteen the first day out.

F. L. Hoke, Odell, Ill., has averaged seven per day. One afternoon he saw only twelve men and sold ten.

Hundreds of other successful agents are making excellent money. Why not you? It is easier than you think. Sells itself. Something brand new. Don't delay. Time is money. Write today before someone else takes the agency for your locality. Write right now.

FARM RECORD COMPANY,
47 Main St. Newton, Iowa

You Cannot Lose

judging from present prospects, if you buy KANSAS CO-OPERATIVE REFINING CO. stock now while it is selling

AT 7 CENTS PER SHARE

PAR VALUE $1.00. It will sell at 15 cents or higher within a very short time, with good prospects of its selling at 50 cents to $1.00 and paying BIG DIVIDENDS almost before you know it. This is a great independent oil refinery, strictly co-operative and has great prospects. When the plant is in full operation it is estimated that the company can pay dividends of 30 to 40 per cent. Everybody knows there is an enormous profit in refining oil.

Only a Limited Amount of Stock for Sale at Present Price. BUY NOW, if you want to make good big money. Write for "Co-Operative Refining" Prospectus. DON'T WAIT. Address

UNION SECURITY CO.,
534 GAFF BLDG. CHICAGO, ILL.

Excursions

EXTRAORDINARY

The Santa Fe

will sell tickets to fruit-growing sections of the South and Southwest and return, at 75 per cent of the one-way fare, on

December 5 and 19

For particulars, address
J. M. CONNELL, G. P. A.,
Topeka, Kan.

Or call on
GEORGE BUTTERLY, C. P. A.,
601 Edmond St., St. Joseph, Mo.

Did You

ever see a Bird's Eye Map in colors? *No! Well, you ought to.*

The JOY LINE, OPERATING STEAMERS BETWEEN NEW YORK, BOSTON & PROVIDENCE, has issued a folder map of Mass., R. I. and Conn., which is a work of art. It shows the whole coast line of southern N. E. and designates lighthouses and points of interest along the coast with a table of distances. This comprehensive map will be mailed on receipt of 10 cents by B. D. Pitts. Agt., Joy Line, No. 310 C, Congress St., Boston, Mass.

Get the Genuine Ruberoid Roofing.

We have received numerous complaints from dealers in and consumers of Ruberoid Roofing that inferior imitations of it, many of them having similarly sounding names, have been sold under the deliberate misrepresentation that these imitations are actually Ruberoid Roofing or that they are made by the Standard Paint Company or some concern which was or has been affiliated with the Standard Paint Company.

For the purpose of contradicting these false statements, made sometimes by dishonest salesmen and at other times in printed circulars, and to set the public right as to the truth, the Standard Paint Company asserts and guarantees that the following statement of facts is absolutely and unqualifiededly true:

First: The Standard Paint Company is now, always has been and will continue to be the only manufacturer of Ruberoid Roofing in the world, and has no connection with any other manufacturer of roofing.

Second: The Standard Paint Company does not manufacture any other roofing than Ruberoid, which is its registered trade-mark.

Third: Ruberoid was the first smooth-surfaced, weather-proof and elastic prepared felt roofing ever made. It is and always has been manufactured at Bound Brook, N. J., where the Standard Paint Company has its only American factories. The only other factory of the company in the world is at Hamburg, Germany.

Fourth: The method of combination of ingredients employed in the manufacture of Ruberoid Roofing is owned and employed exclusively by the Standard Paint Company.

Fifth: Ruberoid Roofing was first manufactured in the year 1891. It was not until many years after the efficiency of Ruberoid Roofing had been demonstrated that any imitations whatever of such roofing were produced and sold.

Sixth: All roofings similar in appearance to Ruberoid Roofing are mere imitations and have not, either directly or indirectly, been authorized by, nor have they received the sanction of, the Standard Paint Company. All claims made by any of these imitators that their manufactures are conducted by persons who are familiar with the manufacture of Ruberoid, are false.

Seventh: To identify Ruberoid Roofing, the registered trade-mark, "Ruberoid," is stamped on the under side of each length every four feet. As a further safe guard, the name of the Standard Paint Company, sole manufacturers, is printed on the outside wrapper of each roll.

This letter is sent to all persons interested in roofing, so that all false assertions made by manufacturers of imitations of Ruberoid Roofing can be immediately denied under the signed guarantee of this company, which hereby offers to prove at any time and at any place the truth of the foregoing statement, and challenges any and all of the imitators of Ruberoid Roofing to make good any statement to the contrary.

Yours very truly,
THE STANDARD PAINT COMPANY,
Manager, Sales Department.

Gratifying Reward for Years of Honest Effort.

In the olden days merchants and traders dispatched expeditions from the East to the Northwest Pacific Coast without expecting to hear from them perhaps for years. Those who have read Irving's Astoria have a vivid picture of that "far country" a hundred years ago.

And now, a century later, the Lewis & Clark Exposition has drawn thousands to witness the marvelous growth of that once wild and desolate region.

There is probably no section of our country that has seen such development of the Poultry business as the Pacific Coast—and it was only natural that the Exposition at Portland should attract not only the breeders of fancy poultry, but of the largest and most complete exhibits of Poultry Appliances ever gotten together at any Exhibition.

And so when The Manson Campbell Company of Detroit, Michigan, makers of the celebrated Chatham Incubator and exhibitors on a large scale at Portland, received telegraphic notice of their winning the Gold Medal on their Incubators and Brooders, it is small wonder that they felt elated and repaid for their years of effort spent in producing their perfect machines for hatching and rearing chicks. But, after all, there is perhaps just as much satisfaction in the thousands of letters they have from "folks," not "expert judges," but just such people as buy incubators every year, letters that tell of splendid results, from hatching and raising chickens with Chatham machines.

What further proof can a man want that he has what the public needs—first-class machines at remarkably low prices. Our readers who plan to buy incubators or brooders this coming season, will find it worth while to investigate the Chatham.

Write to the makers today for catalogue. Address The Manson Campbell Co., 334 Wesson Ave., Detroit, Michigan, and mention this paper.

A HOUSEHOLD NECESSITY.

Greatest of All Kitchen Helps and Savers.

The secret of the almost endless variety of dishes which the skilled chef can produce from a few ingredients, lies in the fact that he utilizes every scrap of material. In his skillful hands, left over, and to the average cook, waste food, is transformed into the most savory dishes.

The ordinary housekeeper lacks the experience of these past masters of the culinary art, but modern ingenuity has made the same results possible in every home.

The Enterprise Food Chopper minces fish, meat, fruit, or vegetables to any degree of fineness and will make nut butter. The Enterprise Manufacturing Company of Pa., are the makers of these machines, but they are sold by all hardware and general stores everywhere.

By their use all waste in the kitchen is stopped and scores of delicious dishes and delicate desserts are easily made. They are great labor savers besides, and never a day passes when the Enterprise cannot be used to great advantage.

The Enterprising Housekeeper, a famous book of tested, economical recipes and illustrated kitchen helps, published to sell at 25c, will be sent free if you send your name and address to The Enterprise Manufacturing Co. of Pa., 321 Dauphin street, Philadelphia.

Use an Acme Harrow.

One of the lessons that cannot be repeated too often is that of proper preparation of the seed beds before planting. Of all cultivating implements nothing is better suited to this purpose than the Acme Pulverizing Harrow now being advertised in this paper. It mashes the hard clods, pulverizes, stirs, levels. It is justly one of the most popular cultivating tools manufactured. No reader should overlook the advertisement. It is manufactured by Dunne H. Nash, Millington, N. J., who makes a very liberal free trial offer. We should be glad to see people who are readers of this paper take advantage of the offer in large numbers.

National Berry Boxes.

For several years the advertisement of the National Paper Box Co. has appeared in the columns of The Fruit-Grower, and it starts again with this issue. This firm manufactures paper berry boxes, which have been well received by those who have used them. By using this box one does not have to use nails, but the boxes can be taken to the field in the flat and folded up in a jiffy by the pickers. The boxes have been improved recently, so that the bottom is supported all the way round, making the package much stronger than formerly. These boxes are made in both the Leslie and Hallock styles. Catalogue and price-list will be sent to those who address National Paper Box Co., Kansas City, Mo. Read what two satisfied customers say of the paraffine paper boxes:

"I got a sample berry box of you some time ago. Some of our men here thought it would not stand up in wet weather, but last week I set the box out in the rain half a day and it stood the test all right. I am a stranger to you, but will ask you to ship me 10,000 quart berry boxes, Leslie or oblong berry boxes, and give me the usual time that Mr. Younkerman of Council Bluffs does to make payment, until June 15th. I will furnish best of reference and by doing this I can sell to all the berry growers here and I stand good for all of it.

"What about crates for these boxes, can you furnish crates and at what price?—Signed E. V. Wright, Hamburg, Iowa."

"I am today ordering second lot of your oiled paper berry boxes. This box has the wooden box bested on every point. They are neater, smoother, easier to put together and are cheaper as every one is a good one. I put them to the severest test by picking in the rain and they stood the test better than any wood box. They are 'O. K.' Claude E. Field, Slater, Mo."

Darling & Co.'s Poultry Supplies.

Darling & Co., Union Stock Yards, Chicago, have long done a very large business in furnishing poultry supplies, and their trade in the East has grown to such proportions that a branch office has been opened at Long Island City, N. Y. This firm handles all kinds of poultry supplies, such as incubators and brooders, leg bands, coops, etc., but makes a specialty of poultry foods. Located at the greatest live stock market in the world, Darling & Co. have opportunity to get meat scraps, bones, etc., fresh and at lowest prices. Accordingly the beef meal, meat scraps, cracked bone, chick feed, etc., sent out by Darling & Co. have made a splendid record, and are used by many of the best poultrymen in all parts of the country.

The new catalogue of Darling & Co. has been received, and it is a valuable book of 48 pages and cover. It describes the different poultry foods manufactured, and lists a full line of supplies of all kinds. It will be sent free to all Fruit-Growers readers who will mention this paper when writing. Address Darling & Co., Union Stock Yards, Chicago, Ill.

OF VALUE TO HORSEMEN.—Do you turn your horses out for the winter? If so, we want to call your attention to a very important matter. Horses which have been used steadily at work, either on the farm or road, have quite likely had some strains whereby lameness or enlargements have been caused. Or perhaps new life is needed to be infused into their legs. Gombault's Caustic Balsam applied as per directions, just as you are turning the horse out, will be of great benefit; and this is the time when it can be used very successfully. One great advantage in using this remedy is that after it is applied it needs no care or attention, but does its work well and at a time when the horse is having a rest. Of course it can be used with equal success while horses are in the stable, but many people in turning their horses out would use Caustic Balsam if they were reminded of it, and this article is given as a reminder.

The new improvements in the 1906 "Mandy" Lee Incubator insures success in any location, and any kind of weather. Better read about it. Catalogue free. Geo. H. Lee Co., Omaha, Neb.

Do You Want a Shotgun or Rifle?

If you do, you will be interested in the advertisement of Schmelzer Arms Co., Kansas City, Mo., which appears in this issue of The Fruit-Grower. This firm handles a full line of sporting goods, and makes a specialty of firearms of all kinds, from the smallest revolver up to the very finest weapon made. Hunting coats, jack- etc., etc., are carried—in fact, everything the sportsman will need. This catalogue also includes all kinds of cameras, kodaks and accompaniments; game boards for holiday presents; football and baskethall goods; skates, sleds, etc. In fact, something which will interest every member of the family will be found in this catalogue, and it will be sent free to those who write for it. Address Schmelzer Arms Co., Kansas City, Mo., and mention The Fruit-Grower when writing.

Free Stencil of Your Name and Address.

A remarkable offer, for purpose of introducing their 100-page catalogue, that if you send your name and address, with 10 cents in stamps to cover cost of mailing to Carroll Iron Works, Station D., Chicago, they will immediately send you a 4x12 inch stencil of your full name and address similar to this ☞ A stencil is very useful in marking your Produce Shipments, Grain Bags, Tools. Write your name plainly and they will send your stencil promptly.

C. L. BOWES,
Chicago,
R. F. D. 1, Ill.

Good Sprayers.

The John Deere Plow Co. of Kansas City and Denver are making a specialty of sprayers this season. A special feature is that they handle five sizes, ranging from the "Little Gem," suitable for a few trees, to the "Orchard Monarch," driven by a traction or gasoline engine. They range in prices from a few dollars up, so that any fruit-grower should not be without one. A few dollars invested now will mean good returns on the investment for next year. Write for their catalogue mentioning this paper. Don't fail to read their ad in this issue.

15 Months FOR A Quarter

Send us a quarter and we will send you the Fruitman and Gardener, one of the best fruit and garden papers published, for fifteen months. It is edited by practical men, and is practical in every detail. This offer is for new subscribers only.

"I take other horticultural papers, but yours, though less pretentious, I place at the head of the list." G. G. RICE,
Council Bluffs, Iowa.

As this ad is read by hundreds of thousands, the postal authorities would not allow us to send all samples, so do not ask for one.

THE FRUITMAN AND GARDENER
25 Main Street MT. VERNON, IOWA

Forest Tree Seedlings
Apple Seedlings
Pear Seedlings
Apple and Pear Grafts
Shade Trees
Fruit Trees, Grapes
Currants, Gooseberries
and Flowering Shrubs

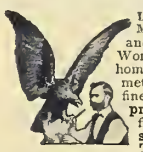
If you are interested write for prices.

Peters & Skinner, North Topeka, Kan.

REPAIRS

For CLARK'S CUTAWAY **Orchard Harrows** and his other tools. (The best tool for orchards made.) Circulars and prices for the Harrows, Plows, etc.

E. G. MENDENHALL, General Agent, Box 300, Kinmundy, Ill.



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Field-grown Budded Roses

are UNEXCELLED—None better. A trial order will convince and make you a permanent customer. Immense stock. Over 150 varieties. Shade Trees, Ever greens, Hardy Shrubs, etc. Descriptive catalogue free.

Bon Ayr Rose Gardens, Mt. Selman, Tex.

Fredonia Grape Vines

ARE THE BEST

We are growing a million vines and sell at wholesale and retail. Stock well granded and warranted true. Plant the BEST and buy of first hands. We solicit your trade. Catalogue Free.

FOSTER & GRIFFITH, Fredonia, N. Y.

80,000 GRAPE CUTTINGS

Mostly Moore's Early; some Concord, Worden, Moore's Diamond and Niagara. From bearing vineyard. Write for prices.
PITZER BROS., RED OAK, IOWA.

NEWKIRK NURSERY

Full line of Nursery stock. Special low prices on Soft Maple, 3 yrs., 12 to 15 feet. Satisfaction guaranteed.

ALBERT MATHIS, Prop. Newkirk, Okla.

Peach Seed for Sale

Write THOMAS R. HAMAN, 1614 E. Oliver St., Baltimore, Md. References as to quality and good results. Established 1879.

Our Specialty **BOXES** FOR PACKING Green or Dried **FRUITS** Our Specialty

If interested, write us for prices. CALIFORNIA PINE BOX & LUMBER CO., Rialto Bldg., San Francisco, Cal.

Fruit-Grower Subscriber Grows Record-Breaking Pears.

The fruit trade papers have commented at great length upon a record-breaking sale of a carload of Oregon pears in New York recently. It develops that this fruit was grown and shipped by a member of The Fruit-Grower Family—Mr. J. W. Perkins, of Medford, Ore.

The record car of fruit consisted of about 1,000 half-boxes of Comice pears. The fruit sold at auction in New York for from $6.10 to $7.70 per box, the average being $6.80 per box, or $3,429 for the carload. This is the highest price ever paid for a carload of pears in this country. In packing this fruit Mr. Perkins used only half-boxes, holding 26 pounds of fruit each; these boxes were made from clear No. 1 lumber. He used a lithographed paper label on the end of the boxes, fancy lace-paper border and lithographed top mat. Experienced fruit men who saw the fruit before shipment, pronounced it the "fanciest" car of fruit ever shipped from Oregon, and the prediction was made that it would be the finest car of pears ever received in New York. The price received for the fruit show that this prophecy came true.

Mr. Perkins is in the famous Rogue River Valley of Southern Oregon, where fine fruit can be produced. Notwithstanding the favorable location, however, great credit is due to the grower for the care taken in producing fruit of this quality, and The Fruit-Grower congratulates Mr. Perkins in living in such a good country, and it also congratulates Southern Oregon upon having such an expert grower.

A Correction.

Hon. E. L. Smith, Hood River, Ore., writes us that in our September number we misquoted him in regard to the price of fruit lands in the Hood River Valley. Mr. Smith says that unimproved lands are worth from $30 to $100 per acre, while improved lands are worth $200 to $400 per acre. The latter was the valuation we gave for unimproved lands. It may be added, however, that many improved farms are worth a great deal more than $400 per acre.

Protect the Ladybugs.

Last summer my apple trees were badly infested with aphids. I noticed ladybugs about the tree, and upon close examination a little later I found that every leaf that had been visited by the ladybugs had been cleared of the lice, and I think the ladybugs did the work. Has this been the experience of others? The ladybugs are also natural enemies of the Colorado potato beetle. I have noticed lately that the beetles leave the potato vines and deposit their eggs on weeds and even dry sticks, seemingly trying to hide from their enemies, the ladybugs.

J. N. STANFORD.

Shelbyville, Tenn.

Good Reading for the Family.

On page 11 of this issue appears an advertisement which should interest every reader of The Fruit-Grower. In this advertisement S. S. McClure, publisher of McClure's Magazine, offers to send the magazine for three months to all of our readers who cut a coupon from the advertisement and send to him. After reading the magazine for three months, and noting its character and the contents, our readers have the privilege of sending $1 to pay for the remainder of a year's subscription. But if they are not satisfied with the publication, they can notify Mr. McClure, and the three months' subscription will cost them nothing.

Can any proposition be fairer than this? You have the opportunity of reading the magazine, not for one month, but for three months, and then decide whether or not you think the magazine is worth $1 a year.

McClure's Magazine is one of the best known American magazines. It is clean and progressive, and for the year 1906 has arranged a most attractive literary feast for its readers. The Fruit-Grower feels that it can unhesitatingly recommend McClure's Magazine to those readers who are not acquainted with it.

But you do not have to take our word for it, nor the word of the publishers—send the coupon to the publishers, and study the magazine for yourself.

See the special offer on page 11 of this issue, and send the coupon today.

Greening Bros.' Magnificent Catalogue.

This firm has sent us one of the handsomest nursery catalogues we have ever seen. The book is a large one, comprising 148 pages; it is well illustrated with half-tone cuts, and with full-page illustrations in colors, showing various fruits in natural colors. This firm is to be commended for having issued a catalogue of this kind, for in addition to the usual advertising matter, many of the illustrations are very helpful, in showing how to lay out and plant home grounds, walks, driveways, etc. On account of these special features, this book is more than a mere catalogue, and is well worth the 25c which is asked for the same. Those of our readers who desire copies, may secure them by addressing Greening Bros. Nursery Co., Monroe, Mich., sending 25c.

Some of the Late Catalogues Received.

Boggs & Buhl, Allegheny, Pa.—A most complete catalogue of seasonable goods—such as wearing apparel for men, women and children, household furnishings, holiday goods, etc.

Fruitful Plant Farms, Chattanooga, Tenn.—Catalogue of small fruits, with grape vines and peach trees added. This firm also lists cabbage seeds for market gardeners.

Morrisville Nursery, Morrisville, Pa.—Good catalogue of ornamental nursery stock of all kinds, from large shade trees to herbaceous perennials. Well illustrated and well printed.

Austin Nursery, Austin, Texas—Good catalogue of general line of nursery stock. This firm also makes a specialty of growing tube roses, and has shipped the blooms all over the country successfully. Bulbs of the tube roses for sale at proper season.

Hagan Gas Engine & Mfg. Co., Winchester, Ky.—This firm makes gasoline engines, and the cataolgue sbows a full line of these machines, aud also lists feed grinders, etc. A feature of the catalogue is the illustrations, showing the gasoline engines at work for different purposes.

Thomas Meehan & Sons, Germantown, Pa.—This firm has sent us a copy of its booklet, "Hardy Plants Worth Having," which is an exasperating book—one whose bome grounds are limited is made uncomfortable, to feel that no place can be found to plant the good things listed therein. Fruit-Grower readers should have this book, and learn how to make their home grounds more beautiful.

Modern Canner Co., Bridgeport, Ala.—This firm makes a canner for home use, or larger ones for commercial plants, which should interest every reader of The Fruit-Grower. The use of one of these plants will solve the problem of disposing of fruits which might not otherwise be salable. Catalogue tells all about them.

Thomas-Albright Co., Goshen, Ind.—Catalogue of cider presses of all kinds and sizes.

W. P. Callahan & Co., Dayton, Ohio—This firm has sent us one of the handsomest catalogues of gasoline and gas engines we bave ever seen. The book describes the different sizes of machines, and the illustrations are so well printed that one really sees the machine as well as ig it stood before one.

W. E. Caldwell Co., Louisville, Ky.—This firm makes tanks of various kinds, for storing water iu towers, etc. A specialty is made of furnishing tanks for storing water supply for farm houses.

Black Hawk Grist Mills and Corn Shellers.

These machines, which are made by A. H. Patch, Clarksville, Tenn., have been advertised in The Fruit-Grower for some time, but we fear that some of our readers do not appreciate the value of the machines. They are well made and do excellent work. The Black Hawk grist mill will grind corn into meal, hominy and chicken feed; will grind wheat into graham flour, or will crack it for breakfast foods; will grind rice into flour, and will crack peas for soups, grind coffee, etc. The corn sheller also does good work. Both machines are of comparatively small capacity, but are just the thing to have about the farm home. Ask A. H. Patcb, Clarksville, Tenn., for particulars.

Stitching Machines for Making Berry Boxes.

The Saranac Machine Co., St. Joseph, Mich., recently sent The Fruit-Grower a copy of its catalogue, describing its machines for stapling berry boxes, etc. Many of the best berry growers have found this machine almost indispensable. By using it, one can make up great quantities of berry boxes in a very short time, and they will be better made, too, than when the old-fashioned way of nailing tbem is followed. Now is the time to investigate this stapling machine. Address the above company for catalogue, prices, etc., mentioning the Fruit-Grower when you write.

A Remarkable Offer.

The Knox Subscription Agency of 444 Knox Bldg., Kansas City, Kansas, are desirous of increasing their list of patrons for the holiday trade and in order to induce the readers of the Fruit-Grower to take an interest in their proposition, they are putting out a most wonderful bargain for this month. Elsewhere in this issue you will find their ad offering Farm Papers for 25c. Each one of these papers would ordinarily cost 25c for a year's subscription, but they are willing to lose a little money on this special offer in order to get your name so that they can send you their special catalogue. This firm is perfectly reliable and if you care to work for the Family Record that they offer for a club of four, you will be well pleased.

Watermelons from Colorado—called "winter watermelons"—were received in New York the first week in November. The melons were small and round, rind very thin, color pale green, with very light stripes. Quality of the melons was said to be good, but they were very slow sale.

I had a cherry tree with two distinct tops. One-half the tree had a small leaf, like the old-fashioned cherry, and the other half had large leaves like the improved sorts. The top was divided vertically as straight as one could stretch a line. How do you account for it? The tree died this summer. It was a thrifty tree of the Monarch variety.—J. N. Stanford, Shelbyville, Tenn.

Corn Breeding

is the principal feature of the new monthly magazine FARM AND STOCK, published at St. Joseph, Missouri. This publication is devoted principally to CORN AND LIVE STOCK, and is the only monthly magazine in existence covering these topics. The progressive breeder has many daily and weekly papers which keep him posted on market reports, etc., and FARM AND STOCK, a monthly, is his best medium for scientific instruction

Farm and Stock

for 1906 will be handsomely illustrated with half-tone pictures, and will be printed on high grade super-calendered paper. A specialty will be made of reporting meetings of breeders' associations of all kinds, and its readers will be kept in close touch with the work of the agricultural experiment stations. Subscription price $1.00 a year, but will be sent during 1906 on trial for TEN CENTS and the names of ten farmers who are interested in Corn or Live Stock. Address

Farm & Stock, 150 Charles St. Joseph, Mo.

TWELVE EVERGREENS FREE

We grow our HARDY "BLIZZARD BELT" EVERGREENS by the million. They are healthy, well rooted, vigorous. To prove it, we offer 12 choice spruces and pines 2 years old, entirely free to property owners reading this advertisement. Mailing expense 5c, which send or not as you please. A postal will bring them. Our CATALOGUE, containing 42 colored plates of our HARDY "BLIZZARD BELT" Fruits, Evergreens, Ornamentals, etc., with a mine of valuable information for fruit growers, free for the asking. Write to-day. This offer may be withdrawn later on.

THE GARDNER NURSERY COMPANY, BOX 719, OSAGE, IOWA

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and other western sections are directly reached by the Burlington Route. These lands are exceedingly valuable and productive for fruit growing, gardening and general farming.

Special folders giving reliable information regarding water supply, soil, values, markets, etc., mailed free on application.

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From St. Joseph....	$21.10	$11.45	$14.10
" Kansas City	$21.10	$12.00	$14.19
" Omaha.....	$21.10	$10.30	$11.70

Proportionate rates, round trip, to Nebraska and other territory. Write for details.

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From beets averaging 15 to 25 tons to the acre, the factory can extract 14 per cent. granulated sugar, or 280 pounds to the ton of beets.

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Its entire length traversed by the Union Pacific.

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Omaha, Nebr.

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